CLINICAL ASPECTS

TELEMEDICINE AND TELENURSING – REALITY OR SCIENCE FICTION?

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Abstract: Telemedicine, the method by which medical services are provided at a distance, has become a basic component in many health systems. Among its areas, telenursing experienced an impressive development in recent years due to its major benefits, which include reducing health care costs, saving time for the trip home, patient comfort, reduced days of hospitalization and medical units addressability, increased availability of the medical services in remote or difficult to reach geographical areas.

Keywords: telemedicine, telenursing, benefits

“Watson, come here I want you!” said Alexander Graham Bell on 20 March 1876, when he spilled battery acid on himself, while making the world’s first telephone call. We can say this was also the world’s first telemedical consultation!(1) Telemedicine has come a long way since then.

Telemedicine, a method by which patients can be examined, investigated, monitored and treated by health-care remote providers is slowly becoming an integral part of the health-care delivery systems. Using available hardware and telemedicine software, establishing connectivity through ISDN lines, broadband or VSATs (very small aperture terminals), telemedicine do away geographical barriers and distance. Clinical information can be transmitted by peripheral medical devices. These include stethoscopes, blood pressure monitors and heart rate monitors type ECG, spirometers etc. This clinical data could initially be evaluated electronically by a nurse at a remote place, thus allows time saving required travelling to patients' homes.

Telemedicine customarily uses two methods to transmit images, data and sound - either “live”, real-time transmission where the consulting professional participates in the examination of the patient while diagnostic information is collected and transmitted, or “store and forward” transmission, where the consulting professional reviews data asynchronous with its collection. Many programs employ both transmission capabilities, to maximize efficient use of resources appropriate to the medical services being provided.

Patients with long-term conditions such as chronic pulmonary diseases, diabetes mellitus or cardiovascular diseases represent a major health-care problem for the public health-care systems. A recent study (2) showed that over 27 000 patients died from chronic obstructive pulmonary disease (COPD) in 2004 in the UK and the costs allocated to their treatment amounted to 6.6 billion pounds.(3) The spiralling health-care budgets and the economic downturn we are facing in our days are forcing health-care providers to look for new cost-effective solutions to provide the best possible care. Information technology (IT) and particularly the new ways of delivering care remotely through telecare interventions seem to be a pivotal aspect in this direction. IT can be implemented as web-based applications (4,5), mobile phone and alert systems (6,7) or as telephone and videoconferencing to be used by patients with chronic diseases who are at their homes.(8,9)

Patients with chronic respiratory diseases frequently have exacerbations of their conditions. While some of these events remain unreported doctor (10), others require addressing the emergency services and usually require hospitalization.(11) It has been reported that about one-third of these patients will be seen again or admitted to hospital within subsequent 2 months.(12) A good home control of patients with chronic respiratory diseases would make possible early detection of exacerbations of their condition, which in turn would reduce hospital admissions and slow disease progression.(13)

Realizing the major implications telehealth services can make to economic and population level, the European Commission issued in 2008 a Communication to the European Parliament, the European Economic and Social Committee on telemedicine for the benefit of patients, healthcare systems and society. This act states that telemedicine can facilitate the provision of specialized care in areas burden by the lack of medical expert or in areas where access to healthcare is difficult, and that telemonitoring can improve the quality of life of patients with chronic diseases and reduce the number of days of hospitalization. Also, services such as teleradiology and telesupervision can shorten the waiting list of patients and optimize use of resources, enabling increased productivity. Telemedicine can bring a substantial improvement of the EU economy.(14)

Romania is the first country in Europe if not the world regarding telemedicine system used in emergency medical

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Article received on 15.02.2014 and accepted for publication on 24.07.2014

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home, low addressability patients to health care units,
including decreasing number of nurses, saving time for the trip
replaced by virtual visits.(18) Among many benefits, telenursing
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chronic or debilitating diseases can stay home and be "visit"
patients who are bedridden, located in remote areas and have
distinct applications of telenursing is home care. For example,
over age 70 live alone, but 90% of them want to be independent,
health care in isolated geographic areas. About 72% of people
the number of older patients or chronic diseases, improving
management of telemedicine/telehealth and e-Health programs
involved in the development, planning, implementation and
providers worldwide. Therefore, it is crucial that nurses are
required standards of nursing practice in countries using this
telesystem. Nurses are the single largest group of health-care
role in home health services, they are commonly neglected in
these studies. Using IT to provide nursing services in health care
is known as telenursing, part of the telehealth, along with other
similar areas such as telediagnosis, teleconsultation and
telemonitoring.

The International Council of Nurses (2007) has
defined telenursing as the use of telemedicine technology to
deliver nursing care and conduct nursing practice (16).
Telemedicine in this case is defined as tele – “distance” and
medi – “healing”, definition that includes the use of phone,
internet, sensors, video, remote diagnosis and/or other
interactive technologies that allow information exchange
between patients and health or between nurses and other health
care providers. Telenursing Working Group of the International
Society for Telemedicine and e-Health has endorsed the
necessity for the increased adoption of telehealth/telemedicine
by nurses to ensure collaboration across disciplines (physicians,
thrasher other health professionals) and maintain active contact with
patients. Telenursing would also “export” nursing knowledge and
expertise to patients who need care, according to the
required standards of nursing practice in countries using this
telesystem. Nurses are the single largest group of health-care
providers worldwide. Therefore, it is crucial that nurses are
involved in the development, planning, implementation and
management of telemedicine/telehealth and e-Health programs and
policies at all levels.

Telenursing is rapidly developing in many countries
due to factors such as the need to reduce medical costs, increase
the number of older patients or chronic diseases, improving
health care in isolated geographic areas. About 72% of people
over age 70 live alone, but 90% of them want to be independent,
so they require (tele) monitoring at home. (17). One of the
distinct applications of telenursing is home care. For example,
patients who are bedridden, located in remote areas and have
disabling or debilitating cases can stay home and be "visit” and
regularly assisted by a nurse via videoconferencing, internet
or videophone. It is estimated that 56% of home visits can be
replaced by virtual visits.(18) Among many benefits, telenursing
include decreasing number of nurses, saving time for the trip
home, low addressability patients to health care units, substantial savings in health budgets.

While telemedicine already exist in many countries
in some forms, telenursing is still in his infancy. However, I stress
that telenursing is a reality, not just a futuristic projection, drawn
from science fiction scenario. It was Victor Hugo who once
remarked that there is nothing more powerful than an idea
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