

## Chapter 23

# The Potential of Mobile Health in Nursing: The Use of Mobile Communication Technology in Plasma-Supported Outpatient Wound Care in Germany

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### ABSTRACT

*Mobile information and communication technologies are increasingly used in nursing. In a new plasma-supported treatment for patients with chronic wounds in outpatient nursing settings, the LiveCity camera can be used as an innovative mobile communication technology. It enables rapid and high quality exchange of information between remotely located doctors and nursing staff. This procedure promises to deliver positive outcomes regarding the quality of the treatment and patient safety while avoiding additional hospitalisation and saving time and costs. This is achieved by rapidly confirming diagnoses and agreeing on a joint treatment appropriate for the current wound status. Thus, complications in wound healing can be promptly identified and countermeasures initiated through quick and easy access to medical and nursing expertise.*

DOI: 10.4018/978-1-5225-5490-5.ch023

## **INTRODUCTION**

The use of digital and electronic technologies in medicine is referred to as e-health. E-health services include telemedicine and mobile health (m-health), both of which are becoming increasingly popular among health experts. Telemedicine enables medical information to be exchanged between two sites using electronic information and communication technology. It is used for prevention, diagnostics, treatment and ongoing care with the aim of improving the health status of patients as well as the quality of treatment including its efficiency (Andelfinger, 2016; Omboni, Caserini & Coronetti, 2016; Marx & Deisz, 2015; Central Association of Health Insurance Funds, 2013). As a rule, telemedicine is restricted to stationary devices, unlike m-health (Metelmann & Metelmann, 2016). The term m-health is therefore used if communication between doctors and patients takes place using mobile telecommunication devices or multimedia technologies (Omboni, Caserini, & Coronetti, 2016).

In 2009 WHO collected data on the implementation of e-health initiatives in its member states. The data indicate that m-health was or is becoming established in a range of programs around the world. In particular, projects such as health call centres and toll-free emergency services have been set up. In European countries m-health initiatives are also being established with about 60% of all European countries introducing toll-free emergency numbers, about 30% launching mobile treatment services and about 5% introducing decision support systems (WHO, 2009).

Particularly in the German healthcare system, mobile information devices and telemedicine are becoming more and more important to overcome the challenges created by the demographic change and its consequences (including the increasing age of the population and the associated multimorbidity and increased need for nursing care) (Breitschwerdt, Reinke, Kleine Sextro, & Thomas, 2016). Telemedicine and mobile information and communication technology (m-health) is also increasingly used in the area of nursing care in Germany.

## **BACKGROUND**

To determine the extent to which telemedicine and mobile information and communication technologies (m-health) have become established in nursing care (particularly in wound care), the (predominantly German) literature was first analysed. This included a review of relevant projects on the internet. The German Telemedicine Portal, which was established as an initiative of the German Federal Ministry of Health to enable a nation-wide search for information about previous and ongoing telemedicine projects, was included as an essential source of telemedicine and m-health based projects. It provided information aimed at users about more than 200 different telemedicine projects (Deutsches Telemedizinportal, 2016; German Federal Ministry of Health, 2016a).

There are telemedicine projects that use assistive technologies to expand the care and support options for the home setting while also measuring and visualising the quality of care achieved.<sup>1</sup> In other projects, GPS technology is used that enables people with dementia to be located at all times, helping the patients themselves, their relatives and nursing staff to manage daily life.<sup>2</sup> Several other telemedicine projects in the area of nursing care were carried out in Germany between 2008 and 2013:

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