Competences in Social Media Use in the Area of Health and Healthcare

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Abstract. In today's life, social media offer new working ways. People are increasingly expanding interactions from face-to-face meetings to online ways of communication, networking, searching, creating and sharing information, and furthermore taking care of patients/citizens via tweeting care, Facebook care, blogging care, vlogging care, infotainment care, gamification-care, infographic care, for instance. This chapter discusses the utilisation of social media in the healthcare domain including nursing education, practice and research. When in the current healthcare era, social media is used effectively and purposefully, it can give all of us a greater choice in how we live, how we take care of our health and how we learn and build both our professional competences and produce evidence-based, qualified data. Nurses need continuous education and proper tools to take the most of the benefits of social media, not forgetting privacy and ethical issues. This use of social media in professional nursing generates the need for new competences.

Keywords. Social media, health care, nurse education, practice, research

1. Introduction

We read news on the web, order tickets or shop and use different kind of services online. We can also make a doctor's appointment online, change dentist's appointment time and so on. Social media has become a part of our everyday life. Social media means participation, sharing same interests, interactive networking, working together, meeting people, and personalized connectivity between persons, groups and communities.

Social media offers opportunities to organize health care education all around the world for example in developing countries [1]. In addition, it provides a means for socialization [2]. The term Web 2.0 includes all the Internet media that are easily accessible, modifiable and in addition, can be easily published by an online community [1]. Existing Web 2.0 tools as for example Twitter, Facebook, YouTube, blogging, vlogging and WhatsApp are free and usable for example by mobile devices wherever you are - if you have an internet connection [2].

The use of open online solutions costs nothing for e.g. learning organizations meanwhile using a closed learning environment does. However, mixing different methods might be the most useful way to learn. Web 2.0 has been used in different ways in health education. Web 2.0 technologies incorporate as Cormode and

Krishnamurthy (2008) present "strong social component while encouraging user-generated content in the form of text, video, and photo postings along with comments, tags, and ratings" [3]. It fosters to take, share and to be in contact with other students but it also offers a platform for participation [2]. Using networks and social media diversifies student counselling and enhances the availability of support. Social media offers a chance both for the teacher and the tutor nurse to be present online. Furthermore, social media tools enable counselling and tutoring while student is in clinical practice, or abroad. The collaboration takes place smoothly when all users find suitable and user-friendly tools [4]. Counselling can be asynchronous e.g. emailing, electronic learning environment, Facebook, blogging, wikis, which are happening in different times or it can be synchronous counselling e.g. videoconferencing, instant messaging, chatting online at the same time [5, 6]. In web, counselling it is typical that the communication varies between asynchronous and synchronous [5]. In addition, we are discussing the concept Health Social Networks (HSNs) which are online health interest communities like PatientsLikeMe, ZocDoc or DrEd, where persons find and discuss information about conditions, symptoms, and treatments, give and get support, enter and monitor data, and join health studies [7]. The HSNs may be consumer/patient-focused or health care professional-focused.

The amount of scientific information focusing on health issues increases very fast and in addition, care provided has to be based on evidence-based knowledge. Therefore, it is important that healthcare staff and students have competences for example to find suitable information and in addition, to handle it by analyzing, sharing, discussing and creating new information with peers [2]. During two decades Health On the Net (HON) has a core mission, which is to promote transparent and reliable health information online. HON has developed both ethical standards, HON codes, in order to enhance qualified health information and tools to meet Internet users' needs [8].

2. Education with social media

Below are presented some common social media solutions in health care education. Twitter is a common and popular microblogging site that allows users to disseminate information in 140 characters of text or less. In nursing education, Twitter is used in classroom and embedded in nursing curricula and supports faculty-student engagement, enhances social support, reinforces course content, and advances critical thinking and reasoning skills, and increases a sense of connectedness among students and new graduates [9]. A study showed that during health care learning situations the students share their feelings and experiences openly and Twitter reveals ''behind the scenes'' conversations of the students which would have not been otherwise captured. This strengthens the learning process. For the nurse educators and tutors in clinical practice Twitter widens understanding the student role in learning classrooms or in clinical practice [10]. To obtain maximum benefit and most effective results, educators should have a theoretically driven pedagogical basis for incorporating Twitter [11].

Facebook (FB) was created in 2004 by a university student called Mark Zuckerberg with his group of other students for the college students [12]. Today FB [12] is a widely spread, global social networking environment in which people can create their personal virtual environment called profile. Via FB a user can exchange messages, post status updates and photos, share videos, use various applications and receive notifications when others update their postings. FB is well-known as a

connector between people [13]. However, using FB in education for example as sharing information has not only advantages but also disadvantages, as problematic FB use is associated with a lower human well-being like subjective feeling of unhappiness, low vitality and low life satisfaction [14]. Therefore, both health professionals, educators and school counselors should develop interventions that focused on increasing well-being to decrease excessive use of FB. Additionally, social media literacy education may be a compulsory e.g. course for college students to increase their awareness of how overuse of FB or even FB-addiction may influence their wellbeing.

Learning should be fun. Infotainment is form of media how to combine educational or useful information and entertaining content. In healthcare simply content delivered via infotainment is designed to be informative yet entertaining enough to commit in learning, and in follow-up maintain the student's interest. This increases student satisfaction, too. Infotainment utilizes versatile techniques and a few of the features students can access on these all-in-one devices are e.g. Internet, video games, animations. There is a huge potential to combine health information with entertainment tools [15, 16].

There are social media platforms specifically designed to share e.g. ideas and research findings between researchers across the globe such as Google Scholar [17] and ResearchGate [18]. Google Scholar is a freely accessible Internet search engine, which helps to find e.g. scientific articles, theses, books and abstracts across many disciplines and versatile sources [17]. ResearchGate is more personalized and a person make his/her own research archive [18]. Furthermore via both services researchers can promote their profiles, view their citations, and network with others in the field by actively engaging in these type of social media.

LinkedIn is considered as business oriented social networking site, which connects registered members. They have personal profile page, which emphasizes skills, employment history and education. Furthermore the members build and document networks of people they know and trust professionally [19].

Visualized information sharing utilizing well-planned texts and clear graphics is called infographic [20].

Gamification is growing way of building services. It utilizes game mechanics and experience design to digitally engage and motivate people to achieve their personal goal. End users interact with computers, smartphones, wearable monitors or other digital devices [21]. Gamification serves students a possibility to approach knowledge and skills using the learn-by-failure technique without the embarrassment factor that often is a part of traditional classroom education. When implemented properly, gamification can be very powerful way to educate [22]. However, in assessing knowledge gamification is not as good as the traditional e-learning approach [23].

YouTube is a service that shares originally-created videos for multiple purposes, and provides a forum for people to connect, inform, and inspire people across the globe [24]. Also YouTube is used in numerous ways e.g. many-sided learning in all fields of education and understanding of complex issues, amusement and ways one can ever imagine [25].

A blog is a personal way of expressing your thoughts, observations, opinions and passions. It is also called a diary or journal on the Internet, for example. A blog user is called the blogger who adds text, photos, videos and links to interesting other websites. Originally, the blog term comes from the expression weblog [26]. A similar approach is currently taken with video on the web, called vlogging. Vlog is shortened from the

video blog and it simply means using video distribution over the Internet. The vlog often combines embedded video (or a video link) with supporting text and images depending on what the vlog created wants to utilize. Well-known vlogging tool YouTube has created a platform for vbloggers to present their personal videos, which oftentimes are filmed using hand held point and shoot cameras.

2.1. Case Savonia and student blogging

In our organization, Savonia University of Applied Sciences (Savonia), social media has been taken into our learning, teaching and student-counselling, for instance. We have chosen several digital teacher's tools in which teachers can choose and are trained: Facebook, WordPress, Twitter, Padlet, ScreenCast. We have discussed about where and in which way both teachers, bachelor or master level students and other staff members can utilize different platforms and applications. The organization has its own social media policy and guidelines for using social media. Social media provides educators with an opportunity to engage students both in the online classroom, home or in clinical practice, and at the same time to support development of learning skills and competencies.

In Savonia every student creates her/his personal learning environment (PLE). The idea with PLEs is to put students in a more central position in the learning process by allowing them to design their own learning environments and by emphasizing the self-regulated nature of the learning. The nurse students (bachelor) learn the basis of blogging during the first learning period. The blog is created and maintained by each student who invites teacher, clinical nurse tutor, and if needed, other students to join her/his blog. Furthermore, the nurse students utilize the blog during international exchange period and during their clinical practice, also the WhatsApp is used in collaboration and communication with our students abroad. Via student blogs the teacher can see show how the student's competences have developed during their studies.

The case study in Savonia was realized due to the need to have first-hand information how our student blogs function in practice. On January 2016 the nurse teachers were invited to email experiences of student's blog usage and how the blog reveals nurses' competence development. Totally six nursing teachers wrote about their experiences. The data was formed of these experiences, and is analyzed by qualitative content analysis.

Preliminary results show that blogging mirrors the daily learning and increases the understanding of individual learning process, e.g. in nursing practice blogs reveal how the student develops from a task-focus beginner to an advanced holistic nurse student. Via blogging the student expresses development needs from the clinical practice setting. During the first week of creating their own blog students are confused of his/her role. He/she needs instructions and tutoring in order to learn reflecting how his/her learning objectives are developing. Gradually students learn to write, add links, photos and/or videos, and the students describe how they meet objectives during their clinical practice. The teacher and the tutor nurse evaluate using the student's blog environment. Along the time only a few tutor nurse have refused to use blog environment. In addition to, blogs show that the student writing improves the more they do it.

Furthermore, the communication and networking skills developed the more students used blogs and simultaneously the teacher and/or the nurse tutors commented

on the blogs. The teachers expressed that blogging fits most of the students. However, some students are better in verbal reflection. Teachers suggest that there should be guidelines related to blog use, such how often the teacher or the other staff comment and/or evaluate the student blog. The teachers need to be notified when the students have added materials in their blogs. Also students need instructions how to create a blog in which learning objectives, realization and evaluation is scheduled. The advantage of the student blog is that both the learning process and the history are stored in one place. So along the nursing studies different teachers can see the development of each nurse student, not starting from 'empty table'. A blog is a personal product. And you can see student's competences in its breadth, depth, quality and it is in constant development. Utilizing the social media demands both ICT skills and awareness of one's own learning methods. The student needs to have reflection skills: how to reflect own learning by answering a question 'what have I learnt' instead of listing daily working tasks. The teacher's role is that of a facilitator.

Social media are often associated with breach of privacy of individuals and hence measures for data security are part of a schools or health care provider's social media policy. Paragraph 5 will discuss this in more detail.

3. Practice

Via social media tools vast amounts of data are being accumulated and processed to develop understanding of patients'/citizens activities, to encourage their health activities, to support their health decisions and to follow their motivation for healthy choices, and adding connectivity among social media users. There is a growing number of solutions available to be utilized in health care, such as analysis of virtual tools that are useful e.g. in distance communication, in consultation and counselling, in data gathering and in utilization of data for various purposes, such as sharing feelings, being open about health issues related to individual's daily living and asking questions [27]. Many hospitals use social media platforms such as Facebook, Twitter, or YouTube, and hospitals offer web-based broadcasting of health information, health related measurements e.g. body mass index or life style evaluations, and public information like guidelines or how to act in hospital surroundings [28].

3.1. Tweeting in health care

Tweeting care is using instant messaging. Twitter as an intervention delivery method is proved to be rapid and an effective means of information delivery to wide population [9], and to ask questions to be quickly responded [29]. Twitter is used for public health research [30]. There are findings that Twitter supports public health behavior and fits for sharing reliable information about unhealthy and healthy habits e.g. e-cigarettes and smoking cessation online [31]. Furthermore, there are e.g. Twitter communities in which healthcare staff and patients can share their interest in clinical research. Twitter enhances rapid connection between individuals globally, and people collaborate, share problems and find solutions. Both staff and patients share the same interest and enhance knowledge in order to improve patient care [32].

3.2 Facebooking in health care

FB is used in health purposes e.g. asking questions from health professionals, discussing with groups around different health problems e.g. mental health issues, encouraging groups for different purposes e.g. young mothers for the breast-feeding [33]. In addition, FB is used to stimulate a young cancer patient's physical activities [34], enhancing communication and collaboration between professionals and furthermore collaboration between professionals and patients/clients e.g. net clinic environment [33,35]. The flexible 'team' communication between professional and patients is effective because the patient and family experience also tends to improve with a high-functioning primary care [36].

3.3 Gamification in health care

Gamification is growing as a part of patient/client care. Gamification applies game mechanics and game design techniques to engage and motivate people to achieve their health or other wellbeing related goals. Creativity and fun support is enhancing people's health and wellbeing throughout life [37]. The health game can be used in numerous purposes e.g., child growth follow up, physical activity, dietary change, stress reduction and 'stroke rehabilitation' [38].

3.4 Infographic in health care

Infographic is utilized in health care related to literacy-sensitive information e.g. developing community health and address community needs, and aiming at better health and wellbeing for citizens [39].

3.5 Blogging in health care

The results of a three-year study related to health blogging [40] shows that the support from one's family and friends was related to improvements in the bloggers' health self-efficacy as well as reducing the bloggers' loneliness, particularly among those who also experienced increased support availability from blog readers. Furthermore, the bloggers' health-related uncertainty decreased. In health care blogger-patients participate more in their care path. Bloggers use many techniques like videos.

Using social media does not only have advantages, but also can spread negative news, or influence patients negatively. Witteman et al performed an experimental study in which they created a composite mock news article about home birth from six real news articles [41]. Witteman et al randomly assigned participants in an online study to view comments posted about the original six articles [41]. They found that exposure to one-sided social media comments with one-sided opinions influenced participants' opinions of the health topic regardless of their reported level of previous knowledge, especially when comments contained personal stories [41].

4. Research

Social media presents new opportunities for nurse researchers from exploration of research ideas to disseminations of research findings. In this section we describe how social media can be used at all stages of nursing research: from having ideas, finding information, collaborating, conducting the research, organizing and managing, disseminating, and evaluating. Here, social media includes not only social networking sites such as Facebook and Twitter, but also more narrow social forums such as Google Scholar and LinkedIn, and sites which store large amounts of socially generated data such as Google.

Nurse scientist are increasingly engaged in social media platforms, because it support discovery of new ideas, help to keep them up to date, allows easy following of the work of others and support publication [42].

Social media can be used as a method of study recruitment, especially snow ball recruitment. Snow ball recruitment, passing a research participant request from one person to another through a social media network can promote rapid dissemination of the request to the next level contacts. O'Connor et al were able to demonstrate Twitter as a low-cost method of recruitment for their online survey with 100 mothers of advanced maternal age [43].

User generated data on social media can be used for nursing researches. For example, social media can provide insights on consumers' information seeking behavior [44] or health behavior [45]. Social media can also provide indications of public opinion of specific topic, or reaction to specific event. Greaves et al used free-text comments posted on the Internet in blogs, social networks, and on physician rating websites to learn patient experience of their care using sentiment analysis [46].

Social media can be used as a dissemination strategy to get more citations and views of scholarly articles. For example, Nursing Research opened Facebook and Twitter accounts in 2010. Posts and tweets announce the current contents of the Journal. Nursing Research authors are showcased. Nursing Research sites serve as a hub for accessing research resources for nursing scientists. Information about critical and current health events from authoritative sources are shared and retweeted. Nursing Research combined social media with its traditional scholarly publication activities to support disseminating the best in nursing research to nursing scientist, scientist in related fields, nurses, health decision makers, policy makers, and people across the world [47].

It is important for nurse researchers to explore the potential and possibilities of social media for their researches in the future. With ready access to a vast range of people and data, social media offers much potential for conducting nursing research. However, social media research is in its early stages considering the research ethics, and many technical and methodological challenges in free data collection and analysis, and legal and ethical concerns inherent in using socially generated data remain.

Regarding technical challenges with researches using user generated unstructured social media, use of natural language processing (NLP) and ontology is important. NLP techniques have been used to structure narrative information from social media. NLP techniques have the capability to capture unstructured social media data, analyze its grammatical structure, determine the meaning of the information and translate the information so that it can be easily understood by the researchers [48]. In addition to NLP, unstructured content and data must be unified with structured data sources by a common ontological layer that allows users to understand and visualize important

correlations between multiple data types and healthcare specific terms [49]. An ontology formally represents knowledge as a hierarchy of concepts within a domain, using a shared vocabulary to denote the types, properties and interrelationships of those concepts. Jung and Park used ontology to analyzed social media data on adolescents' depression [50]. For more knowledge on ontologies, please refer to section C chapter 1.

As more researchers use social media, protection of human subjects on social media needs to be developed. An important body is an institutional review board (IRB) which usually is a group of people that monitors research designed to obtain information from or about human subjects and how ethical issues are taken into consideration in research and development work, for instance [51]. However, IRB considerations relating to research using social media has not been very well-developed. Morenno, Goniu, Moreno, and Diekema reviewed the common risks inherent in social media research and made specific recommendations for researchers and IRBs for observational research, interactive research and survey/interview research. It is important for nurse researchers to check the latest requirements of the IRB when planning research using social media [52].

5. Safety, security, privacy, and ethics in the use of social media in healthcare

Healthcare professionals cannot be general users of social media. This means if you share information concerning health issue as a professional, you should use another account in your social media tool than the one you are using for your personal needs. In health related domain separate private and professional. The only way is to have separate accounts. Remember that what is published on social media tools is most of the time public domain and out of your control. Each of the tools like LinkedIn Facebook has private sectors where you can exchange information only to your target persons. Take into consideration that what you are exchanging in private sector may be reused by the receiver in public domain and all precautions taken are lost. To avoid trouble rules has to be defined between healthcare professionals and the receiver about what to do with information shared in the private sector through social media tools. The risk of misusing the ethical, privacy, safety or security rules is big. Part of this situation is bent with the country laws about these domains [53]. The main problem with the use of social media is the public aspect of the system as mentioned before. The adoption of the same code of conduct in place for patients and the institution is necessary. Recommendations are given in some countries for the use of social media. Never use personal tools for professional purposes. This must be separate. In the use of social media for healthcare only what is general, not related to patients, colleagues or institutions could be public domain [53, 54]. All the rest must be in the private domain and if it concerns a patient the rules must be clear and having the acceptance of the patient. The patient must be aware not to forward elements posted in the private section because as soon it is posted in public domain, it will be seen and may be misused.

Before publishing on social media tools a check is to be done about the subject and the confidentiality. Check if elements about a patient, or a colleague can be known? Can the message harm patients, colleagues or institutions? Is the reputation of the profession safeguarded? All material that could be published is concerned including photos, findings results, gene sequences i.e. The sender of social media information is

responsible for safety, security and privacy [53,54,55,56,57]. Detailed information is available on Ventola's publication [57].

6. Conclusion

For the effective use of social media there are requirements. Firstly, the social media should be embedded carefully into care, education (including teaching and learning) process or other used processes. Secondly, there must clear instructions how and when one uses social media for versatile purposes. The user should have both information and communication (ICT) technical skills combined training with proper ICT-tools and health literacy skills. Thirdly, users of social media should recognize their responsibility to the other users and follow good ethical and privacy issues. Many online service providers use Netiquettes that covers both common courtesy online and rules of the Information highway. The risks related to social media are misuse, intimacy and privacy issues, data security issues especially in health care field. In personal level social media addiction should be taken into account. Depending on who creates the FB group, be that a public organization or a private person, there should be an understanding of the governance process, etiquette what this FB environment has and what the users should accept. The people should be instructed if the message or picture posted by a FB-user is considered offensive or inappropriate in any way, and any FB team member can delete it instantly they see it. Furthermore, the FB user's access can be denied. Due to rapid development of technical solutions, the use of social media requires constant education and training. In the future it is crucial to hear end-user voice and to ask what kind of social media tools and services are really wanted.

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