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# 11

## **TELE-NURSING AND THE FUTURE OF HEALTHCARE DELIVERY IN NIGERIA: ISSUES, CHALLENGES AND PROSPECTS**

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### **ABSTRACT**

Tele-nursing is a relatively new technology where the ICTs like the mobile phone, videoconferencing machines can be used by the nurses to communicate nursing care, and services with the patients who are geographically separated from them. It is also used for purposes of diagnosis, assessment, counseling and follow-up treatment. With this system, the patient can access the services of the nurse irrespective of time, climate and especially in emergencies. In spite of its benefits, there appear constraints of this technology as they relate to Nigeria, the health system and the patient's readiness to accept the technology. This work anchored on the Technology Acceptance Model (TAM) interviewed some health workers and patients and also made use of publications from the library to appraise if tele-nursing is technically acceptable as a treatment option, patients' attitude towards the treatment option, the benefits and encumbrances of the technology. It was found that although tele-nursing can save time and be convenient in managing chronic cases, it does appear that it has not generated the level of confidence needed to complement the physical appearance of the nurse in Nigeria among others. Challenges which include illiteracy on the side of health consumers were identified. Recommendations which include that government should subsidise the cost of data to reduce cost of tele-nursing communication among the citizens were made.

Keywords: Tele-nursing, HealthCare Delivery.

## INTRODUCTION

### *Understanding Tele-Nursing in Nigeria*

The world is today witnessing a changing face in the way health care is given and received in this 21st century. What obtained in the past is the conventional visit to hospitals and clinics to receive health care. Also a patient needed to be formally admitted into the health facility to be able to be attended to by the nurses and other health care professionals. Today, however, such nursing care and indeed other treatments can be given to patients in the comfort of their homes using the information and communication technologies (ICTs). These ICTs devices like the mobile phones, the Internet, the computers, video calls, zoom, Skype App, video conference cameras etc. can be used to transfer information for the purposes of diagnosis, treatment and rehabilitation. This is the concept of tele-nursing (Ezema et al., 2021).

The impact of information and communication technologies expectedly goes beyond the modern mass media and dissemination of information. They have had radical changes in other areas particularly health and medicine.

The word ‘tele’ means to operate or act from a distance. Hence concepts like television (view motion pictures that are generated in the studio in your room), tele-evangelism (you stay in your house and participate in the church services of your pastor) etc. In the same way, a sick person could stay in his room and receive health care from a nurse who is staying hundreds of miles away from his home.

Marshall McLuhan in his book *The Gutenberg galaxy: The Making of the Typographic Man*, had described in vivid terms how the electronic medium has collapsed space and time in human communication, thus enabling people to interact and live on a global scale. In this respect, he submitted that the world has been turned into a ‘global village’ by the integrative use of the electronic media (Ezema, 2008). The invention, introduction, incorporation and use of these new information and communication technologies into various aspects of human endeavour and activities have resulted in incalculable challenges, opportunities and gains.

Indeed the successful application of these technologies has assisted in transfer of professional health services resulting in this treatment option referred to, today, as tele-nursing. According to American Telemedicine Association (ATA), “tele-nursing is the use of information and communication technologies to deliver nursing care and conduct nursing practice”.

According to World Health Organization (2020), tele-nursing is the delivery of health care services by professional nurses using information and communication technologies (ICTs) for the exchange of valid information for diagnosis, treatment and prevention of diseases and injuries, research and for the continuing education of health care providers.

Nurses in nearly all practice settings can provide care at a distance. With the massive use of new communication technologies, nurses as well as patients can interact on frequent basis to share information of interest on things that might bring about promotion of health, prevention of illnesses and promotion of recovery. And given the rapid rise of tele-nursing, current and future nurses can expect to have more career opportunities in this field. In the same vein, the patients or sick can avail themselves of the wide coverage of communication media to connect to their nurses for prompt attention and care.

Tele-nursing — a unit of telemedicine technology — is also known as telehealth nursing and connotes the use of digital devices to give health care to the sick. Telemedicine was introduced in Nigeria as a health policy in 2007. According to Brown (2007) cited in Ezema (2019) Nigerian government had worked through the ministries of Science and Technology and Health to commission a pilot telemedicine using satellite-based technologies.

The use of information and communication technologies to deliver nursing care can be effected in two major ways namely: in Real Time mode where the nurse engages in a live interaction with the patients. This strategy helps both the nurse and the patient to have deep conversation and even assess the tones of discussion to determine nuances like joy, worry, confusion etc. On the other hand, the interaction can assume the dimension of Store and forward mode which describes a situation where the nurse can type out instructions, record her voice notes or pictures on instructional procedures and forwards to the patient for his or her consumption offline.

## 1.2. STATEMENT OF THE PROBLEM

The nurses in Nigeria are challenged because of the humongous health challenge in the country. With over 200 million people, out of which over 65% live in the rural areas, Nigeria is a nation that appears to need the use of information and communication technologies to augment the few available nurses that will attend to the sick. The government appears to concentrate amenities in the urban areas which are occupied by about only 35% of the population. Although it looks straight to advocate for the use of information and communication technologies to assist health services including nursing, there are issues both of ethical and economic significance that appear to blur the intents and purposes of tele-nursing.

According to Perednia, (1995) cited in Ezema (2019), although there have been some documentations on the availability and use of telemedicine (tele-nursing is a sub-unit of telemedicine), there appears to be a need for documentation on its accuracy, reliability and clinical utility as a primary diagnostic ortherapeutic modality. He averred that the available documentations where they existed, have been descriptive the than analytic. This implies that more analytic information is being expected for further evaluation of all ICT-mediated health services. Pushkin, (1995) cited in Ezema (2021) reported that *Times Magazine* found that a USA Federal Joint Working Group on telehealth has attempted to develop abroad evaluation framework for the project. While some researchers have shown that people have been mobilized to see telehealth as effective across board, others are less sanguine. The questions that readily come to the mind are:

- Is the system ( telehealth service) technically acceptable?
- Will patient value telehealth-enabled care?. What are the benefits in day-to-day operations?  
What challenges face tele-nursing practice in Nigeria?
- These are the issues of professional interest and debate which this paper seeks to clarify.

## **OBJECTIVES OF THE STUDY**

This Work Therefore Seeks To Examine:

- i. If tele-nursing is technically acceptable.
- ii. The Extent Health Consumers Will Value ICTs - Enabled Health Care.
- iii. What benefits tele-nursing offers.
- iv. The challenges facing tele-nursing in Nigeria.

## **ICT-MEDIATED CARE AND TENDER TOUCH IN NURSING CARE**

Interestingly, the core mandate of nursing is to provide holistic care that will lead to the prompt recovery of the patient. There is an interesting nexus between telehealth and tele-nursing and both are driven by the information and communication technologies. Both are geared towards the total liberation of a sick person to ensure that the needful is done to save the life of the patient. Both also strive to reduce waste of time in attending to the client's needs. Tele-nursing produces a patient that is given an all-round care.

Nursing as a profession is known for its total commitment to the care of the patients. Arising from their closeness to the clients (the nurse is indeed the closest person to the patient) every twenty-four hours of a patients' sick period. The nurse has a lot of responsibilities that are guided by the nursing code of ethics. This code of ethics serves as the foundation for nurses' ethical practice. These ethical concepts include autonomy, which is, respecting the client's rights to make choices about health care, treating others with consideration; beneficence i.e. doing good to others by helping clients to meet their biological, physiological and social needs; concept of non-maleficence i.e. requiring that patient is not caused any harm, intentionally or unintentionally. This confers on the nurse the heavy duty of protecting individuals who are unable to protect themselves. Another is justice and this implies fairness, equality and non-judgmental approach to clients; fidelity, the promise to be accountable to the patient, confidentiality of patient's private information, veracity i.e. truthfulness, and accountability. The recap of all these codes of conduct has become necessary because in whatever shade the nurse finds him/herself, she is always reminded of all these encompassing responsibilities which are not only obligatory but non-negotiable.

## **REVIEW OF HEALTH INDICES IN NIGERIA**

The health profile of Nigeria is indeed grim. For instance, according to National Centre for Disease Control NCDC, the outbreak of lassa fever in July 2023 resulted in 170 deaths.

According to National Association of Nigerian Nurses and Midwives cited in Oreh (2023), Nigeria now has nurse patient ratio of one nurse to about 1160 patients compared to WHO recommendation of one nurse to 5 patients. The most terrifying reality is that with a population of over 200 million, most Nigerians will not get to see a doctor or even a qualified nurse when they need one. These include children with preventable diseases, pregnant mothers who are at the risk of dying every day from pregnancy complications. And accident or trauma victims of injury that could have been treated.

Tele-nursing programme has consequently become imperative in consideration of the high disease burden in Nigeria. One of the reasons of the advocacy for tele-nursing is that it will bridge the gap between the rural dwellers and those living in the urban areas where

good hospitals were concentrated. And that it will reduce the strain imposed by the overload on nurses as a result of high patient ratio.

A critical strand to consider in the survival of tele-nursing is the health sector supervised by the Federal Ministry of Health. The health profile of the Federal Ministry of Health is grim from evidence in literature. According to WHO (2009) cited in Ezema (2021), Nigeria has the unenviable record of having the highest infant and maternal mortality rate in Africa and is the second highest in the World after India. Over one million children in Nigeria die annually as a result of avoidable disease conditions.

There is scarcity of specialist health providers especially the nurses, the few that are available drift to urban areas and overseas in search of better working conditions. Therefore qualitative nursing care services most times are beyond what the poor in the rural areas can afford.

Most diseases and deaths occur in the rural areas because most residents are so poor that they cannot afford to transport themselves to the cities or urban areas where specialist hospitals and well groomed nurses can be found. In Nigeria, there is absence of social welfare scheme or social services to augment the medical expenses of the less privileged. There is high incidence of infant mortality-67 newborns die in every 1000 births (Ihekwaazu, 2022). Poverty is a big challenge of the country with nearly 12% of the world population in extreme poverty living in Nigeria. According to <https://www.macrotrends.net/NGA>, the death rate in Nigeria in 2022 was 12.4% per 1000 people and he attributed the reason for these to communicable diseases such as malaria, diarrhea, measles, cholera, and respiratory infections. There is perceived lack of effective health intervention policies which resulted in under-5 child mortality rate (U5MR) in the country.

## **NIGERIA’S ATTEMPT AT TELEHEALTH PROGRAMMES**

Nigeria adopted telemedicine as a health policy in 2007. That was when a pilot telemedicine project was initiated by the federal ministries of Health and communication. In order to sustain this project, the government launched a telecommunication satellite into place (Onche, 2011). According to the Daily Sun, 19<sup>th</sup> of March, 2012, the regime of Chief Olusegun Obasanjo in 2008 built this Chinese made communication satellite-1(NIGCOMSAT-1) which was sent into orbit by Chinese Rocket at the Xichang Launch facility. This project was conceived to provide uninterrupted 15-year satellite communication to power the telemedicine and e-Health communication. This was Nigeria’s attempt to provide abundant free data and Internet services for satellite communications.

The project faced some problems following the disappearance of the Nig. communication satellite into space. Fortunately, however, President Goodluck Jonathan inaugurated the displaced satellite at Abuja. The satellite named Nig Com Sat-I-R was installed to replace the May 2007 satellite which “de-orbited into outer-space in November 2008 due to what experts described as “failure in the solar array”.

The second pilot project was initiated by the National Space Research and Development Agency (NASRDA) Abuja in 2007 in collaboration with the Federal Ministry of Health through provision services by the teaching hospitals (Ezema, 2008).

## **THEORETICAL FRAMEWORK**

Technology Acceptance Model (TAM) issued to guide this study. This is an information system that shapes how people accept the use of a technology. TAM states that the actual

use of a technology is the endpoint of the influences of information technology on the user. The theory was propounded by David 1989 in the MIS Quarterly

The theory is widely believed to access users' uses in various information technology areas. It is one of the most influential research models in studies of the determinant of information system and information technology acceptance to predict user's intentions. One of the limitations of TAM concerns the variable which pertains to the behavior of users, which is inevitably evaluated through subjective means such as behavioral intention (BI) such as interpersonal influence. The forces that drive Technology Acceptance Model include the perceived use of information and communication technologies and its usefulness to the common good of the users.

## **METHODOLOGY**

Interview method and library research methods were used. The crux of the paper is on acceptance, cost effectiveness and problems inherent in tele-nursing. Because of the technical nature of the project, fifteen health workers namely five public health nurses, five midwives, a private medical doctor, a pharmacist and three student nurses were interviewed. Five senior staff outpatients at University Medical Centre, Nsukka were purposively selected and interviewed for the impression they have on tele-nursing. Educated patients were selected due to the technical nature of the subject matter. Before they were interviewed, these patients were educated on the subject matter. The criteria for this pre-interview coaching was to prepare them because of the technical nature of the subject matter. In all a total of twenty people were interviewed.

Also, publications on tele-nursing and workshop materials were analyzed to answer the questions raised by the study.

### ***1. Is tele-nursing technically acceptable?***

Of the 15 health workers interviewed, 10 or 66% believe that tele-nursing is a welcome idea that can augment the physical appearances of the nurses in their duty posts. They cited the unfavourable patient-nurse ratio of 1160:1 in Nigeria as being indicative of the assistance of this technology to the nurses. This is in line with the postulations of Elizabeth (2000) that some basic issues have made the use of tele-nursing imperative. These include the need to cope with the shortage of nurses. By using ICTs to deliver their services, the tear and wear of travelling to and from the hospital is reduced.

National emergencies also necessitate the resort to tele-nursing practice. For instance during the 2019 Covid-19 pandemic, there was a total shutdown in human physical communication which affected human interaction. With the devices of information and communication technologies, human lives were saved to a great extent. In all these health personnel responded that the ICTs especially android phone is acceptable devices used to assist health care delivery in line with the advocacy of Federal Ministry of Health policy on telemedicine and e-Health. These views are supported by Jonsson & Willman, (2008) who argue that people trapped in volatile areas can be given nursing cares through the ICTs and save lives. Emergency health crisis happening at odd hours of the day can necessitate tele-nursing services.

### ***2. To what extent is tele-nursing acceptable to health consumers?***

This question was handled from the answers recorded from the five (5) outpatients / interviewees at the University Medical Centre Nsukka. On how the patients or care consumers accept tele-nursing, two or 40% think that the patients will accept nursing care given by



the ICTs. They argue that tele-nursing can reduce costs for both patients and practitioners as it reduces cost of office visit by patient and increases productivity from decreased employee absences. Clients especially like the idea of freely accessing specialists that might typically remain heavily scheduled with other patients.

Tele-nursing also provides a means of communication. To promote a more personal connection and build rapport between nurses and their patients, some nurse consulting practices will be conducted with the use of tele-nursing.

The non-clinical use of tele-nursing helps the nurse by consulting with colleagues and specialty experts, as well as allows for the expansion of her educational opportunities.

However, two other interviewees doubt that tele-nursing can be used to handle a sensitive issue like health.

They therefore have reservations about the acceptance of the technology. According to them, tele-nursing can not be a substitute to the physical presence of the nurse. According to them, in the past, touching is widely believed as being carried out to demonstrate care and compassion, it has been central to healing. This is in line with the views of Keith Carlson (2015) that laying of hands has been practiced for centuries. From the encouraging hand on a shoulder, to a cool hand on a feverish forehead, touch is the hall mark of caring, healing and compassion. Even as technology has become central to health care; skin-to-skin contact is an art that must remain a central tenet of nursing care. Patients are often starved for touch and they long for human contact. The two approaches to nursing care, that is, physical in-person care and tele-nursing can complement each other for the greatest benefit of the sick.

### ***3. What are the benefits of tele-nursing?***

According to Jerant, Azari, Martinez & Nesbitt, (2007) tele-nursing can be very helpful where time is of essence in an emergency and where waiting to see the health care provider one on one can lead to fatal consequences. Rise in the number of people suffering from chronic illnesses in the United States has prompted the nurses to look for alternative ways of helping the patients.

It enhances the quality of home care, particularly for the immobilized patients. In the United States, nurses use video conferencing to help patients suffering from Parkinson's disease and other chronic illnesses.

It enhances the management of chronic diseases. The introduction of tele-nursing has enabled the nurses to manage numerous chronic conditions concurrently. For instance, nurses can handle patients suffering from hypertension, chronic lung disease, and heart failure without having to hospitalize them. Today, a single nurse can serve at least 12 patients per day. Previously, a single nurse could only serve a maximum of seven patients per day. It helps the nurses to discover possible exacerbation of the health condition of the patient and respond to it in advance. Indeed, the cases of hospitalization continue to go down due to the application of tele-nursing.

The nurses can use remote cameras to examine the wound and give recommendations on the appropriate course of treatment. Further, the nurses can make a regular follow-up to ensure that the patient recovers as quickly as possible.

In most cases, patients lack adequate skills to cope with their health conditions after leaving the hospital. But with tele-nursing, postoperative patients will be able to know how to tell if they are in the recovery course after the surgery. Hence, they might develop

complications and fail to get urgent medical attention. Tele-nursing enables the post operative patients to communicate with nurses on a regular basis and to update them on their progress.

Nurses can use tele-nursing to provide, assessment, or to visually assess patient conditions and determine the need for medical intervention. The dwellers in rural areas who previously are without easy access to primary care or specialty care are opportune to benefit from the few experts located in the urban areas through tele-nursing. Patients do not need to travel often to get examined or counseled.

#### ***4. What are the challenges of Tele-nursing?***

Answers from those interviewed revealed challenges to tele-nursing practice in Nigeria. These challenges bordered on the ethical, social and emotional dimensions of health care and include:

Leakage of patient's health secrets especially in most households where phones and other communication gadgets are shared among family members. This can cause serious embarrassment.

There could be incidence of quackery as a scammer may be at the other end of the communication link might claim to be a nurse when in the actual sense he is not.

There could encumbrance in societies where it is considered a taboo for women to interact with men (including online interactions) outside the family circle.

In the event of complications arising from the online treatment, it may be difficult to hold the nurse at the other end of the communication link accountable except the transaction is duly registered.

Use of ICTs require a reasonable measure of education, hence illiterate patients may find it difficult to apply them appropriately for health services.

1. Network problems may interfere with ICTs messages and signals
2. Poverty can restrain patients from buying smart phones and other devices with the apps necessary for optimal performance in tele-nursing
3. Scammers can infiltrate the communication circuit between the nurse and patient and distort and obtain data which can be used as instrument of blackmail, e.g., pictures/videos of sensitive body areas taken in the course of normal health inspection.

### **RECOMMENDATIONS**

This paper recommends the following measures:

- 1). Regular workshops and conferences for nurses to enhance their knowledge and practice of ICTs in relation to nursing care.
- 2). Tele-nursing should be introduced as a course in our Universities and health training institutions to raise experts in the field.
- 3). Telemedicine as a course of study should be integrated into the curriculum of secondary school students to prepare them early enough on the use of ICTs for health benefit.
- 4). Government should provide the citizens free Internet services to reduce the cost of

data and encourage nurses in making use of the communication technologies for their work.

5). Government should sponsor the Nigerian Nurses to global programmes of international society for telemedicine to expose them to the trending devices and processes of tele-nursing practice.

6) Tele-nursing centres and nurses have to be fully identified and duly registered to ensure that they can be easily traced when the need arises.



## REFERENCES

- American Association of Colleges of Nursing (2017). Telenursing : what is it and what's are the benefits, Advent Health University. <https://www.edu.blog.telenursing>
- Brown, P.J. (2008). Nigeria's Chinese-built satellite goes dark. <https://www.atimes.com/china/Jk.html>
- AMA (1995). Protecting the confidentiality of patient information: critical safeguards needed for electronic transmission of health data, AMA Journal Publications, Chicago.
- Ezema, L. (2021). Developing a sustainable framework for effective telemedicine practice in Nigeria : Issues, challenges and prospects. *International Journal of communication and Social Sciences*, 1(2)
- Ezema, L. (2019). Using text messages to support ante natal care in Nigeria : Lessons from Bangladesh in Nwokeafor (Ed) International journal of communication and Social Sciences, 1
- Ihekweazu, V. (2023). Looking ahead in 2023; rekindling hope in Nigeria's health sector. [This-daylive.com>delivery](https://daylive.com>delivery)
- Ileyemi, M. (2023). Nigeria records over 4000 suspected infections in 2023, <https://www.premiumtimesng.com>
- Mcluhm, M. (1962). Gutenberg Galaxy: The making of the typographic man. <https://en.m.wikipedia7wiki>
- Odeh O. (2014). New telemedicine Centre in Lagos aim to keep patients at home. <https://www.integrall.con7new> telemed
- Ogburn, F. We. (1995). Technology or media determinism? <https://www.aber.ac.uk/media /document/tedet. htal>
- Ogoni, A. (2010). Telenursing and nursing informatics in developing countries :a study of Nigeria, *Health Journal Quarterly*, 11.
- Oreh (2023), Keynote address, President of the LondonSchoolofHygieneandTropicalMedicineNigeriaAlumniNetwork<https://dailytrust.com>nigerias-health>  
<https://www.healthdata.com>