

E-Health Counsellor (EHC), a Smartphone Application to Fight Cervical Cancer

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Abstract: Cervical cancer is one of the most deadly diseases for women. Based on data from the Health Ministry, cervical cancer is the highest disease among developing countries and the fifth in the world. In Indonesia, cervical cancer is the second of the ten most prevalent cancers. One of the causes of the high incidence of such cancer is the lack of knowledge about it. This writing aims to show how knowledge can be so important to increase degree of health and EHC is such a media can be used to access knowledge simply in digital era. This research focuses on literature review. EHC is a mobile phone application that focuses on cervical cancer disease and is available for all society, especially for women. EHC includes the definition and means of prevention of cervical cancer and is also integrated to health workers and health facilities to facilitate the public in enhancing their own health. EHC provides private counsellors who connect members of the public with an expert and the goal is that people know more about cervical cancer and how it can be eliminated. So, result is may EHC can facilitate society to prevent cervical cancer by increasing knowledge and having private councillor.

1 INTRODUCTION

The World Health Organization (WHO) has stated that cervical cancer is one of the most deadly in the world and one which occurs mostly in developing countries. However, this disease is preventable. However, being preventable does not mean it is easy to handle. There are many factors that cause cervical cancer and lead to many casualties. There are several risk factors that can lead to cervical cancer, including unsafe sex, frequent couples and having multiple sex partners (Bosch et al., 2002). In addition to those risk factors, according to the theory proposed by L.W. Green, there are three factors that affect health, predisposing factors, enabling factors and reinforcing factors. Of these three factors, predisposing factors play a very big role, especially in terms of knowledge. Several studies have proven how knowledge plays an important role in the occurrence of a disease.

Research conducted in Ghana found that there are significant differences between women who have a higher level of knowledge than other women in the incidence of cervical cancer (Opoku, 2016). It proves that knowledge can be a tool to prevent

cervical cancer. Moreover, a study conducted by the National Health Interview Survey showed that that women with high knowledge tend to be healthier (Mamon, 1990).

In Indonesia, as a developing country with 257,912,349 people, cervical cancer is one of the most dreaded things, especially for women. According to the Ministry of Health, in 2013, the percentage of cervical cancer reached 0.8% and was the highest compared to other cancers. Riau Islands Province, North Maluku Province and D.I Yogyakarta Province have the highest prevalence of cervical cancer that is 1.5%. By 2014, more than 92,000 Indonesian women die from cancer with 10.3% of them due to cervical cancer. One factor of the high numbers is due to the absence of early monitoring process (CNN Indonesia, 2017).

Clearly this is problematic for the country. An integrated effort from all stakeholders is required to reduce the incidence of cervical cancer. Moral and financial support from the government is urgently needed, and a thorough improvement of knowledge should be strengthened to create community awareness. The literature review aims to document the importance of knowledge in the fight against

cervical cancer as well as the next step that may be applied. It addresses how such knowledge becomes easily accessible to all levels of society in all corners of Indonesia.

2 METHODS

This is qualitative research and all data obtained by secondary data. The literature includes journals, proceedings, theory and previous research available on the Internet. The first thing to do is to identify the keywords in the literature that may be in line with this research of cervical cancer, technology, mobile phones and applications. The publishing year is also a consideration in the selection of sources or references to obtain the latest data. The several websites used include WHO and NCBI websites.

After collecting the references, researcher then read the entire article in order to gain a point of view. The final step was to review the references that had been downloaded. Therefore, the structure of writing in the sub-section results is divided into two parts, the importance of knowledge and technology which is specific to mobile phones.

3 RESULT

3.1 The Importance of Knowledge

Knowledge is the right thing and can be justified. Knowledge is specific, relational and dynamic. There are two types of knowledge, tacit knowledge and explicit knowledge. Tacit knowledge is subjective and experiential and cannot be expressed in sentences such as crafts, beliefs, images and mental models. Whereas explicit knowledge is objective and rational and can be expressed with sentences, formulae and numbers, as in mathematical models such as databases and theoretical approach (Nonaka, 2006). Knowledge is an important aspect of health. Many models and theories are developed to transfer knowledge to be easily understood by the wider community (Kontos and Poland, 2009).

In health, there are many statements concerning the importance of knowledge in obtaining high degrees. One of the most famous theories is by Lawrence Green, who mentions that there are three factors that affect health, predisposing factors, enabling factors and reinforcing factors. Below is the model of theory described.

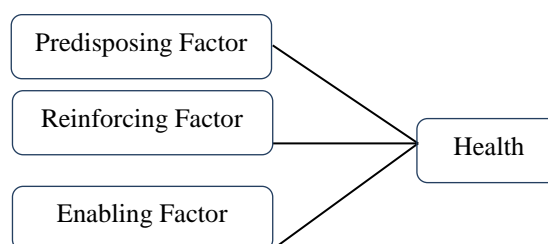


Figure 1: Model of Lawrence Green Theory

The existence of knowledge enlightens the community. Some of the benefits of knowledge in the health sciences can be a driving force to take positive steps in preventing disease, have a better understanding of the existence of system alteration and how to use them effectively and efficiently; good knowledge allows everyone to learn and make efforts to handle disease independently. In addition, the knowledge that may be provided through health education can also provide an understanding of the beliefs and traditions of society, both harmful and beneficial to health (Notoatmodjo, 2007).

3.2 Technology

The Department of Health states that health promotion has an understanding as an effort to empower the community to maintain, improve and protect the health of themselves and their environment through learning from, by, for and with the community, to help themselves and develop community-based activities in accordance with local culture and supported by sound public policy.

Based on its function as a distributor of health messages, the media is divided into three, as follows: print media, electronics and boards (Notoatmodjo, 2012). 1) Print media as a tool to convey health messages varies widely, such as magazines, rubrics and so on. 2) Electronic media as a target to deliver messages or health information is of different types, such as television, radio and mobile phones. 3) Media boards (Billboard) posted in public places can be filled with messages or health information. Media boards here also include messages written on zinc sheets attached to public vehicles (buses and taxis).

Today, the world is developing and technology is becoming inseparable. However, a thing to keep in mind is that the existence of technology was created with the aim to facilitate humans in meeting their life needs. Technology is changing and technology will definitely change the pattern of a person's activity. For example, television presence; there will be a new agenda of viewing every day as well as the

arrangement of the location of the home furnishings that are adjusted to the television placement. Technology is progressing, and now anyone can access technology, almost all people have mobile phones and some individuals have more than one. Nobody will miss information when technology is in their grip. Technology makes it easy; technology means it is not difficult for people to contact other people who are in distant places. Technology produces productivity; large companies use technology for efficiency reasons and productivity improvements rather than having to hire more money-consuming people. Technology promises speed' a variety of jobs can be completed quickly by utilising the technology optimally, such as the existence of a computer can facilitate a person in doing bookkeeping. Technology is showing popularity; today, many people are famous by uploading their performance on YouTube sites such as Canadian singer Justin Bieber (Martono, 2012).

The modern era is happening and synonymous with the digital community. Every human activity will be driven through a series of digital technologies and everyone has their respective numbers, such as ATM numbers and telephones, currently all digital.

4 DISCUSSION

Knowledge of cervical cancer becomes a very important thing to have, not only in the basics but in the details, not only about the definition of cervical cancer, but more about how steps can be taken to prevent it. As we now identify with technology and the digital community, so we need an information tool that can be accessed anytime and anywhere by anyone. Research conducted by Nasihah shows that there is a relationship between knowledge on early detection of cervical cancer disease (Nasihah et al, 2013). Furthermore, through research conducted by Mirayhasi, it stated that there is a meaningful relationship between knowledge of the participation of cervical cancer examination (Mirayashi et al, 2014).

Prevention and early detection of cervical cancer should be done to reduce mortality and morbidity caused by the disease. To do that, one of the things that can be done by continuously improving the knowledge of the community because however knowledge is very influential on the behavior of early detection of cervical cancer (Syahputra et al, 2016). By taking advantage of technological developments, there are things that can be done to improve the knowledge of the public that is to say

that the prevention of cervical cancer has a great distance with the community just in hand.

E-Health Counsellor (EHC) is a service provided to a community-based Smartphone application. EHC facilitates the public to access information related to cervical cancer, not just limited to the definition of cervical cancer, but includes preventive measures and online counselling services that connect people with health workers.

EHC is designed simply to be easy to understand. Content in the EHC includes: accounts that contain the user's personal data, settings that include language settings, notifications and so on, descriptions of cervical cancer complete with video, preventive measures, treatment steps and online counselling services. Preventive measures will detail what can be done to prevent the occurrence of cervical cancer, such as the use of condoms and injecting HPV along with a price so that people can be prepared. Similarly with the treatment step, explaining about the treatment that can be done along with a list of hospitals as well as the price of each treatment. Online counselling services allow people to choose their own health personnel who want to be a counsellor for the sake of comfort. This service is not limited by time and place.

EHC is expected to reach the entire community and make access to information easier. In order to access the EHC, everyone first sets up an account, the goal is to facilitate counselling with health workers. If you do not create an account then you still can access the EHC, you just cannot do counselling. Data on online counselling will be kept confidential and not be published.

This online information and counselling service requires Internet access and, therefore, needs support from several parties to make this real. There are several strategic steps that can be done, such as submitting a proposal to a sponsor as a development partner, in collaboration with the Department of Health and Communication and a hospital. What is really needed is the presentation to all parties involved regarding the urgency and benefits of EHC. Easy access to knowledge about cervical cancer is very important to be realised and plays a big role for people to be more introspective and enhancing of society's health. However this application is still in the design and experiments so it cannot be known exactly how the rate of decline in cervical cancer. Moreover, in the millennial era where people have always relied on gadgets, the authors believe that an EHC application on mobile phones can help improve people's knowledge of cervical cancer, and more recently developed similar applications to help

people realize the importance of health, physical and psychological.

5 CONCLUSIONS

This paper has documented how knowledge can be very important to health, especially cervical cancer. The literature review highlights the relationship between knowledge and disease incidence in some countries given the many deaths caused by cervical cancer, especially for developing countries like Indonesia.

Based on the literature, it is important to develop a tool that facilitates access to health knowledge, primarily cervical cancer. An E-Health counseling service is conceived to accomplish this and includes information not only about definitions, but actions, steps that can be done by the community independently, and online counselling with health personnel. It is simply designed to integrate some aspects and the parties involved to prevent or treat cervical cancer. This paper documents an art of knowledge in technology that can improve public health.

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