What can be the outcome if Technology is incorporated into the Education Aspect of the Patient and their Families for the Effective Management of their Health Care?

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Abstract

The evolution of patient and family education technology continues to improve patient health outcomes and reduce patient safety related concerns. The health care team is adopting many platforms to better educate their patients.

The intension is that instant access to health information through technology will allow patients to better manage their health issues. Health education technology has come a far way since 1960's. Previously, health care workers were handing out pamphlets and brochures to patients. Now health care professionals have developed videos and presentations to educate their patients and families. Most recently, electronic information through the internet is enabling patients and their families to obtain information about their health and make informed decisions with the assistance of their health care provider.

In the 21st century also health educators, doctors, patients and their families are proving that this venture has promoted cost containment, improved patient outcomes and effective patient care management. The literature examined research related to computer based patient education. Health care data base resources were selected for review of the current literature from Medline, CINAHL and the World Wide Web. The search strategy included exploring the subject heading terms 'technology' and 'patient education'. The findings presented in this paper suggest that the use of technology to improve patients' knowledge and to involve them in health care decisions leads to better health outcomes. Kaiser Permanente Panorama City (Calif.) Hospital is one of the hospitals utilizing these creative techniques. This hospital has seen improvements in readmission rates, patient satisfaction and overall hospital satisfaction. There has been reduction in both cardiac and pneumonia readmission rates by more than six percent in less than two years. Patient satisfaction, reported as those patients who understand their condition, has increased from just over 70 percent in 2008 to 90 percent in 2010. Overall hospital satisfaction increased from approximately 80 percent in 2008 to 90 percent in 2010. The purpose of this article is to explore the evolution of computer technology in health care education and, in particular, to examine the application of technology in the process of knowledge transfer and skill development necessary for self-health promotion and disease self-management. A systematic review of the published literature on the development and use of computer-based patient education is followed by a discussion of the application of research findings to practice.

Keywords

- *Technology*
- *Patient education*
- *Health education*
- *Health information*
- *Doctors*
- *Family*
- *Introduction*

It has been observed that patient education has slowly become a major concern and that hospitals want to get involved in implementing better education for patients and their families. The importance of patient education is an example of critical study and evidence based practice by nurses that has shown that knowledge, on the part of patients and their families, can reduce re-admission rates, decrease healing time, improve mental discomfort, and produce better patient results. Today, patients are educated with the help of technology including modern televisions, I-pads and other sophisticated electronic devices where the patient can watch, learn and explore their illnesses and care. Partnership with team members and families is essential to optimal treatment. The application of individual nursing practice is based on an arrangement of the clinician and the patient. Traditional patient education relied on written material about disease processes, medication, medical management, and self-care instruction guidelines. Today, patients benefit from many forms of education and with all these forms of education nurses can provide patients with knowledge that enables them to understand the disease process and make important decisions about their health. Nursing interventions in proper patient education improves patient self-care, satisfaction, moral support, coping skills and mental stability. Addressing improvement in nursing workflow is essential to the improvement of patient stability and safety. The nurse's ultimate goal through the use of information technology is patient education, while providing high quality care and most importantly patient safety.

Methodology

Health care resources, medline, cinahl and the world wide web were selected to review the current literature. A listing of articles related to the use of computer technology in patient education was obtained from these health care databases. The search strategy included exploding subject heading terms "computer", "technology" "informatics" and the heading "patient education." The results from these searches were combined to identify relevant literature in the areas of patient education and informatics, patient education and computer technology. Common key words identified were "patient education," "health information," "health education," "computer technology," "Family, "Doctor".

Results

Data analysis

Systematic research reports of 32 research found that there are significant changes in the patient knowledge level when they are provided with access to computer base learning programs. Self care behaviours, social support, adherence, confidence, satisfaction and clinical outcomes are improved (Brown University, 2016).

The ethical issue is that if patients and their families are not given enough knowledge they may not be adequately prepared for self care after discharge. Also these systems might be difficult for the patient to use and time consuming. On the other hand without these technologies base systems the patients are educated when it is convenient for the nurse (Brown University, 2016).

The nurse may not have enough time to teach the patient how to use the systems. However this can be achieved when the nurse can make time given the right patient to nurse ratio. The nurse can provide discharge teaching and the materials which are useful to the patient with particular diagnosis, procedures and medications. Therefore during hospitalization the patient and family can discuss self care after discharge (Brown University, 2016).

Many hospitals s are finding it difficult to engage patients in healthcare management and help them in making effective decisions to improve the health and wellness. Regulatory bodies are urging hospitals to use health information technology to improve patient engagement, understanding and compliance. Hospital who adapt this way often see better outcomes, reduce readmissions and enhanced patient and staff satisfaction (Brown University, 2016).

Hospitals are starting creative techniques to meet current expectations for patient centric health care such as on demand digitalized video education technology and interactive patient education

system which allow them to customize patient education and information sharing for a variety of medical needs (Brown University, 2016).

Discussion

The area of health care education and technology brings meaningful advancements in this new century. Patient education and technology comes in a package with well educated health care professionals in this field. In this twenty first century patients are seeking quick access to health information to improve their health and prevent further complications and diseases. With this new trend of empowering patients to better manage their health problems has motivated many health care technology specialists to develop this area for the patients. Patient education technology can be utilized in the form of video and internet platform to improve health care treatment and prevention (Jacobs, 2011).

Patient education began in the 1960's and 1970's. Doctors have been participating in traditional roles and trends to improve patient care in medical homes. Today they are hoping that patient will have instant access to information allowing them to better manage their health problems. During 1980's videos and slide shows presentation was the centre of patient education in hospitals and homes (Jacobs, 2011).

Patients became very involved in managing their own health conditions. They were enquiring for treatment and prevention through this new technology. Videos helped patients to understand their health condition from diagnosis to treatment then to consent for procedures and finally discharged for home. Patients became more involved in promoting their own health and also making informed choices regarding their health status goals (Jacobs, 2011).

During the 1990's the internet helped patients to obtain information away from the traditional patient doctor interaction to the comfort in their own home. Patient education programmes help patients how to use the internet and access the skills they needed to be self regulated and provide elf care in their homes.

During this 21st century patients are moving forward with health education through technology. Patients have access to accounts with their health care provider where they can login in and upload their health information. Patients can access their own data and remain actively involved in their own care. The doctors can now do close monitoring and serve as coach and advisor to the patients. This helps the patients and their doctors to communicate on line with the goal of improving their health condition (Jacobs, 2011).

Patient education is at the core of modern health care and its importance has been demonstrated in many diverse diseases and its treatment for diseases such as asthma, diabetes, hormone replacement therapy etc. Providing quality educational information to patients will give patients empowerment and control over their disease. These will lead to improved health outcomes and decrease health care burden. Patient education has changed significantly during the past 50-60 years from the health care professional telling the patient what to do to empowerment through technology (Jacobs, 2011).

The greatest change in patient education is that it is no longer appropriate to give a patient a leaflet to read and send them away. Technology use has changed the way patients are educated about their health or condition (Jacobs, 2011).

Technology base patient education can be both effective for the patient and free up the doctor's time. This reduced doctor's time was calculated to save hospitals millions of dollars. Not all technology has to be utilized. A simple IPod has been shown to enhance conversation between doctors and patients through quick access to health information and videos.

Interactive technology has proved effective in communicating with patients which improves patient satisfaction with hospital educational materials when interactive technology was utilized. With the expanding use of the internet presently, e learning will also provide a valuable useful resource for patients (PMLive 2016).

Another writer stated that informatics and nurses support for ongoing professional development that implements the work knowledge of nurses can eventually lead to high quality patient care and satisfaction. Many nurses are professionally ant ethically motivated to participate in high quality improvement, new knowledge and innovation through evidence base decision making (Cassano, 2014).

Patient education has slowly become a major concern and many hospitals are implementing better education for their patients and their families. Evidence base practice has shown that patient education by nurses that has shown that knowledge can reduce re admission rates, decrease healing time, improve mental discomfort, and produce better patient results Cassano, 2014).

Today patients are educated using technology which includes televisions, i pads, and other complicated electronic devices, which the patient can watch, learn and explore their illness and care. Traditional patient education can also be utilized. Patient benefit from many types of education which nurses can provide patient with knowledge that enables them to comprehend the disease process and make important decisions about their health. Nursing interventions which is carried out in proper patient education improves patient self care, satisfaction, moral support, coping skills and stability (Cassano, 2014)

Another writer stated that patient specific education was meant to help medical professionals make good decisions about their health and links to appropriate information with wide range of videos, articles, videos and images for the patient. Patient education allows for the patient to better understand their health and informed decisions and lifestyle changes (Health IT, 2014).

Patient education resources can give information specific to the patient's health condition, their point of care, and health care decisions they may have to face. Ensuring that patient have the appropriate education resources can help them remember valuable information, improve their ability to take care of their health, and help them to take part in informed decision making (Health IT, 2014).

Health care providers should provide educational resources during consultation. When information is shared during patient visits, it allow providers to review materials directly with the patient, highlight critical information, action items and ascertain patient understanding. Also on line resources and other learning tools, the providers can demonstrate to the patient how to access and use those tools. Patient information, language, printed materials and other preferences can be ascertained (Health IT, 2014)

When computers and printers are placed in the health care settings, workers as well as patients can easily access printed materials and view on line educational resources during the consultation visits (Health IT, 2014).

Patient education plays an important role in empowering patient and their families. Educating patients about their disease, its treatment, side effects and its management can decrease patient anxiety, improve quality of life, enhance coping, decrease decisional conflicts, encourage patient autonomy with improved patient experience. When patients understand their disease and treatment they develop greater compliance with their treatment which results in better outcomes. All patients have a variety information and educational needs. Information which concerns their diagnosis, treatment and support services is the greatest priority for patients and their families (Cancer care, nd).

Patient education should be an ongoing process and can be provided in a variety of ways to meet the individual needs of the patients. Using individual or group teaching can be supported by various teaching strategies such as printed material computer base educational programmes, interactive multimedia technology, audiovisual programs can be utilized. Regardless of the approach adapted health care workers must incorporate learning throughout patient care (Cancer care, nd).

It is very important for health care workers to recognise barriers to patient learning. Some of these can be anxiety, emotional distress, in ability to read and use computers before initiating teaching. They should ensure that teaching talks place in environments which are promoting learning (Cancer care, nd).

Technology has proven to make patient education material more accessible. There are so many health care facilities which have educational recourses and printed materials for patients with the touch of a button. Internet sources are also available. Patient health information may be provided through a wide range of techniques (Practical nursing, 2016).

Watching a DVD, reading, or even hand on approach can be effective. Teaching patients by utilizing technological methods can be one of the most challenging and rewarding areas of nursing care. Excellent instructions improve patient outcomes significantly. It is one of the most creative parts of nursing (Practical nursing, 2016).

Almost all nurses understand the importance of patient education. Sometimes they are overcome by the lack of time and resources to support it. They are aware that the limited time they spent with patients can restore health to some degree. As the world changes, the methods which are accessible to teach patients and their families expand. Booklets, group classes, information by telephone, telephone hotlines and help lines, videos, podcasts, websites, text messaging, webinars, chronic disease management programs and social networking are all available (Practical nursing, 2016).

Conclusion

Innovation can always help to advance a field, however while cutting edge methods can provide a fantastic resource, in this case, it is very likely the future of patient education will feature even more extensive use of apps, in particular these will focus on helping patients manage complex 'lifestyle diseases' such as type 2 diabetes. While there is concern that the field of medical apps is somewhat unregulated. There can be no doubt that apps provide a fantastic opportunity to provide information, conveniently to patients. With the expanding use of the internet, e-learning will also provide an increasingly useful resource for patients. While cutting edge innovation is more likely to be driven by the private sector, the pharmaceutical industry often competes in a very crowded market; as such they are always seeking a new way to stand out from their competitors. Use of technology and innovation should seek to drive enhanced patient experience and improve outcomes both on an individual and an economic level (PMLive, 2016).

Tables and figures

Kaiser Permanente Panorama City (Calif.) Hospital case study outcomes
Cardiac and Pneumonia Readmission

Year	Year
2008	2010
10 cases	6 cases (over 6%)

Patient Satisfaction

Year	Year
2008	2010
70%	90%

Hospital Satisfaction

Year	Year
2008	2010
80%	90%

Studies have shown that Kaiser Permanente Panorama City (Calif.) Hospital is one of the hospitals utilizing these creative techniques. This hospital has seen improvements in readmission rates, patient satisfaction and overall hospital satisfaction. There has been reduction in both cardiac and pneumonia readmission rates by more than six percent in less than two years. Patient satisfaction, reported as those patients who understand their condition, has increased from just over 70 percent in 2008 to 90 percent in 2010.

Overall hospital satisfaction increased from approximately 80 percent in 2008 to 90 percent in 2010 (Roney, 2012).

KPPC outcomes KPPC has used the TIGR AP (interactive patient education solution) system as an effective engagement tool to provide patients and families timely prevention and treatment information. When patients better understand their conditions and recovery steps, it is less likely they will be readmitted to the hospital. According to the KPPC case study, the hospital has seen improvements in readmission rates, patient satisfaction and overall hospital satisfaction. Hospital officials need to be thinking creatively to harness health information technology in order to reduce readmissions and increase patient engagement, especially with upcoming CMS readmission fines and stage 2 of meaningful use. The ability of interactive patient education systems to marry information technology and patient education makes them a valuable tool for hospitals (Roney, 2012)

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