

Knowledge and Practice of Telenursing among Nurses in Plateau State, Nigeria

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Abstract

This study was designed to study the knowledge, perception and practice of Telenursing among Nurses in Plateau State, Nigeria. It aims at the need for good policy in health care delivery and implementation of Telenursing to reduce to a greater extent the consequences associated with inadequate health care distribution. A cross sectional study involving Nurses in Plateau State, Nigeria was carried out with information on socio-demographic characteristics, knowledge of telenursing, perception towards telenursing and team work, willingness and attitude of Nurses to use telenursing and challenges affecting the implementation of telenursing in Plateau state were collected, using a semi-structured questionnaire. Data was analysed using descriptive statistical and chi-square test. The level of significance was set at $p \leq 0.05$. 270 Nurses participated in the study. Majority 148 (54.8%) had not heard about telenursing though 117 (43.3%) have heard. 90.7% participants have never been engaged in telenursing, 84.4% stated inadequate resources affected telenursing practice. Majority (84.8%), 52.3% indicated interest for telenursing to be used and for improved communication and collaboration respectively between Nurses and other disciplines. Majority 66.5% agreed that telenursing is easy to use. Only 31.1% felt that telenursing may not bring any extra value to existing nursing practice when implemented. Lack of knowledge (47.4%), funding (80%), policy (15.2%), Poverty (13.3%), time/interest/will/attitude of nurses (2.6%), Shortage/lack of manpower/workload (4.8%), and Inadequate power supply (11.1), were pointed out by the participants as challenges that can affect the implementation of telenursing.

Keywords: Telehealth, telenursing, information, technology, knowledge, practice.

Introduction

Telenursing is the utilization of information communication technology to provide nursing care from a distance by Nurses. It covers all locations reducing the problem of inadequate and poor health care distribution, poor transportation system and topography, shortage of professional Nurses, Doctors. However, Nurses' knowledge, perception and practice need to be explore for effective utilization. Following verbal interviews of some nurses in the state indicated inadequate knowledge of telenursing. There is also no available data on telenursing policy and practice in any of the health institution in the state including the State Ministry of Health. The inequitable distribution of health facilities and services has contributed to the background preventable maternal, neonatal and infant deaths (as cited by Mutihir and Golit, 2016). This has led to various form of poor health habit by the people like opting for traditional or native medicine, rituals and some spiritual means all seeking for alternative care to bridge the gap of the shortage in health care provision. The advent of technology in medical practice has brought telemedicine, eHealth, Telehealthnursing or telenursing to advance the course of care. Telenursing is seen as a good method of care delivery that aims at overcoming the challenges of Poor healthcare facilities distribution, inadequate professional Nurses, poor accessibility to health facilities, poor transportation systems and distance location hampers quality nursing care and services. According to Abbott.; Coenen, 2008 and Milligan et al., 2011, it is the raise in elderly population, increasing health care demand, and a shortage of skilled health care providers, which is a pressing issue seeking alternative ways in which Information Communication Technology can be used to meet the world's health care needs. The advent of Telehealth

nursing is to bridge the gap created by such factors. Telehealthnursing is the delivery, management, and coordination of care and services provided via telecommunications technology within the domain of nursing (American Association of Ambulatory Nursing 2004). This allow for access of nursing care by individuals globally without any barriers (Rutledge, C. M., Haney, T., Bordelon, M., Renaud, M., & Fowler, C., 2014).

The practice and acceptance of telenursing is dependent on the nurse's ability to apply the knowledge of sound communication and information technology in teaching of student nurses, delivering management and regulating of care and services when much or large physical distance exist between the nurse and patient or nurse and nurse or other health care providers. This method creates rapport with exchange of cultural ideas across communities and health care providers (Rutledge, C. M., Haney, T., Bordelon, M., Renaud, M., & Fowler, C. 2014).

The practice of telenursing is centred on nursing protocols, attentive listening, sound clinical judgment, up-to-date scientific knowledge, and trust between telenurses and callers (Hagen, Morin & Lupine, 2000). Nurses need to be advanced in the knowledge of the use of electromagnetic channels like wire, radio, and optical to transmit voice, data, and video communications signals, using electrical or optical transmissions between humans and/or computers (Skiba, D. J & Barton, A.J;2000).

Despite the advantages of telenursing in bridging the gap created by patient, based on additional burden associated with man power shortage, transportation issues, time and consequences, cost and search for alternatives means to care for a large number of patients. Online (<https://www.ncbi.nlm.nih.gov/books/NBK2687/>, 24/1/17), the need to ascertain the competent level of the nurse based on practiced and knowledge gives quality assurance and evident-based practice. Hence the need to study the knowledge and practice of telenursing among nurses in Plateau state, Nigeria.

Problem under study

The search for alternatives health care is rising globally due to increasing demand of health care where the supply is inadequate especially in African countries where there is inadequate health care facilities and distributions, poor accessibility to care, high cost of health care and shortage of health care professionals especially nurses. The increasing search for alternatives has led to high patronage of other means of care like traditional and herbal medicine or traditional attendants. In Plateau state Nigeria the practice is not different due to poor distribution of facilities, policy, distance, transport system and gross shortage of trained Nurses. The need to reduce Physician and Nurses waiting least is much and the spirit to reach out to all people is the main goal. Telehealth has being in practice in the more advantaged countries but in the less advantages countries of Africa like Nigeria the practice of telenursing may be difficult, even where Information Technology is practiced. It may be faced with challenges of acceptability, knowledge and practice by Nurses.

Knowledge is the key factor in its application despite the advantages attached to its use in proving improved nursing care to the patients in remote or less privilege settlements. It is in this line that the researcher need to know the knowledge level of nurses and their preparedness to practice telenursing in their practice areas.

Rationale of the study

The outcome of the study will enhance the knowledge base of Nurses on the need to utilize telenursing in meeting patient nursing needs in the community especially in disadvantage areas and post hospital admission. Hospital management and other policy makers will see the need to establish telehealth and telenursing centres in order to decongest the facilities and also allow for patient follow up, thereby reducing the physician waiting list and allowing nurses time to attend to other clinical challenges.

General objective

The increased demand of health care services in Nigeria and the world has brought about many challenges like increases hospital visits, raise in discharge patient waiting follow up list, large distances in search of health care or expert care, poor transport system and its consequences and shortages of skilled

manpower shall led to quest for alternative means of delivering health care especially nursing care to people. This brought about rendering of nursing care/service through telenursing to people from a large physical distance, utilizing ICT tools. Though this method has brought improvement in not only accessibility to health care facilities but also reduction in burden associated to delay. However, nurses' knowledge on the practice of telenursing is a key factor in providing quality care with reduced error. It is this possible gap that prompted the researcher to look at; knowledge and practice of telenursing among nurses in Plateau State.

Specific objective

1. To assess the general knowledge of the participants about telenursing.
2. To assess the perception of the participants towards telenursing and team work as it influences the use of telenursing.
3. To ascertain the attitude and willingness of the participants to use telenursing.
4. To explore possible challenges that may come up in the implementation of telenursing.

Limitation of the study

The study was limited by short period to collect data and analyse same. The respondent returned of questionnaire as a result of duty shift, absent from work due to excused duties and holidays/off duty. Respondent knowledge of the research problem.

Methodology of the study

Introduction

The method utilized for data gathering and study in order to draw a conclusion based on respondent's responses. The chapter also focused on research setting, population, sampling, and instrument for data collection.

Study area

The study was conducted in Plateau state located at the middle belt region of Nigeria covering an area of 26,899 square kilometers with an estimated population of about three million people. It has an estimated number of 1200 Nurses and Midwives covering the tertiary, secondary and primary health care institutions, though this record may not be reliable as a result of poor documentation and tumult or highly disadvantage settlements and the crisis situation that affected the state.

Study population

The target population composes of all nurses who are present within the period of recruitment in Plateau state, Nigeria covering tertiary, secondary and primary health care facilities.

Study duration

The study was conducted in January and February, 2017 (two months)

Sampling method

The researcher adapted a randomized convenience sampling technique in selecting the sample for the study. The sample was drawn from Tertiary (Teaching and Specialist hospitals), Secondary (General hospitals) and Primary (PHC) levels of health care in the state, using Jos university Teaching Hospital and Plateau Specialist Hospital, General hospital Barkin-Ladi and PHC Barkin-Ladi respectively.

Sampling size

Sample: to determine the sample size the researcher used the Yamani's formula

$$N = \frac{N}{1 + N(e)^2}$$

Where N=Sample size=?

N= Target population

e=Sampling error at 95% confidence interval=0.05

N= $1200/1+1200(0.05)^2 = 300$

Study tools

The study tool was a self-developed close ended questionnaire with options. The tool is divided into two sections. Section A: socio-demographic data of the respondents and

Section B: comprises of questions to determine the knowledge level of nurses on telenursing, data to ascertain nurses' practice of telenursing, factors influencing the practice of telenursing among nurses and influence of socio demographic characteristics on knowledge of nurses on telenursing

Reliability

The instrument was rated by the project supervisor and another academic versed in research from the University of Jos.

A pilot study was carried out among nurses working in University of Jos clinic, Jos. The study was for instrument test retest. A reliability coefficient of 0.75 was achieved within the instrument and

P value of 0.05. The instrument was found to be highly reliable.

Collection of data

The state commissioner health and the chairman ethical committee of the state ministry of health gave an ethical clearance yet permission was obtained from the research and ethic committee of the hospitals involved in the study. Three research assistances were trained for a day on methods of collecting data to assist with the data collection for a week.

Data analysis

Data collected were analyzed using statistical package for social sciences (SPSS) 23.0. Both descriptive statistics were used to analyze the data and Pearson correlation r to test for hypothesis.

Results

Characteristics of the study population

A total of 270 questionnaires were filled and returned, out of 300 that were shared. The findings were on:

The majority of the respondents were female 215 (79.6%) females and 55 (20.4%) males. The respondents were nurses, this indicated that majority of nurses in plateau are female.

The table indicated that majority of the respondents are aged 40>, signifying their level of practice which may be related to their level of knowledge in technology in nursing.

98.5% of respondents had work for below 20years while the rest above 20years, signifying that respondents had work enough to have telenursing experience.

To assess the knowledge level of the participants about telenursing

163 (60.4%) respondents have certificate in nursing, 62 (23.0%) of respondents have bachelor in nursing science degree with 3 (1.1%) having Masters of nursing science. This shows that the knowledge level of respondent in the study area need to be encourage as those with advanced nursing qualification are

inadequate to pilot nursing practice in this technological area. Table 4 indicated, Majority 112 (41.5%) respondents do not have any form of training in respect to information communication technology, 104 (38.5% respondents possess certificate in information communication technology, with 50 (18.5%) had training to diploma level and Bachelor of Science in computer 1 (.4%). This shows that nurses in the study area need more training in information communication technology.

From table 6, majority 148 (54.8%) said they have not heard about telenursing before, while 117 (43.3%) said they heard about it. This calls for more training on telenursing as some nurses were yet to hear of it.

From table 7, 48 (17.8%) indicated that they heard about it from literatures on the internet, 36 (13.4%) heard it from colleagues, 13 (4.9%) heard it from books, seminars and workshops, from training institutions only 14 (5.2%). However, majority 147 (54.9%) did not hear of it. The chart showed that there is need for training of student nurses (future nurses) and more CNE is needed for nurses on telenursing in the study area.

Majority 245 (91.1%) had no practice or engaged in telenursing practiced. The rest 23 (8.6%) respondents had some experience with the practice, as seen in table 8. This indicated inadequate awareness and exposure to the knowledge and practice of telenursing. Thus suggesting call for training.

Table 9 shows, 51 (18.9%) have been to telenursing practicing health care centre but majority 215 (79.9%) also indicated that they had not been to telenursing practicing health care centre before. Indicating inadequate knowledge and awareness..

When asked where, various options were noted; these were illustrated in Chart 3 above *. Their knowledge about telenursing using 7 questions which cut across the content, utilization, implementation and application of telenursing. This information is presented in the table below.

Table 10; Shows that, a greater number of respondents 117 (43.3%), 102 (37.8%) disagreed and strongly disagreed respectively when added up indicated that 219 (81.1%) accepted none utilization of telenursing in the practice area. 9 (3.3) and 41 (15.2) making strongly agreed and agreed respectively, that is about 18.5% of the participants mentioned that they utilizes telenursing. This indicated that either most respondent are talking of formal practice or did not linked the use of ICT devices like phone, emails and video to telenursing.

The Perception of participants towards telenursing and team work as it influences the use of telenursing

Table 11, shows 75.2% supported the fact that telenursing allows for timely monitoring and provision of care to outpatient while the rest about 24.8 opposed to it.

Table 12; indicated 83% respondents do not see the need to use it in their unit to followup discharged patient, with 13.2% seeing the need to utilize it. This may be attributed to inadequate exposure, lack of training or difficulty in accepting new changes.

Teleconsultation by nurses and other health care providers be practiced in the area as seen in Table 13; indicated that 40.6% see it as an accepted possibility while majority about 58.5 did not agree. It seems impossible to majority due to lack of exposure to ICT usage and training or visit to telenursing institutions.

Table 14; shows the responds of nurses, when asked if Nurses can engage other nurses in telenursing conferencing to discuss and update knowledge, 46% agreed against the majority 52.9% that disagreed. This indicated either the lack of knowledge or non-engagement on teleeducation or inadequate knowledge or use of video calls like skype or chats using phone like whatsapp. Showing that the perception level is less.

Table 15, on whether there is generally a good team spirit among nurses utilizing telenursing, majority 64% responded positively, though 34.9 did not believe so. There is the need to motivate nurses on need for team work in order to provide quality care through telenursing.

Table 16, indicated that, when asked if there was enough resources put in place to ensure telenursing services for staff motivation, provision of information systems, ICT machines and equipment maintenance. Majority (84.4%) were of the contrary opinion. Therefore, funding should be looked into and improve to ensure quality and wider telenursing services.

Table 17; The response was observed from respondents when asked if everyone's opinion was usually heard or listened to, many 65.1% indicated that this was not the case. This shows that respect for opinions need to be worked on as lack of respect for opinion may affect patient safety. Therefore, this gap need to be studied, while Table 18; 55.5% and 56.7% applauded the fact that their physicians and nurses work together as a well-coordinated team; and that disagreement is expressed in a constructive manner. Table 19; indicated a good number (63.0%) affirmed that they were encouraged to report any concerns encountered during telenursing.

From table 20 it is clear that 192 (71.1%) accepted that disagreement between team members in the practice of telenursing is discussed amicable, demonstrating good team spirit and correction of errors. Despite that, there is the need to improve on opinion sharing as the rest 29.1% still do not accept constructive manner of discussions. Table 21; indicated Majority (57.4%) confirmed job satisfaction achievement with telenursing. The rest were on the contrary opinion, which may be attributed to possible lack of adequate knowledge or exposure.

To ascertain the attitude and willingness of the participants to use telenursing

Information on the willingness and attitude of participants towards the use of telenursing was also sourced for, Table 22; Majority (84.8%), indicated that they wanted telenursing to be used in nursing practice, while the rest objected for possible reason of probably linked to inadequate knowledge of ICT or telenursing awareness. Thus, indicating that majority of the respondents need telenursing as part of nursing practice in the study area. Table 23: shows majority 185 (69.9%) respondent disagreed with the assertion that nursing care is efficient without having to use telenursing. This is based on the knowledge of telenursing most probably again those that agreed.

Table 24; on Telenursing might waste time and can make our nursing practice less efficient majority 227 (83.9%) respondents disagreed, while the rest 16.1% agreed. This signifies that majority agreed that telenursing does not waste time and it makes more efficient.

Table 25: shows that Telenursing made us have more confident and competent base on the findings that above average 194 (71.9%) agreed that confident and skills are acquired with telenursing, 74 (27.4%) disagreed. Table 26: majority 219 (81.1%) asserted that using telenursing will improved communication and collaboration between nurses and other discipline contributing to wellbeing of the patient.

Table 27; indicated that 64.8% agreed that telenursing may not be very important as it has its own handicaps. This perception may be based on lack of willingness to utilize from thoughts of uncertainty. Table 28; indicated that 180 (66.6%) respondents agreed that telenursing is easy to use, 88 (32.6%) believed it is difficult. This calls for more training. Table 29; shows majority 74.8% agreed that it is important to use telenursing in nursing generally. This indicated the willingness of the respondents to change and attitude to ensure efficiency. Table 30; Indicated, majority (79.6%) felt that telenursing may improve nurse-patient relationship. This may be related to the lifting of burden of transportation and frequent check on the condition with useful advice or nursing care.

Table 31; Transcultural nursing practice is likely to be improve through telenursing was an expression by 81.5% from the chart above. This may be the result of communication from all locations across the globe, race and tribes.

Table 31; Indicated a large number 237 (87.8%) respondents believed that implementing telenursing is a good decision, 30 (11.1%) do not want it implemented. The fear of the minority may not be unconnected with the thinking of losing of job with the advancement of ICT or attitude/willingness toward accepting change. Table 32; Shows 68.2% respondent disagreed that telenursing may not bring any extra value to existing nursing practice before its implementation, 84 (31.1%) agreed. This signifies that more value will be achieved in nursing practice with telenursing.

Participants were asked whether if they were discharged as patient, they would prefer telenursing to be applied to them, Table 33; above average 179 (66.8%) said they would want telenursing to be used on them if they were discharge patients, while 89 (33.0%) said no. This shows that the willingness to utilize

telenursing is yet to be accepted by some nurses. This called for further education on telenursing practice within the study area.

H02: There is no significant relationship between respondent's attitude and the utilization of telenursing

From table 3 and the summary above, it is obvious that that there is significant relation between attitude and practice of telenursing, thus not in agreement with the hypothesis stated above.

Possible challenges that may come up in the implementation of telenursing

Table 34; Shortage/lack of manpower/workload on Nurses 13 (4.8%), Lack of time/interest/will/attitude of nurses 7 (2.6%), Lack of knowledge of telenursing from nurses 128 (47.4%), lack of instruments and other equipment/ICT tools 42 (15.6) were pointed out by the participants as possible challenges that can affect the implementation of telenursing in Plateau state. Majority of the challenge as indicated was inadequate knowledge, which call for more training and retraining on telenursing for nurses and it should also be taught in various institution of training.

Table 35; Illustrated that 80 (29.6%) saw lack of funding as a possible barrier to the implementation of telenursing, 41 (15.2%), 36 (13.3), 30 (11.1) indicated lack of policy, poverty and inadequate power supply respectively as contributory factors or other barriers that affects telenursing implementation.

Discussion

Knowledge of telenursing among the respondents

From this study, participants had moderate knowledge of telenursing while majority had inadequate knowledge; which is contrary to a similar study in the South Africa (Siinclai, Wynchank, Jill F, 2010) where the knowledge and practice is high among nurses. The internet was the most mentioned source of information for respondents with adequate knowledge, this could be explained by the recent upsurge in information technology and social networking, and it also points to the fact that Nurses had good knowledge-seeking behaviour, this should be encouraged. Although their knowledge score was moderate and in line with prior findings, however there is still the need to further educate Nurses about telenursing, most (84.2%) had not been to a centre where telenursing is practiced and did not know that one of the objective is to reduce hospital visits or return followup hospital visits by patient, Including the reason of allowing nursing care to be accessed from any location according to 68.0%.respondents, Yet only 4.4% could not identify the five fundamental issues in the telenursing when asked. This called for adequate training and education for Nurses to acquire full knowledge of telenursing.

H01: There is no significant relationship between respondent's level of knowledge and the practice of telenursing

This hypothesis is proven to be incorrect as demonstrated above in table 1, where more than half (54.8%) have not heard about telenursing, 54.4% did not respond when asked they have heard of where it is practiced, while 79.6% have never been to a centre where telenursing is practice, majority 98.1% claimed they have not seen it in practiced, while 90.7% accepted not ever engaged a patient in telenursing as a followup procedure in their centre, above half (57.8%) have not sought for advice on how to manage a patient from a nurse in a distant facility that could have been referred, despite about 61.5% of nurses with more than 20 years working experience and the rest with about 1 to 19 years, indicating inadequate knowledge leads poor practice despite the availability of mobile phone and cheaper rates.

Perception of the participants towards telenursing as it influences its implementation

The inadequate utilization of telenursing in Plateau state among Nurses agreed with a similar study conducted by Siinclai et al, 2010 which indicated the several challenges in Africa as being responsible for the low usage of telenursing in developed countries of Africa.

There is also the need to improve upon telenursing as a means of allowing access health care to all and to reduce returned visits for discharged patient and good triaging before referral to hospital generally, the contrary opinion among the respondents about having enough resources put in place to ensure telenursing practice effectively is of great concern; they also indicate that people's opinion is not usually listened to similar perception was observed, this indicates that telenursing is not adequately applied or rather not in use, in Plateau state health care centres among Nurses, since almost all these areas are included and should be considered if telenursing was actually in use. There was also a recommendable attitude towards the timely followup of patients among the staff, which also shows that the participants have a good disposition about the interest of their clients.

However there is the need for improvement in terms of team work, since there still remain varying degree of opinion in respect to good team spirit among them and that their physicians and nurses work together as a well-coordinated team; many even concurred about disagreement on opinion not expressed in a constructive manner during telenursing. All these shows the level of interaction and social understanding among telenursing nurses and others and reflects some level of dichotomy, there should be better friendliness and associations among the staff, this will go a long way to bridge the gap that usually exists between the different professional categories and fosters co-operation which in turn improves service delivery.

Willingness and attitude of participants to use telenursing

This study shows that almost all the participants in Plateau state are willing and have a positive attitude towards telenursing, they believed that telenursing would improve the clinical outcomes in their nursing practice and majority (66.8%) said they would want telenursing to be used for them.; however the indifferent disposition expressed by some respondents as to whether the telenursing may bring any extra value to existing nursing practice before its implementation needs to be further assessed, one of the reasons might be that the full benefits and components of telenursing is not yet fully understood by the participants.

Possible challenges/advice/suggestion towards the implementation of telenursing

Lack of team spirit or dichotomy among the Nurses, though majority 64% shown a good team spirit yet the opinion of other respondent was a major challenge identified, this has been a major bottle-neck in Nigeria. Recently, conflicts and disagreements among Nurses, Doctors, and other health professionals have seriously affected medical service and health care delivery negatively. There have been strikes and slowdowns which have led to shutting down government hospitals for long periods and which unarguably has led to deaths which could have been prevented and meltdown of the health sector services. It is not surprising then, that more than a quarter (34.9) of the participants in this study has pointed out this issue as being a serious challenge that might also affect the implementation of telenursing in the state since in there are also Doctors and other health professionals working together in a team.

Secondly, inadequate supply of ICT device and other equipment/facilities and Shortage or lack of manpower were indicated as the next major challenges, without the structures, instruments and staff, cutting-edge strategies like telenursing would be difficult to implement.

Lack of commitment from the Administration or Management unit, the management has always been known to greatly influence the implementation of new policies and strategies in an establishment , the hospitals is not to be left out in this case. The leadership of any establishment plays a major role in adoption of new ideas, this is in line with the results in a previous studies (Kariyoi et al., 2013, Vats et al, 2010 and Edmondson, 2003). Also if the administration or management of this hospital considers the telenursing as priority, it is easier to obtain funds to train the nursing staff and purchase instruments or other equipment that must be in place to ensure the kick-off of the use of telenursing.

Summary

This study investigated the knowledge and practice of telenursing among Nurses in plateau state, Nigeria. The specific objective was to assess the general knowledge of the participants about telenursing, perception

of the participants towards telenursing and team work as it influences the use of telenursing, ascertain the attitude and willingness of the participants to use telenursing, explore possible challenges that may come up in the implementation of telenursing and identify areas for change in the roles of the hospital administration towards implementation of telenursing.

The summary of the findings are as follows

270 Nurses participated in the study. Majority 148 (54.8%) had not heard about telenursing though 117 (43.3%) have heard. 90.7% participants have never been engaged in telenursing, 84.4% stated inadequate resources was in place to ensure telenursing practice. Majority (84.8%), 52.3% indicated interest for telenursing to be used and for improved communication and collaboration respectively between Nurses and other disciplines. Majority 66.5% agreed that telenursing is easy to use. Only 31.1% felt that telenursing may not bring any extra value to existing nursing practice when implemented. Lack of knowledge (47.4%), funding (80%), policy (15.2%), Poverty (13.3%), time/interest/will/attitude of nurses (2.6%), Shortage/lack of manpower/workload (4.8%), and Inadequate power supply (11.1) were pointed out by the participants as challenges that can affect the implementation of telenursing

All the research hypotheses are invalid to the study. This is evidenced by majority of the participants' knowledge and utilization of information and communication technology in patient care.

Limitation of the study

This study though carried out in Plateau state, Nigeria. It covers all the three tiers of the health system practiced in Nigeria for that it can be generalized as there are no known adequate publication on the subject under study, despite some constraints suffered like finance, inadequate time, sample size and knowledge of respondents on research methods.

Conclusion

Though there is variations of opinion on the knowledge of telenursing among nurses in Plateau, it can be said to be good, though complete knowledge about the components and application is not fully known. In conclusion efforts should be geared to more enhancing complete knowledge on why and how telenursing should be used. Patient safety was perceived to be of high priority however team work should be improved upon. Generally the Nursing staff were willing and have a positive attitude towards the implementation of the strategy if all other influencing factors are put in place. Challenges highlighted should be looked into and internally solutions should be sought to reduce or totally eradicate these problems, otherwise the implementation of new strategies like the telenursing would remain unachievable.

Finally the role of administration in the planning and implementation of telenursing cannot be over-emphasized, there should be a collaboration of all unit heads particularly the nursing unit for a successful implementation. There is also need for training and frequent re-training of all the Nurses, this will foster a good understanding and implementation of telenursing.

Recommendation and suggestion for further studies

The need to improve health care through equitable distribution, enforcing PHC, increasing accessibility of expert nursing care, proper triaging of patients before referrals and reducing hospital visits, physician and nurses waiting list and transportation and its consequences in the Plateau and other states in Nigeria. Telenursing education and exposure for nurses should be employed. The practice of telenursing adequately linking the three tier of health system in Plateau need to be introduced. Funding, ICT tools, Man power development, and policy need to be in place through Government and other NGOs with interest in quality health care.

Gaps in knowledge of telenursing and nursing practice

Has led to argument on:

- Its acceptability for improving nursing practicing.

- Nursing care accessibility at all locations.
- Exposure to telenursing practice for nurses.
- Clinicians have been advised to ensure adequate utilization and training on telenursing. Caution should be applied in applying telenursing to provide nursing care.

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