Telemedicine

Submitted by

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Dr

Chapter 1

Telemedicine

**Introduction**

The healthcare sector is one of the most reluctant to adopt technological advancements. The main hindrances for the adaptation of information technology (IT) in this area are the threat to patient physician confidentiality, and the security of the non-medical data of the patient. However, one of the areas that have significantly improved in medicine in the last two decades is telemedicine. Before embarking on a formal definition of the term, a brief history would be in order.

Although telemedicine has existed since the introduction of telecommunications technology, it is interesting to note that most of the researchers in the area focus on the application of the scheme in rural settings. Consequently, the earliest cases of the application of telecommunications in improving the accessibility of medical cases concentrate on the use of the telephone to contact emergency crew, to assist remotely in conducting first aid in the 1990s. An example in this, Blyth, W. John (1990) pointed out that in rural Australia the telephone was used to contact the Royal Flying Doctor Service of Australia. However, this application is not the earliest case of telemedicine. In the past, radio had increased patient’s access to medical professionals through numerous programs. Today, the scope of telemedicine has significantly expanded due to the invention of the internet, and an increase in IT platforms, that have had a profound impact on the quality of patients’ care, thus enhancing their satisfaction.

Telemedicine involves the use of information technology in providing health care services to patients from different geographical areas (Elbana, & Linderoth, 2015). Recent studies have focused on the different ways that IT has been used to improve quality healthcare provided remotely to patients. For example, Young, & Badowski (2017) explored the best practices to implement both synchronous and asynchronous telehealth. They concluded that synchronous care was best suited for improving the quality of care among chronically ill patients, emphasizing a need to use high quality devices and an encrypted network. An examination of the literature published relating to telemedicine reveals that most research has explored the ways telemedicine has evolved, may be improved, and the health issues it may be used to explore. In particular, these three common themes were identified in 3433 studies on PubMed (Wilson, & Maeder, 2015).

However, in any undertaking, the measurement of the quality of the outcome is paramount to fostering growth and improvement. In healthcare contexts patients’ satisfaction is one of the most important evaluation measures of the quality of care. Although past and present studies have demonstrated that telemedicine has improved the quality of care for various maladies, few if any have studied the influence of these interventions in improving patients’ satisfaction. Studies since have revealed that to ensure an holistic approach to care is offered, it is imperative that the patient is satisfied with the service. Therefore, it is crucial that the various methods used in synchronous and asynchronous telehealth are examined through the lens of patients’ satisfaction.

The present study extends prior research on the use of telemedicine by helping to answer questions about the way telemedicine improves the perception and satisfaction of patients, thus helping to fill the gap in the current academic literature. Prior research of telemedicine indicates that the integration of technological networks in health care systems has increased accessibility, and increased the quality of care, but no study specifically examines how it has affected patients’ satisfaction (Saigi et al., 2016). To achieve this objective, the satisfaction levels of patients in receipt of telemedicine in the rural Washington area will be explored.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Introduction**The introduction segment aims to identify the research gap- gauging the impact of telemedicine on patients’ satisfaction. The research is significant since the current literature measures the impact of telemedicine techniques on patients’ satisfaction inadequately. In addition, it will assist future researchers to focus on the systems that promise enhanced satisfaction to the patient, as well as attain the primary objective of improving the quality of care of the patient. Inevitably, the technique that offers the most satisfaction to the patient also improves the quality of care. The methodology adopted for this research is a mixed methods approach, with both qualitative and quantitative variables explored to answer the research question. The scope of the research will be limited to the rural region of Washington state.  |
| 1. Dissertation topic is introduced.
 | 1 | 1 |
| 1. Describes how the study extends prior research or fills a “need” or “defined gap” from current literature.
 | 1 | 0 |
| NOTE: *This Introduction section elaborates on Point #1(the Topic) from the* ***10 Strategic Points****.* This Introduction section provides the foundation for the Introduction section in Chapter 1 of the Proposal. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:** |

## Background of the Problem

Patients are limited regarding obtaining health care services due to accessibility, quality, and cost. As a result, healthcare institutions and other stakeholders in the healthcare sector focus their attention on telemedicine and telehealth to help address the limitations (Al-Shayea, 2015). The definition of telemedicine indicates that its aim is to improve the accessibility of healthcare to patients through using the information technology to link physicians and patients. It provides the caregivers with an opportunity of exchanging health information despite geographical barriers, thus gaining the additional attention from patients (Martin-Khan et al., 2015). One of the primary factors that influence the degree of the patient’s satisfaction is the access to medical services. Asynchronous telemedicine, does not allow one on one correspondence between the patient and the physician. Instead, the patient accesses a recording of the physician while physically present in the healthcare facility. On the other hand, synchronous telehealth is likely to be more satisfying because it allows the patient to consult the healthcare provider in real time and remotely.

 Innovations in the health care system and the use of technology have stimulated the need for transforming the way of services are offered. The use of technology increases the opportunity of optimizing healthcare system through telemedicine (Park et al., 2015). Health Information Technology supports telemedicine where practitioners offer the remote clinical services (Kidiashvili, 2011). In addition to accessibility, telemedicine has a potential of increasing the quality of care and patient satisfaction. Satisfaction rating in the health care industry is important in the provision of services.

The research on telemedicine indicates that patients perceive that using technology to receive health care services offers substantial benefits (Zhang, 2016). One of the identified benefits is accessibility and cost of care based on the time spent visiting the caregivers. The perception of patients concerning the benefits of telemedicine is that they receive considerable benefits, but research demonstrates that technology in healthcare system is not fully exploited. The exploitation of health care system is likely to improve the quality of care especially in the rural Washington State. Despite the knowledge that telemedicine improves the perception of accessibility and quality of patient satisfaction, there is no evidence of how the perception is improved in Washington state.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Background of the Problem**A satisfaction rating is one of the most commonly used performance measures in the healthcare industry. Therefore, it is imperative that the individual categories of services that providers offer be evaluated in terms of patients’ satisfaction. The primary variable that affects patients’ satisfaction is the accessibility of the medical services they seek. The different techniques employed by asynchronous telemedicine are less satisfactory than those accessed via a synchronous care system. For example, synchronous technologies enable the patient to interact remotely with the physician in real time. The use of informatics has also helped to reduce the cost of healthcare. Since most of the people who live in rural areas are subject to financial constraints, the cost of care affects their degree of satisfaction. Therefore, it is necessary to evaluate the cost of the different telecommunication schemes, and their corresponding impact on the patients’ satisfaction.Improving patients’ health outcomes is also a critical factor that affects their level of satisfaction. Numerous research studies have demonstrated that telemedicine has significantly improved the quality of care and patients’ safety. Therefore, it is imperative to conduct this research to identify the primary factors that determine patients’ satisfaction, and how telemedicine can enhance service delivery to provide those factors.  |
| 1. Identifies the “need,” or “defined gap” that will lead to the research problem statement in a following section. Citations from the literature in the last 5 years describe the problem as a current “need” or “gap” for further research.
 | **1** |  |
| 1. Discusses how the “need” or “defined gap” has evolved historically into the current problem or opportunity to be addressed by the proposed study.
 | **1** |  |
| 1. ALIGNMENT: The **problem statement** for the dissertation will be developed from and justified by the “need” or “defined gap” that is described in this section and supported by the Literature.
 | **1** |  |
| NOTE: *This* ***Background of the Problem*** *section uses information from Point #2 (Literature Review) in the* ***10 Strategic Points****.* This **Background of the Problem** section becomes the **Background of the Study** in Chapter 1 in the Proposal. It is then expanded to develop the comprehensive **Background to the Problem** section in Chapter 2 (Literature Review) in the **Proposal**.  |
| NOTE: When writing this section ensure it has a logical flow, as well as, uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:**  |

## Theoretical Foundations and Review of the Literature/Themes

**Conceptual Framework**

The models that will provide the theoretical foundation for the present research study are care models and technology acceptance models. The care models are relevant to the study because they offer the foundation for addressing the problem statement of the study. As indicated by Webb et al (2016), many patients are admitted in hospital every year, and they require care. Some hospitals experience the shortage of care professionals due to increased health care demands. However, the available technology care models enable patients to access care professionals regardless of their location. Patients admitted in critical care conditions communicate and exchange information with through electronic links. With the use of videos and audio links, health care institutions leverage their clinical resources. Telemedicine uses the diverse ways to provide care to patient who may be through virtual or home visits (Grace, & O’Dell, 2016).

Technology acceptance model allows sharing the relevant information and addresses advances in computer technology (Hu Li Za Zhi, 2015). The model explains and predicts user acceptance during the introduction of new products. Healthcare institutions use the external factors associated with the model to manipulate user perceptions and to influence success in the use of new technologies (Maiberger, 2015). The model is relevant to the study because it helps in understanding the perception of patients while receiving care. Both models contribute to the better comprehension of the study.

The body of empirical evidence on telemedicine has been expanding gradually over the years. Leoni (2015), carried out a study to establish the dynamics of patient satisfaction. The findings of the study suggested that there are variations in levels of perceived satisfaction among the patients who receive telemedicine services. The perceived satisfaction for the use of health care technology is higher than satisfaction in traditional forms of health delivery. The importance of the topic on patient satisfaction in the study is to provide details on patient perception. The factors that predicted patient satisfaction to telehealth services included patient understanding of telehealth, the quality of the service provided, and the convenience associated with the same (Polinski et al. 2016). Since telehealth services could be used if a working internet connection was available, it may be a beneficial mode of healthcare for remote regions, and at times that are not during the official working hours of the day. Additionally, female gender, and a lack of health insurance was also positively associated with a greater preference for telehealth services (Polinski et al. 2016). While many people in the United States continue to exist without a personal physician or a usual healthcare center, the use of telehealth services can be beneficial to this population. Further, as women are more likely to ignore their health due to personal, job-related, and familial commitments, telehealth services for women appeared advantageous (Polinsky et al. 2016).acceptance during the introduction of new products. Healthcare institutions use the external factors associated with the model to manipulate user perceptions and to influence success in the use of new technologies (Maiberger, 2015). The model is relevant to the study because it helps in understanding the perception of patients while receiving care. Both models contribute to the better comprehension of the study.

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Further, Waxen (2013), carried out a study determine the role of health care providers in facilitating realization of positive treatment outcomes. The findings of the study raised the need for technical skills among the practitioners in enforcing telemedicine. The technical skills of health care providers are essential in the provision of services. Professionals with well-developed interpersonal skills tend to offer the better services compared to others. It should be noted that with the widespread integration of health informatics into health care practice, practitioners are required to constantly undertake complimentary training to keep up with the growing needs of telemedicine (Rho et al. 2015).

Allergists (2016), asserts that the integration of telemedicine into practice should not reduce the caregivers involvement in treatment processes. Rather, the infrastructure should improve the quality of service delivery and facilitate the realization of positive treatment outcomes. In this respect, the study suggests that telemedicine is equivalent to in person visits despite the distance involved relationship is important for the understanding of perception and the quality of care.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Theoretical Foundations and/or Conceptual Framework**The care model and the technological model are utilized in the study. The care model is relevant because the quality of care is one of the primary measures of patients’ satisfaction. This model will assist the researcher to examine patients’ satisfaction levels, which is the fundamental aim of the research. The second theoretical framework deployed in this research is the technology acceptance model. This theory is appropriate since it will help the researcher to evaluate the Patients’ acceptance of the different technologies used to dispense telehealth care. **Review of the Literature**Leoni’s (2015) study revealed that patients’ satisfaction levels are higher when telemedicine is used, rather than traditional methods. Moreover, Polinski et al. (2016) demonstrated that patients’ satisfaction depended on their ability to comprehend telemedicine method used. However, Waxen (2013) determined that physicians who are involved in telemedicine require technical skills to improve the satisfaction of patients. A study by Rho et al. (2015) demonstrated that training the patient improves the potential of telemedicine to improve patients’ satisfaction. Allergists (2016) recommended that telemedicine should be used to enhance the relationship between medical practitioners and patients, for them to be satisfied. |
| 1. **Theoretical Foundations** **section** identifies the theory(s), model(s) relevant to the variables (quantitative study) or phenomenon (qualitative study). This section should explain how the study topic or problem coming out of the “need” or “defined gap” in the **Background to the Problem** section relates to the theory(s) or model(s). (One paragraph)
 | 1 |  |
| 1. **Review of the Literature Themes/Topics section**: This section lists the major themes or topics related to the research topic. It provides a short one-two sentence description of each theme/topic and identifies its relevance to the research topic supporting it with at least one citation from the literature. (One or two sentences per theme/topic).
 | 1 |  |
| 1. ALIGNMENT: The **Theoretical Foundations** models and theories need to be related to and support the problem statement or study topic. The sections in the **Review of the Literature** are topical areas needed to understand the various aspects of the phenomenon (qualitative) or variables/groups (quantitative) being studied; to select the design needed to address the Problem Statement; to select surveys or instruments to collect information on variables/groups; to define the population and sample for the study; to describe components or factors that comprise the phenomenon; to describe key topics related to the study topic, etc.
 | 1 |  |
| NOTE: *The two parts of this section use information from Point #2 (Literature Review) from the* ***10 Strategic Points.*** This **Theoretical Foundations** section is expanded upon to become the **Theoretical Foundations** section in Chapter 2 (Literature Review). The **Theoretical Foundations** section is also used to help create the **Advancing Scientific Knowledge** section in Chapter 1. This **Review of Literature Themes/Topics** section is expanded upon to provide the **Review of the Literature** section in Chapter 2 (Literature Review). The **Review of the Literature** **Themes/Topics** section is also used to provide the basis for the Significance of the Study section in Chapter 1.  |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:**  |

## Problem Statement

Recent reviews have established a relative lack of the necessary information on the way telemedicine in rural Washington State. Conventionally, integration of modernized systems in an existing infrastructure raises the need for additional academic research to develop models for employee training and further develop the existing body of knowledge on the system (James, 2015). Understanding telemedicine provides an opportunity to contribute to the broadening of the body of empirical knowledge, which can be used to further improve the delivery of quality health care.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Problem Statement**It is not known how skilled nurses and other medical practitioners are to handle the increase in devices used to deliver telemedicine in rural Washington. Therefore, there is a need to carry out a survey that will help to design an appropriate training program for the providers of telehealth. This research will assist in expanding the existing knowledge of how telehealth interventions may enhance patients’ satisfaction with telemedicine.**The recommended length for this section is one paragraph.** |
| 1. Presents a clear declarative statement that begins with either: “It is not known how or why…” (qualitative),

*or* “It is not known if or to what degree/extent…” (quantitative). | 1 |  |
| 1. Clearly describes the magnitude and importance of the problem, supporting it with citations from the literature.
 | 1 |  |
| 1. ALIGNMENT: The problem statement is developed from and justified by the “need” or “defined gap” defined by the Literature that is discussed in the **Background to the Problem** section above.
 | 1 |  |
| NOTE: This section elaborates on Points #3 (Problem Statement) from the 10 Strategic Points. This section becomes the foundation for the Problem Statement section in Chapter 1(and other Chapters where appropriate) in the Proposal. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format |
| **Comments from Evaluator:**  |

## Research Question(s) and Phenomenon *or* Research Questions, Hypotheses, and Variables

**Phenomenon**

The study focuses on the perception of telemedicine in rural Washington State. Washington is similar to other states, and it has challenges for physicians that may increase in the future. In rural areas, patients find it problematic to access health care providers especially when they require primary care. However, with the use of telemedicine, patients communicate with doctors through telephone and other technologies where they get advice concerning health issues. The state passed a bill and signed it into law to help increase patient access to health care (Stark, 2016). With the legislation in place, the state enjoys a collaborative system design that links professional physicians to patients.

 **Qualitative (Research Questions and Phenomena Description)**

Phenomenon:

R1: How has telemedicine in rural Washington state improved patient perception of accessibility and quality of healthcare?

R2: How does telemedicine improve perception of satisfaction in rural Washington State?

R3: Which aspects of telemedicine challenge patient perception of satisfaction and require opportunities for improvement?

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Research Question(s) and/or Hypotheses**R1: How has telemedicine in rural Washington state improved patient perceptions of accessibility and quality of healthcare?R2: How does telemedicine improve perceptions of satisfaction in rural Washington State?R3: Which aspects of telemedicine challenge patient perceptions of satisfaction and require improvement? |
| 1. Qualitative Designs: States the research question(s) the study will answer, and describes the phenomenon to be studied.*or*
2. Quantitative Designs: States the research question(s) the study will answer, identifies the variables, and presents the hypotheses.
 | 1 |  |
| 1. ALIGNMENT: The research questions are based on both the Problem Statement and Theoretical Foundation model(s) or theory(s). There should be no research questions that are not clearly aligned to the Problem Statement.
 | 1 |  |
| NOTE: *This section elaborates on Points #5 (Research Questions) & #6* *Hypothesis/variables or Phenomena) from the* ***10 Strategic Points****.* This section becomes the foundation for the **Research Question(s) and/or Hypotheses** section in Chapter 1 in the **Proposal**. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:**  |

## Significance of the Study

 The significance of the present study is to explore the perception on accessibility and quality of patient satisfaction with telemedicine in rural Washington State. The possible results are to have positive perceptions, and the implications are that telemedicine is helpful to the patients. The research results will contribute to both care models and Technology Acceptance Model through offering information on how telemedicine improves accessibility and satisfaction.

The professional application of the study in healthcare will assist in learning ways that improve patient’s satisfaction. Moreover, application of the study results will improve the use of technology in health care system for the patients in rural Washington State.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Significance of the Study**This study is significant since it will contribute to developments of the care model and technology acceptance model. In addition, it will also help the providers of telemedicine to identify the factors that determine patients’ satisfaction levels. Consequently, the developers of telemedicine informatics will be able to improve the devices used by referring to the information gained in the course of the research. Finally, the residents of rural Washington will benefit from improved telehealth care that will enhance their satisfaction.  |
| 1. Describes how the proposed research will contribute to the Literature, relating it specifically to other studies from the Background to the Problem and Problem Statement above.
 | 1 |  |
| 1. Describes how the proposed research will contribute to the literature on the selected theory(s) or model(s) that comprise the Theoretical Foundation for the study.
 | 1 |  |
| 1. Describes how addressing the problem will have practical value for the real world considering the population, community, and/or society.
 | 1 |  |
| 1. ALIGNMENT:

Part 1 is based on specific studies from the **Background to the Problem** and **Problem Statements** sections above and identifies how this research will contribute to that Literature. Part 2 is based on specific model(s), theory(s) or variables from the **Theoretical Foundations** section above and identifies how this research will contribute to the knowledge on those model(s) or theory(s). Part 3 reflects on potential practical applications of the potential research findings based on Literature in the field of practice.  | 1 |  |
| *NOTE: This section does not directly come from any section of the 10 Strategic Points. However it does build on the* ***Background to the Problem****,* ***Problem Statement*** *and* ***Theoretical Foundations*** *sections that are developed from the* ***10 Strategic Points****.* This section becomes the **Significance of the Study** section in Chapter 1 in the Proposal. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:**  |

## Rationale for Methodology

The methodology used for the study will be qualitative, and it will be used to explore the perceptions on accessibility and quality of patient satisfaction with telemedicine in rural Washington State. The methodology selected is appropriate because it will help to address the problem statement based on a single case approach. Single case study design enables to see how telemedicine has improved accessibility and quality of patient satisfaction. The purpose of thequalitative study is to explore the perceptions on accessibility, quality of patient satisfaction with telemedicine in rural Washington State.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Rationale for Methodology**For the researcher to determine the perception of accessibility to medical services by the patient and the satisfaction of the patient a qualitative approach was necessary. The scope of the research methodology will be limited to a single case study. This is critical since it will allow the researcher to examine the variables understudy more concisely.  |
| 1. Identifies the specific research methodology for the study (quantitative, qualitative, or mixed).
 | 1 |  |
| 1. Justifies the research methodology to be used for the study by discussing why it is the best approach for answering the research question and addressing the problem statement. Uses citations from original sources in the literature on the specific research methodology to support the arguments. (NOTE: Books such as those by Creswell, which are secondary sources summarizing others approaches to research, may not be used as sources in this section).
 | 1 |  |
| 1. ALIGNMENT: The selected methodology should be justified based on the **Problem Statement** and **Research Questions.**
 | 1 |  |
| NOTE: *This section elaborates on the methodology part of Point #7(Methodology and Design) in the* ***10 Strategic Points.*** This section becomes the foundation for the Research Methodology in Chapter 1 of the Proposal and the basis for developing Chapter 3, Research Methodology. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format |
| **Comments from the Evaluator:**  |

## Nature of the Research Design for the Study

The nature of the research design is based on the qualitative research method. The specific design based on the research questions and phenomenon being studied will be conducting interviews (Willis, 2015). The interview method involved the use of interview questions to obtain the required data. The use of interviews is important in the study because the design focuses making decisions based on perspective. Interviews help in getting a higher amount of data that are useful in making analysis (Abro et al., 2015). The goal of the research is to answer the identified questions using interviews and questionnaires.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score******(0-3)*** | ***Chair or Reviewer Evaluation Score******(0-3)*** |
| --- | --- | --- |
| **Nature of the Research Design for the Study** Owing to the fact that it is a qualitative study, the research design that was opted for was the use of questionnaires and interviews. This is appropriate since the aim of the research is to answer the questionnaire based on the perceptions of the respondents. In addition, questionnaires will provide sufficient data that may be used to ascertain the relationship between the variables under study.  |
| 1. Identifies the specific type of research design chosen for the study as well as a sample appropriate for the design. (e.g., Quantitative designs include descriptive/survey, correlational, causal-comparative, quasi-experimental, and experimental. Qualitative designs include case study, narrative, grounded theory, historical, and phenomenological.) Although other designs are possible, these are the designs GCU recommends doctoral learners use to help ensure a doable study.
 | 1 |  |
| 1. Discusses why the selected design is the best design to address the research questions as compared to other designs.
 | 1 |  |
| 1. ALIGNMENT: The selected Research Design should be justified based on the research questions as well as the hypotheses/variables (quantitative) or phenomenon (qualitative). It should also be aligned with the selected Research Methodology.
 | 1 |  |
| NOTE: *This section also elaborates on the Design part of Point #7 (Methodology and Design) in the* ***10 Strategic Points***. This section provides the foundation for Nature of the Research Design for the Study in Chapter 1. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from Evaluator:**  |

## Purpose of the Study

The purpose of this **qualitative** study is to explore the perception on accessibility and quality of patient satisfaction with telemedicine at rural Washington State. At this stage in the research, telemedicine will be generally defined as the diagnosis and treatment of patients using technology advancement despite their geographical location.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Purpose of the Study**The purpose of this research is to determine the perception of the people in Washington area about telemedicine. There will be about 100 participants in this research. Telemedicine is the tool that is used to offer treatment or diagnosis from a far location. |
| 1. Presents a declarative statement: “The purpose of this \_\_\_\_\_\_\_study is….” that identifies the research methodology, research design, target population, variables/groups (quantitative), or phenomena (qualitative) to be studied, and geographic location. It often includes a version of the Problem Statement as a way to define the phenomenon or variables/hypotheses.
 | 1 |  |
| 1. ALIGNMENT: The Purpose Statement includes: **Research Methodology**, **Research Design**, and **Problem Statement** from the previous sections. It also includes the target population, which should be of sufficient size to provide a large enough sample to complete the study and provide significant (quantitative) or meaningful (qualitative) results.
 | 1 |  |
| NOTE: *This section elaborates on Points #8 (Purpose Statement) in the* ***10 Strategic Points****.* This section becomes the foundation for the **Purpose of the Study** in Chapter 1 of the **Proposal.** |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:**  |

## Instrumentation or Sources of Data

The type of data required for the study will be collected from interviews and the use of questionnaires. With the interview, the researcher will interview ten patients in the rural Washington area and get their data on the issue. Before the interview, the researcher will obtain an informed consent from the participants after explaining to them about the interview. Because this is a qualitative study, the researcher will modify a previously-developed interview, questionnaire or observation form if they receive permission from the author (Phillips, 2015). For the questionnaires, the researcher will use the Survey Monkey survey application to send questionnaire to 100 patients from the rural Washington area. The use of the research notes will help in looking at the factors in the way patients perceive telemedicine as a tool of healthcare delivery. While using the data collection tools, the researcher will ensure that the interview and the questionnaires collect all the required data that will assist in answering the research questions. The research questions identified and the models will be used to develop qualitative instruments. Group experts will validate qualitative interviews and questionnaires prior to data collection.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Instrumentation or Sources of Data**The primary instruments to be employed by the researcher are questionnaires and interviews. This data will be collected from Washington area from 100 questionnaires delivered to the local population. The questionnaire and the interviews specifically address the research questions detailed above. The questionnaire and interview questions will be evaluated by experts to ensure they meet the standards required. Furthermore, researchers must ensure they obtain full permission before inviting a person to participate in the study, by seeking their informed consent. |
| 1. Identifies and describes the types of data that will be collected to answer each Research Question for a qualitative study. Identifies the data that will be collected for each Variable/Group in a quantitative study.
 | 1 |  |
| 1. Identifiestools, instruments, or databases to be used to collect the data (e.g., observations, interviews, questionnaires, documents, media (qualitative), standardized tests, surveys, and databases (quantitative)). For a qualitative study, identify the specific tools, instruments, or databases for each research question in a qualitative study. For a quantitative study, identify the name of the specific “validated” and “previously used in quantitative research” survey or data source to be used to collect data for each variable, providing a citation for the instrument or data source.
 | 1 |  |
| 1. ALIGNMENT: Aligns with the Research Questions (qualitative) or Variables (quantitative) previously described in the **Research Question(s) and Phenomena *or* Research Questions, Hypotheses, and Variables** section above.Identifies and describes the data and data source that will be used to answer each Research Question for a qualitative study. Identifies, describes, and names the type of numerical data and specific data collection instrument or source that will be used for each variable and group in a quantitative study.
 | 1 |  |
| NOTE: *This section elaborates on Point #9 (Data Collection) from the 10 Strategic Points*. This information is summarized high level in Chapter 1 in the Proposal in the **Nature of the Research Design for the Study** section. This section provides the foundation for **Instrumentation (quantitative) or Sources of Data (qualitative)** section in Chapter 3. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| Comments from the Evaluator:  |

## Data Collection Procedures

The size of the target population will be the patients in rural Washington area. However, the expected sample to be realized from the target population will be eight patients, who are expected to provide their feedback by filling the questionnaires. The questionnaires will be sent through mail, and the participants will be provided with the duration of two weeks to answer and send the filled questionnaires back.

Moreover, it is expected that five patients will participate in the interview and provide answers based on the questions asked. The interviewer will take time to introduce himself and to state the purpose of the interview. He will also state the confidentiality status of the data received to the participants. The interview will be face-to-face, and so the answers will be received immediately.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Data Collection Procedures**The participants of this study will have voluntarily agreed to partake in the study in the organization where the researcher has gained authorization. The number of participants will be 8 patients. These 8 patients will receive a questionnaire which they are expected to return after a week. The questionnaire will contain 10 questions intended to help the researcher to investigate the determinants of patient satisfaction. The researcher will also interview five patients one-on-one, with this method providing deeper, richer information than the questionnaire. |
| 1. Defines the target population and the expected sample size, which comprises **the people or organizations being studied**, as defined in the problem statement. For quantitative studies, it justifies why the target population and expected sample size (final number of people or organizations being studied for which data will be collected) is large enough to produce statistically significant results (quantitative) or meaningful results (qualitative).
 | 1 |  |
| 1. Provides an overview the proposed step-by-step procedure to collect data using the tools, instruments, or databases from the section above. Includes the steps (e.g., obtaining initial informed consent from participating organization; IRB review; sample selection; groupings; protecting rights/well-being; maintaining data security; sample recruitment; data collection instruments and approaches; field testing instruments; notifying participants; collecting the data, etc.) in a way another researcher can replicate the study. Steps may be provided in a list format.
 | 1 |  |
| 1. ALIGNMENT: Shows the steps and approach to collect data for each and every data source identified in the Instrumentation or Sources of Data section. Defines the sample as the set of people or organizations being studied for which data will be collected. The sample size must be correct for the type of design selected to get statistically significant (quantitative) or meaningful (qualitative) results.
 | 1 |  |
| **NOTE:** *This section elaborates on Points #4 (Sample and Location) and #9 (Data Collection) in the* ***10 Strategic Points***. This section provides the foundation for the **Data Collection Procedures** section in Chapter 3 in the Proposal. And it is summarized high level in Chapter 1 in **Nature of the Research Design for the Study** in the Proposal. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:**  |
|  |

## Data Analysis Procedures

After receiving the information from the participants, data will be organized and prepared for analysis. Descriptive statistics will be used to summarize the data that will help in answering the research questions. Analysis of the available data will assist in generating and addressing all the research questions. After coding, a narrative will develop across the research questions and the researcher will be able to make the decisions on the required answers.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Data Analysis Procedures**This research uses both the qualitative and quantitative research methods to gather and process the data collected. A quantitative analysis involves using various statistical methods to interpret the data from the research. For instance, it is imperative to carry out an ANOVA analysis to differentiate between the different variables. Furthermore, such an analysis helps to understand and clarify the best options to explore in the following stage of the research. A qualitative analysis provides an interpretation of data through the thematic analysis of words, and using charts and graphs to represent the data that is collected. This helps a wider range of readers to interpret the data, and make use of the information presented in the research report. |
| 1. Describes the analysis to examine each stated research question and/or hypothesis. *For quantitative studies*, describes the analyses including the inferential and/or descriptive statistics to be completed. F*or qualitative studies*, describes the specific analytic approach appropriate for the Research Design and each research question to be completed. In qualitative research the different research questions may require different approaches to doing qualitative data analysis, as well as descriptive statistics.
 |  |  |
| 1. ALIGNMENT: **For qualitative studies**, there is a clear and obvious alignment between each research question, data to be collected, tool or data source, as well as data analysis to understand/explain the phenomenon. **For quantitative studies**, there is a clear and obvious alignment between each variable, data to be collected, instrument or data source, as well as data analysis for each hypothesis.
 |  |  |
| NOTE: *This section elaborates on Point #10 (Data Analysis) from the* ***10 Strategic Points****.* This section provides the foundation for Data Analysis Procedures section in Chapter 3 in the Proposal.  |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:** |

## Ethical Considerations

First, the researcher will need the approval from the relevant authority and ensure that there is consent from the participant. Before the starting the interviews and sending the questionnaires, the procedures for the interviews will be properly laid down and the interviewees will have written versions of the procedures. The interviewees will be asked whether they are comfortable with the location of interview before starting. To ensure confidentiality, the names of the interviewees will not be exposed unless with permission from individuals. It will be important for the participants to provide their consent in a writing form before their contribution is published. In addition, participants will be informed of their rights to withdraw without restrictions. The participants will be protected, and the data received will also be secluded.

| ***Criteria (Required Components): score 0-3*** | ***Learner Self-Evaluation Score*** ***(0-3)*** | ***Chair or Reviewer Evaluation Score*** ***(0-3)*** |
| --- | --- | --- |
| **Ethical Considerations** The most profound risk that the researcher should consider is the privacy of patient participants, especially their medical records and physician patient confidentiality. Some information may be so personal that if it is shared in public it may hurt the individual concerned. The identities of participants can be protected by ensuring that the names used in the research report are not those of the informant, should they wish to remain anonymous. When external materials are used, one should acquire the permission of the owner of the materials, and at the end of the research acknowledge the owner of the material or information. The research also uses statistical procedures and steps to analyze the information gathered in the research. The data is first collected; it is then recorded and analyzed. |
| 1. Discusses potential ethical concerns that might occur during the data collection process.
 | 1 |  |
| 1. Describes how the identities of the participants in the study and data will be protected.
 | 1 |  |
| 1. Describes subject recruiting, informed consent and site authorization processes.
 | 1 |  |
| 1. ALIGNMENT: Ethical considerations are clearly aligned with, and relate directly to the specific Data Collection Procedures. This section also identifies ethical considerations related to the target population being researched and organization or location as described in the Purpose Statement section.
 | 1 |  |
| NOTE: *This section does use information from any of the* ***10 Strategic Points****.*This section provides the foundation for **Ethical Considerations** section in Chapter 3 in the Proposal. |
| NOTE: When writing this section ensure it has a logical flow, as well as uses correct paragraph structure, sentence structure, tense, punctuation, and APA format. |
| **Comments from the Evaluator:** |

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# Appendix A

The *10 Strategic Points* for the Prospectus, Proposal, and Dissertation

**Introduction**

 In the Prospectus, Proposal and Dissertation there are **10 key or strategic points** that need to be **clear, simple, correct, and aligned** to ensure the research is **doable, valuable, and credible**. These points, which provide a guide or vision for the research, are present in almost any research. They are defined within this *10 Strategic Points* document.

**The 10 Strategic Points**

 The 10 strategy points emerge from researching literature on a topic that is based on, or aligned with, the defined need in the literature as well as the learner’s personal passion, future career purpose, and degree area. The *10 Strategic Points* document *includes* the following 10 key or strategic points that define the research focus and approach:

1. Topic—Provides a board research topic area/title.
2. Literature review—Lists primary points for four sections in the Literature Review: (a) Background of the problem/gap and the need for the study based on citations from the literature; (b) Theoretical foundations (models and theories to be foundation for study); (c) Review of literature topics with key theme for each one; (d) Summary.
3. Problem statement—Describes the problem to address through the study based on defined needs or gaps from the literature.
4. Sample and location—Identifies sample, needed sample size, and location (study phenomena with small numbers and variables/groups with large numbers).
5. Research questions—Provides research questions to collect data to address the problem statement.
6. Hypothesis/variables or Phenomena—Provides hypotheses with variables for each research question (quantitative) or describes the phenomena to be better understood (qualitative).
7. Methodology and design—Describes the selected methodology and specific research design to address problem statement and research questions.
8. Purpose statement—Provides a one-sentence statement of purpose including the problem statement, methodology, design, population sample, and location.
9. Data collection—Describes primary instruments and sources of data to answer research questions.
10. Data analysis—Describes the specific data analysis approaches to be used to address research questions.

**The Process for Defining the Ten Strategic Points**

 The order of the 10 strategic points listed above reflects the order in which the work is done by the learner. The first five strategic points focus primarily on defining the focus for the research based on a clearly defined need or gap from the literature as well as the learner’s passion, purpose and specialty area focus. First, a learner identifies a broad topic area to research for their dissertation based on a clearly defined need or gap from the literature—that they are interested in because it is based on their personal passion, future career purpose, and degree being pursued. Second, the learner completes a review of the literature to define the need or gap they will address, the theories and models that will provide a foundation for their research, related topics that are needed to demonstrate their expertise in their field, and define the key strategic points behind their proposed research. Third, the learner develops a clear, simple, one- sentence problem statement that defines the problem, or gap, that will be addressed by the research. Fourth, the learner identifies some potential population samples they would have access to in order to collect the data for the study, considering the fact the quantitative study sample sizes need to be much larger than those for qualitative studies. Fifth, the learner develops a set of research questions that will define the data needed to address the problem statement.

 Based on the above five strategic points the learner now defines the key aspects of the research methodology through the last five strategic points. Sixth, the learner either describes the phenomena to be studied (if it is a qualitative study), or develops a set of hypotheses (matching the research questions) that defines the variables that will be the focus for the research (if it is a quantitative study). Seventh, the learner determines if the study will be qualitative, quantitative or mixed research based on (a) the best approach for the research, (b) the size of the sample they can get permission to access, (c) availability of data collection tools and sources, and (d) time and resources to conduct the study. Additionally, they select the best design approach considering these same factors. Eighth, the learner develops a purpose statement by integrating the problem statement, methodology, design, sample and location. Ninth, the learner identifies the data they will need to collect to address the research questions or hypotheses and how they will collect the data (e.g., interviews, focus groups, observations, tested and validated instruments or surveys, data bases, public media, etc.) Tenth, they identify the appropriate data analysis, based on their design, to be used to answer their research questions and address their problem statement.

**Criteria for Evaluating the Ten Strategic Points: Clear, Simple, Correct and Aligned**

 When developing research, it is important to define the 10 strategic points so they are **simple,** **clear** and **correct** in order to ensure anyone who reviews them will easily understand them. It is important to **align** all of the 10 strategic points to ensure it will be possible to conduct and complete the research. The problem statement must come out of the literature. The research questions must collect the data needed to answer the problem statement. The methodology and design must be appropriate for the problem statement and research questions. The data collection and data analysis must provide the information to answer the research questions (qualitative) or test the hypotheses (quantitative). Developing the *10 Strategic Points* as a two to three-page document can help ensure clarity, simplicity, correctness, and alignment of each of these ten key or strategic points in the prospectus, proposal, and dissertation. Developing these 10 strategic points on a two to three page document also provides an easy-to-use use template to ensure the 10 strategic points are always worded the same throughout the **prospectus, proposal, and dissertation.**

# Appendix B

Variables/Groups, Phenomena, and Data Analysis

Instructions: Complete the applicable table to assist with your research design. Use Table 1 for quantitative studies. Use Table 2 for qualitative studies. Use ***both*** tables for mixed method studies. This table is intended to define how you will collect and analyze the specific data for each research questions (qualitative) and each variable (quantitative). Add additional rows to your table if needed.

Table 1

Quantitative Studies

| **Research Questions:**State the research Questions | **Hypotheses:**State the hypotheses to match each Research question | **List of Variables/Groups to Collect Data For:**Independent and Dependent Variable(s) | **Instrument(s)**To collect data for each variable | **Analysis Plan**Data analysis approach to (1) describe data and (2) test the hypothesis |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Table 2

Qualitative Studies

| **Research Questions**: State the Research Questions that will be used to collect data to understand the Phenomenon being studied | **Phenomenon:**Describe the overall phenomenon being studied by the research questions | **Sources of Data:**Identify the specific approach (e.g., interview, observation, artifacts, documents, database, etc.) to be used to collect the data to answer each Research Question | **Analysis Plan:** Describe the specific approach that will be used to (1) summarize the data and (2) analyze the data. |
| --- | --- | --- | --- |
| 1. R1: How has telemedicine in rural Washington state improved patient perception of accessibility and quality of healthcare?
 |  The phenomenon understudy is to evaluate the perception of the respondents regarding the satisfaction of the patient due to increased use of telemedicine in rural Washington.  | Interviews and questionaires | Interviews will be transcribed. Data obtained from the questionnaire converted into a digital format. A suitable software such as QDA Miner to identify the patterns. |
| 1. R2: How does telemedicine improve perception of satisfaction in rural Washington State?
 |  |
| 3. R3: Which aspects of telemedicine challenge patient perception of satisfaction and require opportunities for improvement? |  |