Tele-health/Telemedicine

Healthcare Fad or Healthcare Future

An Analysis of Fifty (50) Studies/ Surveys / Interviews

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Agenda
1. Defining Tele-health / Tele-medicine
2. Objectives
3. Terminologies
4. Presentation of the research
   Methodologies of the research
   Researchers' analysis
   Surveys
   Interviews
4. Conclusion
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Definition

• Tele-health Telemedicine

The utilization of electronic devices in delivery healthcare / communicating healthcare related information in our current society
Purpose

Purpose of the Study

• There have been several studies that dealt with the issues of Tele-health / Telemedicine. These studies are extensive and are time tested. Most of these studies are analyzed within the context of a specific environment. For example, a study done in a homecare environment and analyzed within the homecare delivery context is limited in its applicability to healthcare in general. Analysis of Tele-health / Telemedicine studies obtained from various healthcare settings like hospitals, clinics, correctional facilities, homecare, physician offices etc would have a broader applicability to healthcare issues and solutions in general. It would also remove the constraints of studies analyzed in a limited environment. There are three purposes for this study and they are as follow:
The first purpose of the study was to provide healthcare providers and consumers with a broader analysis of studies to help guide both parties in their decision making process.

The second purpose of the study was to analyze the utilization of Tele-health /Telemedicine at various healthcare settings and to see if it helped to relief staffing shortage.

The third purpose was to see if Tele-health / Telemedicine help to improve care, and reduce hospitalization and cost.
Objectives

Objectives of the study
The first objective of the study was to demonstrate with the selected 50
- Tele-health / Telemedicine studies ways to effectively deliver quality health care
- relief health care professional shortage while holding down cost.
Objectives

- The second objective was to identify the knowledge and opinion of the healthcare professionals regarding the use of Tele-health / Telemedicine and to offer recommendations toward possible solutions to increase use.

- The third objective was to identify barriers to utilization of Tele-health / Telemedicine and offer recommendation towards possible solutions.
Importance of the Study

The research is important to the healthcare industry for the following reasons:

- There is lack of comprehensive studies on Tele-health / Tele-medicine that is broad enough to provide extensive comparison and analysis needed by most executives and managers who need to make decisions in this fast paced environment.
Importance of the Study

- Executives and managers often are not familiar with the variety of services available via Tele-health / Telemedicine. This research will provide the basic knowledge and choices in Tele-health / Telemedicine to the consumers and providers. When the CEOs and managers know about Tele-health / Telemedicine, they are not familiar with the variety of services and companies out there that could offer excellent products and could customize the offers to individual Company’s needs.
Importance of the Study-continuation

- This research is relevant because it will provide a general guidance to the healthcare professionals and consumers.
- The research will give the healthcare professionals a broader view of utilization of Tele-health / Telemedicine at various settings.
- The analysis will cut across all health care settings and will involve national and international studies.
Importance of the Study

- The research involved studies conducted in rural, urban and international settings.

- This will make the studies analysis a valuable tool to any entity looking to utilize Tele-health / Telemedicine.
The scope of Tele-Health /Telemedicine

- The history of Tele-health / Telemedicine goes as far back as the early 1950’s. There are even suggestions that Tele-health / Telemedicine could be traced back to the time when the telephone was invented. This research encompasses the history of Tele-health / Telemedicine dating back to the 1950’s.

- This research also analyzed current Tele-health / Telemedicine studies from different health care settings. Finally, this research analyzed survey questionnaires and interview responses completed by various healthcare personnel’s nationally and internationally. The researcher has approximately twenty four years experience in healthcare and has been directly involved with Tele-health /Telemedicine monitoring on a small scale during her first nineteen years of practice and on a large scale in the recent six years.
Definition of Terms

- **AORN**: Association of Operating Room Nurses

- **ATA**: American Tele-health Association

- **Community Setting Studies**: These are studies conducted in homecare, clinics, and physician offices

- **Consumers**: The patients who receives care from the healthcare providers.

- **Distant Site**: This is the site where the practitioner providing the professional service is located
Definition of Terms

- **DHHS**: Department of Health and Human Services
- **DHSS**: Department of Health and Social services.
- **DOD**: Department of Defense
- **e-Health**: This is the system of getting healthcare via electronic equipment.
  - This could be via e-mail, health buddy or video conferencing.
- **e-Medicine**: This is the term used to describe the practice of medicine from a distance site via electronic devices.
- **EMR**: Electronic Medical Record
- **e-Visit**: This is the term used to describe the e-mail communication between a physician and a patient. The patient describes his or her symptoms and
  - physician e-mails back his or her diagnosis of the symptoms described and recommends treatment.
Definition of Terms

- **ER**: Emergency Room

- **Experimental Group**: This is the group that participated in the experiment or the group that used the product that is being tested.

- **FSMB**: Federation of State Medical Boards

- **Health buddy**: This is a machine that downloads health questions to the clients everyday and the client answers the questions and gets feedback to their answers via the machine.

- **HHA**: Home Health Aide. These are auxiliary staff that helps the patients in performing activities of daily livings like showering, bathing, assistance with feeding, light housekeeping and shopping.
Definition of Terms

- **HITC**: Health Information Technology Coordinator
- **HHS**: Health and Human Services
- **HIPPA**: Health Insurance Portability Privacy Act
- **HPSA**: Health Professional Shortage Areas
- **I.H.S.**: Institution for Human Services.
- **Institutional setting studies**: Institutional settings studies are studies conducted in hospitals, correction facilities, nursing homes, etc.
- **JCAHO**: Joint Commission on Accreditation of Hospital Organization.
- **JWGT**: Joint Working Group on Tele-health
Definition of Terms

- **JCAHO**: Joint Commission on Accreditation of Hospital Organization. **JWGT**: Joint Working Group on Telehealth
- **Medical Social Workers (MSW)**: These are master’s prepared medical social workers that assess and manage the psychosocial well-beings of patients in collaboration with the primary physicians, and other health care professionals.
- **NCSBN**: National Council of the State Board of Nursing
- **NIH**: National Institute of Health
- **NTIA**: National Telecommunication Information Administration
- **OAT**: Organization for Advancement of Tele-health
- **Originating Site**: The site where the patient is located at the time the service is provided.
Data Sources:

Data was collected as follow:

- Analysis of fifty case studies
- Compilation and analysis of survey results from various healthcare professionals who are also consumers of healthcare.
- Compilation and analysis of telephone interviews
Data Collected

Diagnosis of diseases
• Health care professionals basic knowledge of Tele-health / Telemedicine
• Various settings where Tele-health / Telemedicine were utilized
• Various types of Tele-health / Telemedicine studies
• Duration of utilization of Tele-health / Telemedicine
• Episodes of hospitalizations and emergency room visits before and after placement on Tele-health / Telemedicine.
• Cost savings after utilization of Tele-health / Telemedicine
• Healthcare professional visit frequency before utilization and after utilization of Tele-health / Telemedicine
Data Collected

• Health care professionals perception of the pros and cons of utilization of Tele-health / Telemedicine
• utilization of Tele-health / Telemedicine in various countries where the studies were conducted
• Latest technological advancements in Tele-health / Telemedicine
• Areas where improvements are needed in the technology of Tele-health / Telemedicine
• Government policies on Tele-health / Telemedicine etc
Analysis of Data

• The analysis of Tele-health /Telemedicine studies are combination of studies performed in institutional and community settings. The survey was also conducted in institutional and community settings. These factors give credence to the result that is derived from the analysis of the data.
Overview of Data Analysis

- The study was designed with three approaches in mind.
- The first approach was to analyze the data from various studies conducted in both institutional and community settings.
- The second approach was to utilize questionnaire to obtain opinion from various health care professionals from two settings of care delivery; institutional / Community
- The third approach was to interview healthcare professionals from various health care settings. These healthcare settings are institutional and community based. The approach is designed to explore the health care professional’s knowledge in regards to their experience and confidence in the utilization of Tele-health / Telemedicine. The questions utilized in this study were analyzed one at a time and the results presented. The result is useful to all healthcare staff that needs to make decision regarding the utilization of Tele-health / Telemedicine.
Pre-testing the Questionnaire

- The questionnaire could be completed in 5-10 minutes.
- The researcher obtained one on one feedback from each participant and noted the suggestion on the pre-tests. The suggestions were then incorporated into the final version of the questionnaire. The corrections to the pre-tests were as follows:
  - Wordy questions were re-worded to make them easy to understand.
  - The number of questions on the questionnaire were adjusted to help each participant complete the questions in a timely manner.
  - Some of the response were changed from a “True” or “False” to “Yes” or “No”.
  - Some of the responses were worded as “poor”, “good”, “excellent”,
  - Other responses were worded as “very comfortable”, “comfortable”, “not comfortable”. 
Discussion of the Questionnaire

- The researcher felt that the fifteen questions were comprehensive enough to elicit the needed responses for this research. Future study could include more questions in order to elicit more specific responses. The number of responses completed by the responders to questions numbers fourteen and fifteen were less in comparison to the responses provided to the other questions. Both questions numbers fourteen and fifteen also generated the most positive responses.
Questionnaire analysis

• These two questions (14&15) were asking the responder about their opinion and the likelihood of using or recommending the use of Tele-health / Telemedicine. The researcher concluded that the responders who had negative opinion either withheld it and did not want to be viewed as negative professionals since the questionnaire were distributed and collected by close colleague and acquaintances. The researcher was also closely involved in the distribution and collection of the questionnaire. The researcher would recommend that future study be conducted in an environment that is as neutral as possible.
The Research Discussion

• Analysis of 50 studies
• Surveys
• Interviews

• United States
• Nigeria
• London
• Canada
Method Used in the Research / sites of research conduction

- The survey method and analysis of studies were used to investigate these issues.
- The settings were both institutional and community.
- The studies analyzed were national and international studies.
- The interviews were conducted via telephone in the United States, Canada, Nigeria and London.
- Surveys were distributed in all above countries.
- This on a small scale is a representation of Tele-health/Telemedicine flavor in developed and developing countries.
Summary of Method Used in the Research

The method used were analysis of research studies, survey and interview method. The research was conducted to investigate the possibility of employing Tele-health /Telemedicine as part of the solution to the following healthcare crisis:

- the shortage of healthcare workers
- the high costs of providing quality care
- the high cost of hospitalization
Summary of Method Used in Research

• Health care via Tele-health /Telemedicine would be able to help countries connect health-wise in a less expensive way. Global healthcare system may become the answer to healthcare crisis. The beliefs, attitudes and myths about healthcare may disappear as various studies from different parts of the world start to show that technology can help in the delivery of quality, cost saving care. The myth that the more it costs, the better the quality may be dispensed.
Summary of Research limitations.

• Some of the limitations of this studies are the fact that it is not direct studies. It is an analysis.

• The interviews and surveys were directed at the providers, not the patients.

• Research conducted in only four different countries due to time constraints.
Summary of Research Recommendations

• Future studies may include more countries.
• Include direct interview of the patients.
• The researcher utilized fifteen questions on the questionnaire, suggestion is to include more questions and deliver it via electronic device.
• This was done in order to reduce boredom and to prevent non-completion of survey by the health care professionals who are often busy.
Analysis of the Studies

• This type of question also helps to get a general opinion of a group of people. In this case, comments like

• “I was going to retire, but with technology like Tele-health, I am loving my job now that I can work from home.”

• “I have 25 years of critical care experience. I was getting tired of the physical toll on my health, with Tele-health /Telemedicine, I can manage multi care centers from one location and not be tired like I use to be.”
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Analysis of the Studies

- The researcher reviewed and analyzed 50 studies.

- 25 of the studies were conducted in institutional settings and the other

- 25 were conducted in community settings.
Analysis of the Studies

The studies were analyzed based on the following categories

- The location of the study
- The participants of the study
- The objective of the study
- The results of the study
- The ratings of the study
Number of questionnaire distributed:

- A total of 600 questionnaires were distributed and 466 were returned.
- This is a 77.7% return rate. (See appendix H).
- The high return rate was due to the one on one distribution of the questionnaire by the researcher and utilization of peer to distribute and collect the questionnaire.
Percentages of the Participants

The participants are identified as follows:

- **MD**: 42 Participants are physicians. This accounted for 9% of the participants.
- **RN**: 244 of the participants are registered nurses. This accounts for 52.6% of the participants.
- **Pharmacist**: 32 participants are pharmacists. This accounts for 6.9% of the participants.
- **Home Health Aides (HHA) Medical Secretaries, etc.**: This category accounts for 31.7% of the respondents.
- **Other Participants**: 148 of the participants are other healthcare professionals such as Medical Social Workers (MSW), X-ray Techs/Sono Techs, etc.
Rating of the Studies:

- The studies are rated as negative or positive result based on the satisfaction level of the participants. The following are the comments that are utilized in rating the studies as positive: “better care”, “We love it”, “Excellent”, “Good”,

- “100%”, “Satisfactory”, “cost saving”, “Pleased with the outcome”. The researcher also used the percentage rating as stated in each study when applicable.
Summary Analysis of the responses to the Fifty Tele-health / Tele-medicine Studies

- 41/50 100% positive answers = 82%

- 7/50 are 87-98% participants are satisfied with Tele-health result = 14%

- 2/50 are not satisfied with Tele-health / Tele-medicine = 4%
Descriptive Statistics

The responses were analyzed according to return rates by professional title. A total of 600 questionnaires were distributed, and 466 of the completed questionnaires were returned. The return rate per professional titles are listed as below:

- MD: 42 MD participated according to the number of questionnaire that was returned. 42 out of 466 respondents accounts for a total of 9% of the participants.

- R.N: 244 RN participated. 244 of the 466 which is the total returned accounts for a total of 52.6% of the participants.

- Pharmacists: 32 pharmacists participated. 32 of the 466 which is the total returned accounts for 6.9% of the participants.

- Other Health Care support Services: 148 of the respondents who were listed as other health care support services professionals participated. 148 of the 466 which is the total survey returned accounts for 31.7% of the participants. The description of the participants is noted on a bar graph as depicted in appendix D and E.
EXECUTIVE SUMMARY

OBJECTIVE: The objective of the research was to analyze various national / international Tele-health/Tele-medicine studies from various healthcare settings; interview various healthcare professionals from various countries in order to explore the possibility of Tele-health /
Executive Summary-continuation

Tele-medicine as a viable means of using technology to achieve the following:

- Provide quality care

- Manage shortage of healthcare professionals

- Reduce hospitalization, and control cost.
Conclusion of the study:

- Based on the data collected and analyzed by the researcher, the following conclusion was reached:
- Tele-health / Telemedicine is a viable option in providing affordable healthcare nationally and internationally.
- This is evidenced in the various national and international studies collected and analyzed; the data collected and analyzed via survey and the data collected and analyzed via interview method.
Recommendations

The researcher would recommend that the study be replicated with the following modifications:

- The research be conducted without the participation of the researcher in survey distribution.
- The actual research be conducted instead of literature review even though such international research would be expensive.
Bibliography


TELEHEALTH / TELE-MEDICINE SURVEY

- This survey is being conducted to assess the basic knowledge, and comfort level of the health care professionals in the use of Tele-health / Tele-Medicine. This survey is also being conducted as a means of obtaining the opinion of the health care professionals in the utilization of Tele-health / Telemedicine as a professional and a consumer of healthcare.

Please answer the questions to the best of your knowledge. All answers are confidential. (Please Do Not Write Your Name)

Kindly circle your title and then proceed to the survey questions.

**TITLE:**  
- RN  
- MD  
- Pharmacist  
- Social Worker  
- LPN  
- X-Ray Technician  
- Health Care Support Service Professional  
- Others

1) Do you know about Tele-health / Tele-medicine?
   - a) Yes  
   - b) No

If you answer "no" to the above question, please read the comment below then proceed to the next question.

"Tele-health / Tele-medicine is broadly defined as the use of telecommunication technologies such as telephone, fax machines, computers, videos, etc to deliver care and communicate between health care givers and recipients in distance or remote locations."

2) Do you feel that phone triage, phone consultation and utilization of fax to disseminate health care information is a form of Tele-health / Tele-medicine?
   - a) Yes  
   - b) No
TELEHEALTH / TELE-MEDICINE SURVEY

• Have you ever utilized Tele-health / Tele-medicine services in caring for your patients, in receiving care for yourself or your family members?
  a) Yes b) No

4) Did your employer or your health care provider introduce you to the use of Tele-health / Telemedicine?
  a) Yes b) No

5) Do you feel comfortable using Tele-health / Tele-medicine services to deliver care?
  a) Yes b) No

6) Do you feel comfortable in utilizing Tele-health / Tele-medicine in receiving health care services for yourself and your family members?
  a) Yes b) No
TELEHEALTH / TELE-MEDICINE SURVEY

• ) Does the utilization of Tele-health /Tele-medicine help you to perform your job better?
  a) Yes b) No
8) Does the utilization of Tele-health /Tele-medicine expedite the healthcare services you, your family members or your patients receive from the healthcare providers?
  a) Yes b) No
9) Do you utilize Tele-health /Telemedicine equipment with confidence?
  a) Yes b) No
10) Tele-health /Tele-medicine are a helpful tool for the healthcare industry
    a) Yes b) No
11) Please rate your knowledge level in the utilization of Tele-health /telemedicine
    _excellent _good _poor
12) I believe that Tele-health / Tele-medicine will revolutionize the way healthcare is delivered around the world
   a) -Agree       b) -Disagree

13) Do you agree that utilization of Tele-health / Tele-medicine will eventually cut the cost of healthcare and help reduce the shortage of healthcare professionals?
   a) –Agree  b) -Disagree

14) Would you recommend the utilization of Tele-health / Tele-medicine services to your patients and family members if appropriate,?
   a) _Yes  b) _No

15) Do you have any suggestion or comments on how to improve care or save costs with the utilization of Tele-health / Tele-medicine? Please write your comments below.
ANALYSIS OF PROFESSIONALS WHO PARTICIPATED IN THE SURVEY

- MD: 42 (9%)
- RN: 244 (52.6%)
- Pharmacists: 32 (6.7%)
- Others (MSW, X. Ray technicians, sonogram technicians, HHA, medical secretaries etc): 148 (31.7%)
Analysis of survey participants

- MD: 9.0%
- Pharmacist: 6.7%
- Others: 31.7%
- RN: 52.6%
Phone interview vs. face to face interview

57%

43%

Phone Interview

Face to Face
Percentages of Responders vs non Responders to the Telehealth / Telemedicine Survey

- Total Returned: 78%
- Total Not Returned: 22%