Tele-nursing an Emerging Innovation in Health Sector

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Limited access to health care services, difficult admissions, early discharges from hospitals and long cues of out patient departments have increased the need of a kind of health care service which can be accessed form home or from remote areas. To meet this need of the hour an innovative cost effective health care modality came into existence which is known as telemedicine. The word telemedicine came form the Greek word telos, which implies distance. This concept might have been originated centuries ago but the current system of telemedicine was first used in 1960 by National Aeronautics and Space Administration (NASA). The Physiological measurements of the astronauts were telemetered both from the spacecraft and the space units. The sophisticated telemetry and telecommunication systems were developed by the scientists\(^{(1)}\). Presently the telemedicine has expanded rapidly and many disciplines render services through it. In addition to other telemedicine related services, nursing services can also be provided through distance. The delivery of nursing service with communication technology through distance is called as telenursing\(^{(2)}\). This field of health care is not so very well established all over the world, but is a vary valuable innovative method of providing nursing care especially in home health care\(^{(3)}\).

Telenursing is defined as the “use of telecommunication technology to deliver nursing services to client at a distance”. It combines information technology to render nursing services to clients at geographically distant locations\(^{(4)}\). The American Nurses Association has defined “telenursing as a subset of telehealth in which the focus is on the specific profession’s practice (i.e., nursing)”\(^{(5)}\). Nurses’ use technologies such as the Internet, computers, telephones, digital assessment tools, and telemonitoring equipment in their practice to assess, plan, intervene, and evaluate the outcomes of nursing care. This technique has expanded the scope of nursing practice across the states and international borders and it is also changing the face of standard nursing practice\(^{(4, 6)}\). This is now a upcoming carrier option for the nurses of 21\(^{st}\) century\(^{(7)}\). In America 40% home services are teleheath based. It is believed that in United States half of nurses home visits are replaced by telenursing\(^{(6)}\). In developing countries where there is shortage of nursing, this innovation can play a vital role in patient care and they will able to access nursing services sitting at their home.

Telenursing has been used successfully in many activities which include:

Providing community services like home based care/ outreach services. If the nurses are provided with adequate education for their role, full technological facilities, decision support software, ready access to supervision and continuing education they can deliver services safely. The Child and Adolescent Psychological Telemedicine Outreach Service (CAPTOS), geriatric outreach services, rural clinics, care of patients having chronic illness at their home are some of the examples.\(^{(6, 9-22)}\) Cable television-based interactive video system, repeated telephone calls for education and follow up, electronic transmission of patient’s record, and interactive websites are use to deliver services at home. Nurses’ advices are based on the nursing tele-assessment, diagnosis and management protocols.

Assessment of conditions and triage: assessment of client on telephone and triage; use of interactive videos and entering appropriate data into the software are helpful. It is always helpful to ask relevant open ended questions.\(^{(23-27)}\)
Care of school children: self care abilities among school children can be increased with this intelligent technology. Many children can be educated at same time. (28-29)

Palliative care: NurseLine with the expertise of specialized community-based palliative care services, with a commercially available video-phone connected with the client’s home telephone line. A hands-free speaker-phone and a miniature video-camera (for close-up views) can be connected to the video-phone which can be used to provide emotional and informational support. (12, 15, 30)

Management of patients is done by relaying their vital information (vital signs, ECG report) to the telenursing center. Patients having heart failure and related problems/pulmonary diseases, depression, chronic conditions like diabetes, stoke, chronic obstructive pulmonary disease have been successfully managed by telenursing. (13, 17, 29, 31-44) Pain and fluid management can also be done and the good example of this is care of pediatric client after tonsillectomy. (11, 30, 45-47)

Nurses have also addressed the problems of menopausal women, patients having ostomy and wounds through telenursing. (48-50)

Telenursing in ICU: The nurses working in ICU can get instruction for the care of patient through interactive videoconferencing and manipulating sensors. The nurse can also get nursing care protocols which are evidenced based form the nurses working at level I hospitals. (51)

Suicide and HIV/AIDS patients help lines have also been established in many countries. Such lines are operated by psychiatry and medicine departments of PGIMER Chandigarh, India.

Education:
Teaching the skills and continuing education which is basic to evidenced based nursing care can be carried out by videoconferencing. This technology has also been used to teach nursing students the care of patients in community through simulation. (52) Nurses have also used telenursing to get ICU care guidelines. (53) Webinars and mobile apps on essential new born care nursing developed by WHO newborn care center AIIMS, have been effectively used to educate nurses/ nursing students in India. (54) Indian Nursing council is also using it for sessions of expert faculty and research protocol presentations of Ph.D nursing students. Telenursing center has also been established at Mysore based Vishwabharati school and college of nursing. The nurses of Nepal and Afganistan have also been educated through the telemedicine center of PGIMER, Chandigarh.

Benefits of telenursing to nurses:
Improved salary, and flexible working hours: Nurses if work from home they will feel at ease to work flexibly. They can earn more by working for more hours and providing services to many patients at a same time with in short period of time. (9, 55)

Less travel and Cost-effective for nurses: The travel expense of nurses has been curtailed to zero as they provide services from their home and they are able save money.

Easy to provide remote services: This innovative technique has made it is easy to provide services to people living at far flung areas. (6, 9-22, 56)

Improved job satisfaction and opportunities for skill development: Nurses working from home feel that they are more productive, have to take fewer sick leaves and their employer also reported that there is lower attrition rate. This is how this new innovative technology has increased the satisfaction among nurses with their new roles. The nurses also feel satisfied with the specific knowledge and skills used by them to deliver telenursing services and the settings in which they learn such skills, and competencies. (55, 57)
New carrier option: The growing population has overloaded the hospitals, so the need for home based care has increased. The nurses are also willing to opt for a job where they can earn more and have more satisfaction. 

Data sharing: Through use of internet and web based interface now it is easy for nurses to share data/get guidelines form different settings.

Rapid response time: Nurses can respond with in a minute if technology is in a well working condition. This is helpful for the patients having suicide tendencies. These patients can seek rapid help form suicide help lines.

Benefits to patients

The population living in remote areas can obtain health care at their destinations if they have internet facilities on their phones/computers similarly the travellers can also get services at their home. Easy access to high quality care at minimized cost is available to patients as they are not supposed to travel to distant location nor are supposed to stand in long cues to get the services. This is how the prompt care makes the clients more satisfied.

Competency, Qualifications and Skills required

To be a telenurse the nurse must have a positive attitude, open-mindedness, knowledge and ability to navigate the technology and understand its limitation. The nurse should be able to assess the need for hospitalization and need of change in the care plan. No service can be delivered effectively with out a competent communication skill because it a must to assess and triage the client. The telecommunication requires a frequent use of technology. The nurses must be technology friendly and must have an appropriate video/telephone behavior. The consumers of services can be saved only with evidence based information and care, so the nurses must have continuous update. They must possess a skill to deliver competent nursing services through the technology. The Interstate Licensure is must because the services can’t be restricted to one state only.

Problems / Issues related to telenursing

Difficulty in using technology due to lack of instructions, education, lack of help and support can be a big problem both for nurses and clients. We can face failure of technology, threat to safety of patient, and malpractice. To ensure client’s conversation to a registered nurse is big ethical issue. Disrespect in dialogue with female nurses and difficulties faced while talking to male clients is another challenge. Ensuring confidentiality and informed consent is also problematic in telenursing. The invasion of privacy can also be a problem due fitting of cameras at home. We can’t ensure that these services can be accessed by disadvantaged groups.

The way forward

The majority of studies that were reviewed showed that the benefits of telenursing and its use has been established to benefit patient and nursing students in many countries, whereas through out review literature we could hardly find use of telenursing in Indian settings. Here it is only used to assess effectiveness of webinars on learning of nursing students on essential new born care and used by Indian Nursing Council for the Ph.D program. Keeping in view the benefit of telenursing we look forward to establish a telenursing center at National Institute of nursing Education (which is attached to a national
level teaching and training tertiary level care hospital) and we intend to use it for patient and nursing education programs. We also look forward to establish collaboration with international nurses through telenursing so that our nurses can be trained and educated for its use and practice.

Conclusion
The telenursing is cost-effective and time saving innovative technology. It has expanded very fast over last few years and will continue to expand. It will be excellent carrier option for the nurses of 21st century. The nurses need to posses adequate competencies, technology friendly attitude and ways to ensure patient safety so that its safe use can be established world wide. Nurses always need to ensure that they should not go beyond the scope of nursing practice.

References:


42. Nurse telehealth coaching for rural diabetics: innovation in care. Communicating Nursing Research. 2012;45:188-.