PNA | PHILIPPINE JOURNAL OF NURSING

FEATURE ARTICLE

Telenursing: A Viable Nursing Response to the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic has put the delivery of vital health and nursing services uniquely challenged. Restrictions in social mobility, fear of contraction, and risks of transmission posed by this pandemic prompted healthcare institutions to deliver health care services remotely using information and telecommunications technologies, also known as telehealth. Telenursing is one of the components of telehealth. Although there are several strides in the use of nursing-related technologies in the country, telenursing is not a mainstream nursing service. Exploring telenursing and articulating the roles of nurses in this care delivery model is imperative given the current paradigm shift to telehealth and telemedicine in the healthcare system. This article provides a context for telenursing use in the local setting by providing factors affecting its implementation. A literature search was conducted to identify the benefits, challenges, requirements, competencies, activities, and outcomes of telenursing. Despite the limitations posed by this pandemic, telenursing offers a viable, cost-effective, and patient-centered approach in health services delivery. The implications in nursing practice, education, and research are explained.

Keywords: *Telenursing, telehealth, COVID-19, nursing care*

Introduction

In response to the declaration of the pandemic by the World Health Organization in March 2020, health institutions and organizations worldwide restructured their healthcare delivery. Social distancing measures and avoidance of face-to-face interactions prompted health institutions to migrate to the use of digital technologies in healthcare delivery. This healthcare delivery model is known as telehealth. Telehealth is concerned with the provision of health services delivered remotely using information and telecommunications technologies (Vinson et al., 2011). Telenursing is a sub-component of telehealth. It involves professional nurses meeting the health needs of their clientele within their scope of practice using information and communication platforms (College of Registered Nurses of Nova Scotia, 2008). Telenursing and Telehealth have been conceptualized in 1974 when the first remote nursing care was implemented among patients at an airport by Mary Quinn, a nurse from Boston Hospital's telemedicine center (Martich, 2017). From then on, it addresses the limitations on distance, face-to-face interactions, and gaps in access to healthcare delivery. Activities include sending medical records, patient health education, nursing teleconsultations, review of medical test results, and assistance to physicians (Kumar, 2011).

In the Philippines, telenursing is not a mainstream approach. However, the COVID-19 pandemic fast-tracked the migration to remote delivery of nursing services. The legal basis of telenursing is enshrined in the Philippine Nursing Act of 2002, particularly in the phrase "Nursing care includes, but is not limited to, traditional and innovative approaches…" (Senate and the House of Representatives of the Philippines, 2001). Telenursing, though not explicitly stated, covers the innovative approaches in care delivery in the scope of nursing practice. Further, it addresses the relevant call for population-based and individual-based health services including the use of digital technologies in Universal Health Care (Department of Health, 2019). The purpose of this paper is to provide an avenue to discuss the use of telenursing in the local context by presenting the factors to consider in implementing a telenursing program.

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Impetus for Telenursing Use

The rise of COVID-19 infection rates in the country put healthcare service delivery uniquely challenging. The imposition of social distancing, conversion of hospitals to COVID-19 referral centers, and strict community quarantine are limitations that may have long-term consequences on the health and well-being of the population. Currently, there is a conscious effort to develop policies regarding the use of telehealth in the context COVID-19 pandemic. Preference for teleconsultation services is in demand (Atreya et al., 2017). Telehealth addresses the limitations posed by the pandemic as it reduces COVID-19 transmission risk by avoiding personal clinic visits while taking into consideration a patient-centered approach (Crawford, 2020). A strong telehealth system can protect the vulnerable population by keeping them out of hospitals where COVID-19 transmission is highly probable (Levine & Guidry, 2020).

Telenursing has been proven effective and efficient in reducing adverse health outcomes during this pandemic. Some of the adverse health outcomes that may be addressed by this health care delivery model include unintended pregnancies, unsafe abortions, maternal and neonatal deaths (Kumar, 2020), increased need for pain management among cancer patients (Khurana et al., 2020), and nutritional condition, food availability, alcohol consumption, physical activity and social support among patients with heart failure (DeFilippis et al., 2020). It also reduces the fears and reluctance of vulnerable clients to face-to-face clinic visits because of the threat of COVID-19. It fosters active participation of the caregivers at home and convenient as it saves time, financial expenses, and energy.

Benefits and Challenges

The emergence of the COVID-19 pandemic has significantly affected the Philippine healthcare system in terms of human resources, infrastructure, and processes. While its impact continues to burden the country, there is a compelling need to strategize and incorporate various innovations that will help optimize the growing demand for healthcare services. One of the evolving trends in this arena is the utilization of Telenursing which had its roots in Telehealth constructs. The devastating effects of the pandemic in the overall healthcare delivery system coupled with the strategies that aim to stem its transmission have prompted healthcare institutions to utilize technological solutions such as telenursing.

It is in this context that telenursing is seen as a viable option for providing essential healthcare services to reach a wide range of patient populations (Jiménez-Rodríguez et al., 2020). Studies have illustrated the benefits of utilizing Telenursing, especially to the general patient population. One of the advantages of telenursing among the patient population is its capacity to ensure continuity of care and care coordination, particularly on chronically ill patients. In the study of Vinson et al. (2011), they conducted a pilot study intended for endocrinology patients in a hospital-based clinic that made use of a telephone nursing service. Results of their pilot study revealed that patients do have needs even after discharge which include expert advice on how to properly take their medications, self-care practices, how to interpret physician's recommendations, and facilitate referrals to other care settings. Amidst this pandemic, telenursing use may provide health education and promotion activities when most of our outpatient departments are close.

Having this kind of modality enables continuous communication with the patients as they transition to another level of care and ensures continuity of care and cost-efficiency. Similarly, the implementation of a nurse-led telephone follow-up and an automated home-based telephone self-monitoring among patients with heart failure significantly contributed to the reduction of hospital re-admissions and mortality rates (Trimbur, 2016). Telenursing may be our alternative or complementary approach to decrease the unwarranted increase of non-COVID 19 or non-life-threatening conditions in the emergency rooms.

Telenursing has also been beneficial in improving access to care, especially in remote and rural areas where healthcare services are beyond reach. Since most people are hesitant to go to hospitals for consultations and even for medical management, Telenursing can help reduce unwarranted hospitalizations and increasing demand for hospital visits as highly trained nurses can provide initial feedback and advice on symptom management, health maintenance, and adherence to treatment regimen even at the comforts of their own home. The same can also provide support to physicians since nurses can reinforce teaching and patient education that is based on physician recommendations (Yallop et al., 2006). In addition, Telenursing can pave the way to endless opportunities for nursing professionals in the area of Advanced Nursing Practice (Asiri & Househ, 2016).

Moreover, telenursing is a low-cost method which improved nursing care and outcomes in chronic illnesses (Goudarzian et al., 2018; Shahsavari & Bakhshandeh Bavarsad, 2020). The benefits of telenursing include reducing health costs, the time needed for transportation, comfort, decreased hospitalization period and medical unit capacities, and increased services available in remote areas (Orga-dumitriu, 2014). This may be helpful in addressing the unmet health needs of patients with chronic illness at the same time experiencing the economic limitations brought by this pandemic. Considered also as an effective tool in patient education and behavioral intervention (Yang et al., 2019), telenursing promotes motivation and self-management (Kotsani et al., 2018; Saldaña et al., 2018). These factors are vital in compliance with treatment regimens and

maintaining healthy lifestyle practices amidst this pandemic. Participants in telenursing believed that this approach made care more accessible (Bohnenkamp et al., 2004).

In terms of challenges, several have been identified in the use of telenursing services (Martich, 2017). Primarily, its utilization can greatly impact medical practice because people are used to seeking consultations from their physicians in their private practice. The role of nurses may be viewed as a replacement or substitute rather than as a supportive mechanism. Another major barrier is the difference in methods of care delivery. People are used to face-to-face interactions and the performance of techniques that are inherent in traditional nursing care which may affect acceptance and usability. These factors depend on the target users and their capability to navigate through different modalities (Kurtz et al., 2011). Demanding work, cognitive fatigue, and having no opportunity to rest or recover during the work shift of professional nurses are crucial factors in a telenursing service (Bjorkman et al., 2017).

Minimum Requirements and Competencies

The implementation of telenursing entails thorough planning, which includes needs assessment to determine the intended population and healthcare needs. It is also important to establish the minimum requirements, standards, and competencies at the outset. A clearly defined implementation process and workflows are imperative. The process must be succinct, targeted, and easy to follow. Organizational communication and influence are other considerations. There must be process champions who will direct, monitor, and evaluate the implementation process; determine gaps, provide recommendations and be generally accountable for the development of the program. Training and educating nurses on the technical and professional competencies required for initiating, conducting, and maintaining telenursing facilities and programs are also vital requirements (Vinson et al., 2011).

Furthermore, the identification of proper resources or devices to facilitate the delivery mode should be taken into consideration. Most Telehealth services use video conferencing, telephone nursing, clinical applications, remote and home-based monitoring devices, and many others (Jiménez-Rodríguez et al., 2020). Telenursing implementation must be grounded and governed by policies and standards of practice. The policies and guidelines must delineate the scope of services, the job descriptions or responsibilities of both the implementer and adopters of the program, and the national regulatory standards that cover ethical principles, privacy, and confidentiality of data whilst its use in clinical decision-making. The standards of practice on the other hand must be built on the nursing process and the professional behavior expected in this kind of program (Martich, 2017; Vinson et al., 2011).

In terms of competencies required, nurses must be able to adapt the integration of digital communication and technological competencies, and clinical acumen while still ensuring ethico-legal practice (Tan et al., 2020). Some of the competencies highlighted in various telehealth initiatives include communication skills, coaching skills, skills in integrating clinical knowledge with technology, ethical awareness, supportive attitude, and knowledge of pertinent devices and applications that can be used in healthcare delivery (Houwelingen et al., 2016; Jiménez-Rodríguez et al., 2020).

Telenursing requires the use of different available telecommunication and information technologies. In this regard, professional nurses should have the basic to advanced competencies which may include a good communicative strategy (Snooks et al., 2008). This may help professional nurses deliver motivational health promotion or prevention activities or thorough nursing assessments and evaluations. Training and practice should emphasis on data collection using implicit and explicit data to appraise client needs, and transforming them into an understandable language to clients (Greenberg, 2009). An effective documentation of telenursing activities may also help enhance patient care, safety, and outcomes (Williams et al., 2012). At the same time, it provides an avenue for effective monitoring, evaluation, and audits.

Lastly, studies have shown that competency for telenursing use, including competency in the use of technology for patient monitoring, manipulation of equipment, data sets, and software packages, are also recommended as part of the skills training (Sapci & Sapci, 2019). Some of the competencies highlighted in various Telehealth initiatives include communication skills, coaching skills, skills in integrating clinical knowledge with technology, ethical awareness, supportive attitude, and knowledge of pertinent devices and applications that can be used in healthcare delivery (Houwelingen et al., 2016; Jiménez-Rodríguez et al., 2020).

Activities and Measuring Outcomes

Activities or services in telenursing depend on the delivery mode and target patient population. For synchronous activities using audio/visual interactions, known as virtual visits, activities include online vital signs taking as being instructed to the patient, limited physical assessment, functional capacity assessment, verification of medication adherence, and psychosocial support and health education (DeFilippis et al., 2020). Common activities in telenursing include provisions of individualized care, triage, referral, and self-care advice (Snooks et al., 2008), educational or training programs (Jafarzadeh et al., 2019; Sadeghmoghadam et al., 2019), telephone monitoring (Saldaña et al., 2018) or follow up (Cook et al., 2010) and diet consultation (Javanmardifard et al., 2017).

Van Houwelingen and colleagues (2016) identified a range of nursing Telehealth activities such as supporting the patient on the use of technology to access healthcare, strengthening social networks, coaching on health promotion and self-care activities, health monitoring and psychosocial support, interpreting data from automatic self-monitoring devices, coordinating and evaluating the care plan, and double-checking high-risk medication. Given the diverse services that telenursing may provide to clients, there is a need to delineate processes prior to its implementation. These activities may address the inequality and inequity in health delivery services amidst this pandemic.

For outcomes, telenursing can be evaluated in terms of impact assessment (i.e. safety, efficiency, effectiveness, quality of care, satisfaction, clinical outcomes), performance measures (i.e. access, functionality, cost of service), and operational measures (i.e. acceptability, resources, costs) (Tan et al., 2020). Studies have shown that telenursing contributes to high patient satisfaction, treatment compliance, better self-care and cost-savings (Hagan et al., 2000); a reduction of heart-failure-related hospitalizations, and increased frequency with communication with patients (Jerant et al., 2003). Applied to chronic illness, telenursing has been proven to improve self-care management, convenience and cost savings (Vinson et al., 2011), satisfaction, following nurses' advice, adherence to self-care measures, and being self-reliant (Hagan et al., 2000).

Implications

Telenursing proves to be a viable approach in the delivery of nursing and health services delivery amidst the pandemic. It is a cost-effective and patient-centered approach. It addresses the gaps in health services delivery especially to geographically isolated and disadvantaged populations, which led to inequities. In implementing a telenursing program, nursing service administrators should take into consideration the potential benefits and challenges, human resources, training, competencies needed, and infrastructures. Telenursing should be linked to institution-based services such as telemedicine for intra-operability and collaboration between health professionals towards the attainment of Universal Health Care. Likewise, it also opens the discussion on the aspect of reimbursement or financing for nurses implementing telenursing services or programs.

Telenursing programs can also greatly impact nursing education because the required technical and professional competencies must be grounded during the formative years of education towards professional nursing and further enhanced as nurses pursue higher studies and continuing education. Nurses must be thoroughly prepared and trained for their role in telenursing. Training and education will be at the forefront of ensuring that these are met and standards and competencies are in place. As such, it can also support the development of standards of practice specifically for the implementation of telenursing facilities and programs in healthcare institutions. Furthermore, the emergence of telenursing can be utilized as an opportunity to advance the practice of nurses and promote the role of the nurse in partnering with physicians and allied healthcare workers in the provision of healthcare services and education to patients.

In nursing research, telenursing provides opportunities to understand the long term impact of telenursing on health outcomes, health technology assessment, financing, evaluation of different implementation frameworks, collection of data from remote areas, development of telenursing software or applications, and potential participation of local health systems in the implementation of telenursing programs.

Strong collaboration and coordination among health professionals are crucial in implementing sustainable, robust, and effective telenursing. Telenursing programs should foster participation among the family, community, and local health systems. Amidst the challenges in health delivery services in the context of a pandemic, telenursing is a viable approach to innovate nursing care delivery that is responsive and socially relevant.

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Acknowledgment

The authors wish to acknowledge the graduate studies professors of the University of the Philippine Manila, College of Nursing for their support in writing this article. We thank particularly our professors in the course Nursing and Health Program Development, Dr. Araceli O. Balabagno, and Dr. Bethel Buena Villarta for their motivation to contribute, through scholarly works, during this pandemic.

> *The best research you can do is talk to people.*
>
> **- Terry Pratchett,**
> award-winning British science fiction and fantasy author.