

Health Literacy by Telehealth Apps to Decrease Breast Cancer Diagnosed

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ABSTRACT

Background: Health literacy always being one of the health promotion ways to support the SDGs program in creating the better life for people surroundings. Health literacy try to make accessible information for positive impact in stimulating people awareness about disease especially in malignant such as breast cancer. Breast cancer still being on the first place of cancer's rank with high number of affected people. The digitalization in health literacy offers the service like online consultation, suggested daily diet, suggested time duration to do physical activities based on personal data of the user, and others. **Objective:** This study was to evaluate the application of technology being used in health literacy to decrease the number of breast cancer diagnosed around the world. **Methods:** This literature review databases were searched using online journal from Google Scholar, PubMed, ScienceDirect, online article, and WHO newsletter. This study focuses on the development of telehealth using in health literacy for malignant. **Results:** The digitalization in health literacy for promoting SDGs program to reduce the number people affected by breast cancer help people surroundings accessing their health personal data and to remind the suggested schedule to do medical checkup for malignant and suggested daily lifestyles. So that the target to support SDGs health promotion way in people awareness about cancer can be reached effectively. **Conclusion:** Telehealth using in the digitalization of health literacy give positive impact in stimulating people awareness about breast cancer, which lead to the decreasing number of people affected by breast cancer around the world.

Keyword: Telehealth, Health literacy, Breast cancer, Health service, Online facilities

INTRODUCTION

In industrial revolutionary era 5.0, medicine cannot be separated from the digitalization of technology. There are so many innovations has been developed especially in promoting SDGs. One of innovations that being developed to support the mission of SDGs is Telehealth application by using health literacy principle in stimulating people awareness about health lifestyle. Health problem that still cannot be solved properly was about malignant. Breast cancer as one of malignant problems is being stated on the first rank of cancer that affected people around the world. Globally, during 2023 BC in female is predicted there will be 297.790 new cases and 43.170 death caused (*Kanker Tiroid - Fakta Statistik Kanker*, n.d.). In Indonesia, based on Globocan Data in 2020, the prevalence

number of BC has been accumulated for 68.858 cases which are mean (16,6%) from 396.914 new cases number (*Kanker Payudara Paling Banyak Di Indonesia, Kemenkes Targetkan Pemerataan Layanan Kesehatan - Sehat Negeriku*, n.d.). BC is a kind of cancer which is minimum hope to be clear out totally. Because of that, we must minimize the probability being affected with BC by aware to SDGs mission especially in SDGs 3 which is focused on good health and well-being.

Online health services that being developed with Telehealth application will be helpful to early preventive way onto BC diagnosed. Telehealth that will be used for people surroundings related to health literacy which influence people about their knowledge of BC. So that, our hope is to facilitate the true information about BC and serving other added facility like online consultation with

professionalism health assistant, suggested daily diet, suggested duration, and kind of physical activities, and including video exercising especially focused on breast massage. Better level of health literacy will increase the survival rate so that life in this world create a better living future.

Individual awareness really influences the usage of health literacy principle in prevention many diseases around us. Not only individual awareness that influent people's intention in using Telehealth, but also the governmental policies in promoting SDGs which we can see right now there are so many SDGs Ambassador competition to raise up people awareness in health. SDGs Ambassador can be specialized on their majority, for example one SDGs Ambassador to promote BC awareness, the other one to promote technology application in health literacy.

Most of all BC prevention can be done by breast self-examination, so the using of Telehealth is important to support people's knowledge about BC information and data. BC as a multifactorial cancer, so Telehealth that will be used can add personal data space by using informed consent. The personal data space can be filled with personal history which includes age at diagnosis of BC previous breast biopsies and treatment of other cancer with use of radiations. Family history includes history of ovarian cancers and BCs in first degree relatives (Akram *et al.*, 2017). The effectiveness of Telehealth apps has been examined, six months after implementation of a telehealth-based educational intervention administered by a physician, BC awareness was drastically improved (Mehmet Celal Kizilkaya, 2023).

METHODS

This study was early focuses on SDGs 3 because SDGs3 is the most reliable theme with the topics of journal publication which is "Health Promotion for SDGs". Then, we searched about World Health Organization perspective onto SDGs promotion for better living future by searching the WHO conference from WHO newsletter website which explain about health promotion and preventive way. After, analyzing the conference about SDGs promotion, we

focused the health education method by health literacy to raise citizen's awareness onto breast cancer. Health literacy that we choose as our method being mixed with technology digitalization application because we live among the industrial revolutionary era 5.0. To support our idea, we do journal review from Google Scholar, PubMed, and ScienceDirect. We also do article review from online browser to support the credible data about daily diet and calories in preventing BC diagnosed. We choose BC because we focused on the highest prevalence number of cancer affected people based on online article from National Cancer Institute and from Indonesian data.

All of references that we searched have been limited on last 10 years and categorized as free full text. All references that we search are being focused as our keyword which are consist of SDGs 3, WHO conference, Telehealth, Breast cancer, health literacy, online health services. Mixed keywords like "Effectiveness of Telehealth", "Telehealth related to Breast Cancer", "Kinds of Breast Massage Therapy" also being used. All references are sited using Mendeley apps.

To fulfill this literature review in results and discussion part which are showing the layout of Telehealth apps, we used Canva Edu to design our Telehealth apps layout. The comparison before and after Telehealth application to support effectiveness of Telehealth apps is cited from previous study references. The specific data collection of our literature review is consisting of two systematic reviews, one cross-sectional survey and feasibility study, one annual review, four original articles, one randomized control trial, one systematic review and meta-analysis, and seven online website articles. The reference that using WHO conference specifically in health literacy because one of important health promotion method is by educating people surroundings.

RESULTS AND DISCUSSION

The classification level in health literacy gives different impact on social behavior to support SDGs mission. There are three levels that can be applied, which may look like these:

a) Functional Health Literacy

It describes basic-level skills that are sufficient for individuals to obtain relevant health information (for example, on health risks and on how to use the health system) and to apply that knowledge to a range of prescribed activities (*Understanding and Responding to Health Literacy as a Social Determinant of Health*. Annu. Rev. Public Health).

b) Interactive Health Literacy

It describes more advanced literacy skills that enable individuals to extract health information and derive meaning from different forms of communication; to apply new information to changing circumstances; and to engage in interactions with others to extend the information available and make decisions (*Understanding and Responding to Health Literacy as a Social Determinant of Health*. Annu. Rev. Public Health). The use of Telehealth application can be categorized on these levels.

c) Critical Health Literacy

It describes the most advanced literacy skills that can be applied to critically analysed information from a wide range of sources and information relating to a greater range of health determinants (*Understanding and Responding to Health Literacy as a Social Determinant of Health*. Annu. Rev. Public Health).

Some of the main related cases that may inhibit the interest of people surrounding to use Telehealth apps is the availability of adequate signal and the price for Telehealth's facility fee. But, the Communication and Information Ministry of Indonesia has facilitated the internet stall in region with limited access of internet. Due to achievable fee, the Telehealth apps providers can make cooperate with other healthcare service company. Especially, in celebrating the International Breast Cancer Day on October 19th, all of Telehealth apps can offer a special discount for services' fee. To maximize the Telehealth output in increasing health promotion of SDGs due to health literacy, Telehealth providers can supply daily reminder to breast self-examine during the celebrate month of International Breast Cancer Day. The supporting other development technologies can be applied too, multi-level interventions may be necessary,

including structural-level interventions to promote technology and telehealth access (e.g., universal, free phone, and broadband Internet access) (M. Ertl, et al., 2023).

Telehealth apps that will be applied to prevent breast cancer diagnosis focused on serving the features such as newsletter about breast cancer cases, online consultation with professionalism health assistant, suggested daily diet, suggested duration and kind of physical activities, and including video exercising especially focused on breast massage therapy. The supporting variable to maximize the work of Telehealth apps is by providing space for the users to fill their personal data include history of breast cancer diagnosis if being affected or from their family history. Telehealth's providers must be training first before launch this application because there will be informed consent that will be made as agreement between providers and the users. The personal data as supportive variable important because it can accumulate the progress of user's health literacy in BC awareness. The more impactful progress of users being shown, the higher Telehealth apps rate. Telehealth apps tried to make easier communication one - on - one system between health professional assistant and users. Some women may feel shy to visit health professional assistant by offline to consult about their breast, so the availability of Telehealth can be the alternative way to keep women around the world self - examining their breast regularly with health professional assistant explanation. The specific way in Telehealth's work is being Provided in-person and virtually by Health Insurance Portability and Accountability Act compliant and encrypted telehealth conferencing (Myers *et al.*, 2020). So, the credibility of information being shared by Telehealth apps is proven.

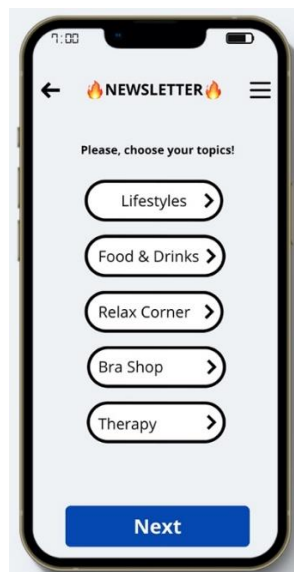
Newsletter about Breast Cancer

Telehealth apps can be cooperated with other GO or NGO to show the newest development medicine cases about breast cancer to the user. This feature can be made more attractive by showing the checklist filter that can be filled directly by the user based on their interest specialize topics. The cooperation with editor job and design graphic designer is

important to conduct attractive layout in showing newsletter so that the user intention to read the newsletter about BC will increase as the increasing way to promote health literacy.



Picture 1. Language of Telehealth Based on Every Individual Country



Picture 2. Types of Newsletters being offered by Telehealth Apps

The option that being showed consist of lifestyles, food and drinks, relax corner, bra shop, and therapy. Lifestyles really influence the probability of someone being affected by some disease. Food and drinks that contain high fat will increase the risk factor of BC diagnosed. Relax corner on this Telehealth app contain newsletter about tips and tricks to maintain stress relieve in women's

daily life. Bra shop in this newsletter offers many online shop article that specialize selling bra. The last one is therapy feature where the newsletter serves the user about all ways especially in conventional or traditional ways that not really complicated in prevention BC diagnosed.

Online Consultation with Professionalism Health Assistant

There will be cooperate system between Telehealth operator and GO or NGO to coordinate the available schedule for health assistant in doing consultation with the user by online meeting. The consultation space will be only showed one hour before the consultation session. Health professional assistants include oncologist, psychiatrist, and nutritionist. Those three specialties will support the increasing of health literacy for the users in BC early prevention which is supporting the SDGs 3.



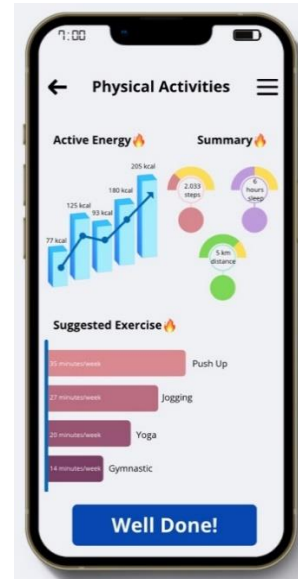
Picture 3. Consultation Session of Telehealth Apps

Suggested Daily Diet

Giving adequate recommendations food and drinks for the users in prevention the breast cancer diagnosed, this program will cooperate with nutritionists. In this facility, the personal data that has been fulfilled by the users with informed consent will be shared to the nutritionist so that the recommendations menu by nutritionist can adapt with user's personal conditions like age and daily work.



Picture 4. Recommendations Food and Drinks for Telehealth Apps' users



Picture 6. Summary of Health Exercise of Telehealth Apps' users

Suggested Duration and Kind of Physical Activities

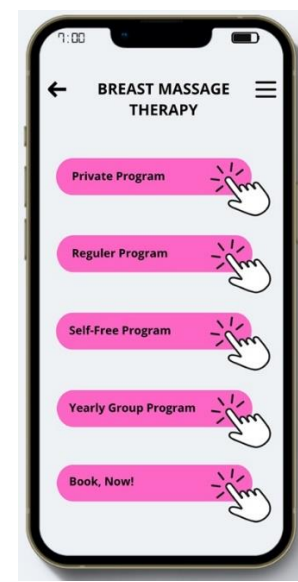
This feature will include the user calories that being burned because one of risk factor in breast cancer diagnosed is obesity. This part will cooperate with physicians. The duration will follow the user's needs, for example if the user fills the capacity of weekly exercise for three times, the physician will also try to set the schedule for three times in one week with enough target calories burning.

Breast Massage Therapy

This facility is offering many programs that relate to every individually needs. Different program may offer different fee and facility. This feature also giving user facility to consult with official contact if the users are being confused to choose what program may be suitable with them. This massage therapy willingness to reduce the stress level of women so that it will decrease the probability of women being affected by breast cancer.



Picture 5. Recommendations Physical Activities



Picture 7. Breast Massage Therapy Services being offered by Telehealth Apps

The role of health literacy in promoting SDGs has been utilized in health care systems, disease prevention, and health promotion to maintain and enhance life quality. Health literacy also contributes to the sharing of responsibilities between healthcare providers and those receiving care, as well as to a greater mutual understanding between both parties during the communication process (View of Media

Health Literacy on Prevention of Noncommunicable Diseases in Adolescents, n.d.). The output and input comparison in using Telehealth apps has showed significant increasing awareness from people surroundings. Because of that, Telehealth apps estimated effective enough as an appropriate way in health promotion for SDGs3 by health literacy method.

Table 1. The Comparison in Telehealth Intervention (Mehmet Celal Kizilkaya, 2023)

	Baseline (%)			Follow-up (%)			p-value
	Yes	No	Don't Know	Yes	No	Don't Know	
Lump or thickening in the breast	10	8	82	86	5	9	<0.0001
Lump or thickening under the armpit	10	8	82	86	5	9	<0.0001
Bleeding or discharge from the nipple	5	8	87	86	3	11	<0.0001
Pulling in of the nipple	7	7	86	81	5	14	<0.0001
Change in the position of the nipple	7	8	85	77	7	14	<0.0001
Rash on or around the nipple	10	6	84	83	7	10	<0.0001
Redness of the breast skin	12	6	82	81	6	13	<0.0001
Change in the size of the breast or nipple	10	7	83	86	6	8	<0.0001
Change in the shape of the breast or nipple	10	7	83	85	7	8	<0.0001
Pain in one of the breasts or armpit	11	0	89	90	3	7	<0.0001
Dimpling of the breast skin	0	10	90	86	7	7	<0.0001

This table displays the responses of participants regarding awareness of various signs of BC at baseline and at 6 months follow up (n = 100). BC, breast cancer.

Table 2: Participant awareness of warning signs of BC.

From that table above, the people knowledge about breast cancer has significantly increased. The increasing that knowledges give better promotion to SDGs 3 mission. If the Telehealth apps can be applied and promoted wisely, all people around the world will be care to each other to always support the healthy daily lifestyle. One people knowledge that being shared to each other can raise up the awareness of breast cancer diagnosed. Individual intention to study directly about breast cancer can maximize the health literacy way as SDGs promoting way. Health policies in digitalization health services must be developed again to build a better health promotion for SDGs.

CONCLUSIONS

This study aims to inform about the potential health literacy method in SDGs health promotion. The Telehealth application in health literacy method has significant role to raise up people awareness in prevention the breast cancer diagnosed. Cooperate with GO and NGO also being suggested to develop the facility that being offered in Telehealth

apps. The individual awareness contributes big impact in decreasing the number of new breast cancer cases. Hopefully, all information and data that being shared in Telehealth apps can play an effective way in promoting SDGs by health literacy principle. The usage of Telehealth apps helps people access to information about health perspective easier. So, the target of SDGs 3 in creating good health and well-being can be achieved well by health literacy using Telehealth apps. Considering the beneficial output of Telehealth application on SDGs promotion to reduce the prevalence number of new cases in BC, health literacy in Telehealth apps is recommended to be developed again to stimulate better awareness on citizens about BC.

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