

DEVELOPMENT OF THE KEPO INFORMATION SYSTEM AS AN EFFORT FOR ONLINE BREAST CANCER EARLY DETECTION

Lilis Novitarum*, Arjuna Ginting, Aprilita Br. Sitepu

STIKes Santa Elisabeth Medan, Jl. Bunga Terompet No.118, Sempakata, Medan Selayang, Medan, Sumatera Utara
20131, Indonesia

*lilisnovit@gmail.com

ABSTRACT

The primary cause of cancer-related deaths in women is breast cancer. While its best efforts, the Indonesian government has not been able to considerably lower the incidence of breast cancer while pushing for programs for clinical breast examinations (CBE) and breast self-examination (BSE). Less knowledge exists among reproductive women about early diagnosis of breast cancer symptoms. A lack of knowledge about breast cancer may have an impact on this. Reproductive Women can use the latest technological advancements as a tool to raise their self-awareness and prevent breast cancer. In an attempt to identify breast cancer early, this project attempts to create an online breast cancer prevention (KePO) information system. Through application architectural design and system development, this research creates a KePO information system. The team has created a website with the URL <https://kepoinaja.my.id/> as part of an information system for breast cancer prevention. There is an article menu and consultation on this page. Reproductive women can use the consultation menu to find out their breast cancer risk score and the articles menu to read information about breast cancer. It is intended that by offering advice on how to prevent breast cancer risk factors, reproductive women through the KePO website can lower the incidence of breast cancer.

Keywords: development; online breast cancer early detection; KePO information system

INTRODUCTION

Breast cancer in Indonesia ranks first among all types of cancer in Indonesia with a proportion of 16.6 percent and a mortality rate of nine point six percent (Globocan, 2020). WHO added that new cancer data in Indonesia has almost reached 400,000, placing Indonesia in the eighth position with the highest number of cancer sufferers in the world (WHO, 2019). Riskesdas data for 2018 shows an increase in cancer prevalence in Indonesia by zero point four percent (Riskesdas, 2018). This figure places North Sumatra in 13th place for breast cancer in Indonesia with a prevalence of one point fifty-five per 1,000 population. Data from the Medan City Health Service shows that in 2019 there was an increase in breast cancer cases from 856 cases to 1,192 cases in 2020 (DKK Medan, 2021), this figure positions Medan City as the highest cancer area in the North Sumatra region.

The KPKN states that more than 80 percent of breast cancer diagnoses are at an advanced stage so that health workers have difficulty carrying out treatment (KPKN, 2015). Advanced breast cancer requires more than one treatment method, namely surgery, chemotherapy and radiotherapy or light therapy. This is proven by data from the Indonesian Ministry of Health that 61.8 percent of cancer treatment uses surgery, 24.9 percent with chemotherapy, and 17.3 percent with radiation (Ministry of Health of the Republic of Indonesia, 2019). This cancer treatment method shows that financing for catastrophic diseases including cancer will reach 8.6 trillion rupiah in 2021. This figure shows that the concentration of health financing by BPJS is still on the curative or treatment side, while financing for promotive and preventive programs shows zero point three. percent (Ministry of Health RI., 2022). This figure proves that the promotive and preventive efforts carried out by health workers have not obtained optimal results so that primary prevention of breast cancer has not been realized.

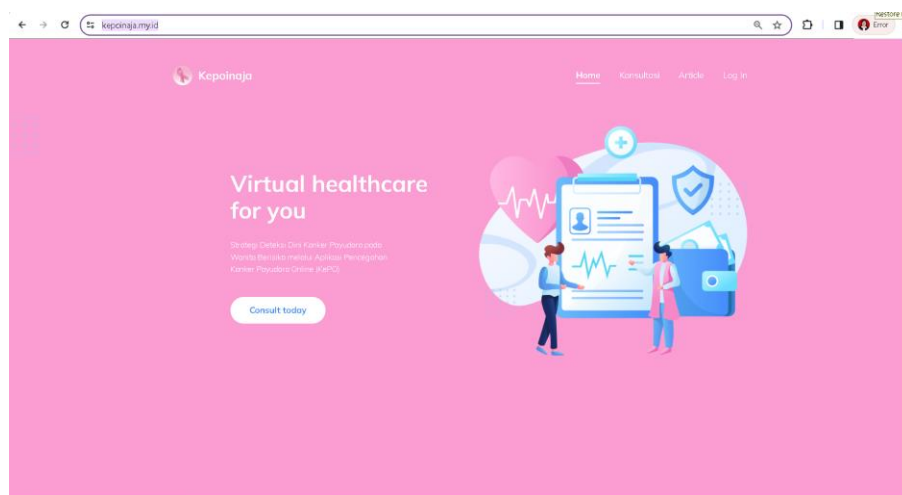
Primary prevention efforts through early detection of breast cancer with the Sadari and Sadanis programs have not shown maximum results. Data from the Medan City Health Service records that Sadanis coverage of women of childbearing age is still at four point twenty-five percent, while Sadari data is still not recorded. This proves that self-awareness to carry out Sadari and Sadanis is still very lacking. A woman who does Sadari regularly can find lumps or abnormal growths in the breasts as early as possible and immediately go to a health professional to do Sadanis. Sadanis' rapid examination helps diagnose breast cancer at an early stage, making it possible for breast cancer sufferers to undergo one method of treatment. Women of childbearing age have less awareness of early detection of breast cancer symptoms. This can be influenced by a lack of understanding regarding breast cancer. Current technological developments can be used as a medium to increase the self-awareness of women of childbearing age to prevent breast cancer. This research aims to develop an Online Breast Cancer Prevention (KePO) information system as an effort to detect breast cancer early.

METHOD

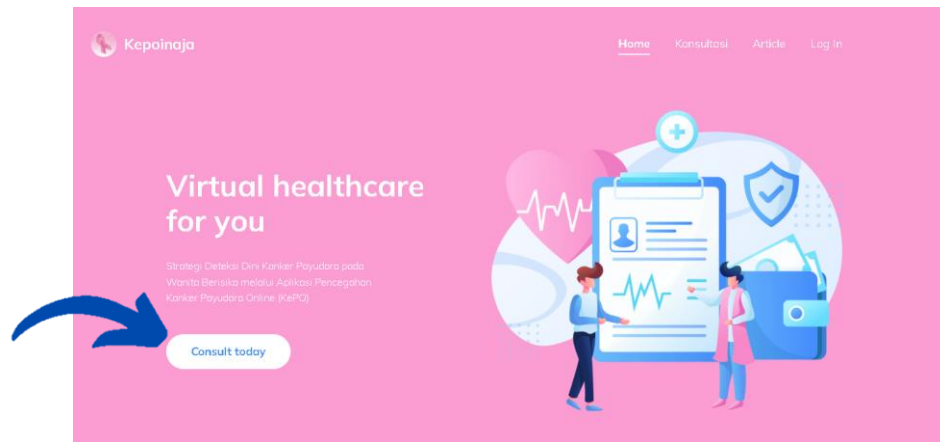
The information system design process carried out is 1) literature study, 2) needs analysis carried out by identifying and formulating problems to obtain what functions, data and parameters are needed, 3) system design and 4) system programming by preparing the application architecture design.

RESULTS AND DISCUSSION

The team has designed an information system for breast cancer prevention in the form of a website with the link <https://kepoinjau.my.id/>.



This website contains calculations of breast cancer risk for every WUS who opens the consult today menu.



After entering the consult today menu, WUS is asked to fill in data that can conclude the risk of breast cancer.

Nama

Hasil Pemeriksaan
Resiko Kanker Payudara : **Sedang**
Hasil Pemeriksaan Sadari : **Normal**

Berapa rentang usia Anda?
 <25 26-39 40-49 50-70 >70

Bagaimana riwayat keluarga dengan kanker?
 Tidak ada
 Kerabat tingkat kedua (kakek-nenek-paman-bibi)
 Kerabat tingkat pertama (orangtua atau saudara kandung)
 Lebih dari satu kerabat tingkat satu

Ditemukan benjolan
 Ya Tidak

Benjolan teraba
 Bergerak Kenyal Tidak bergerak Keras

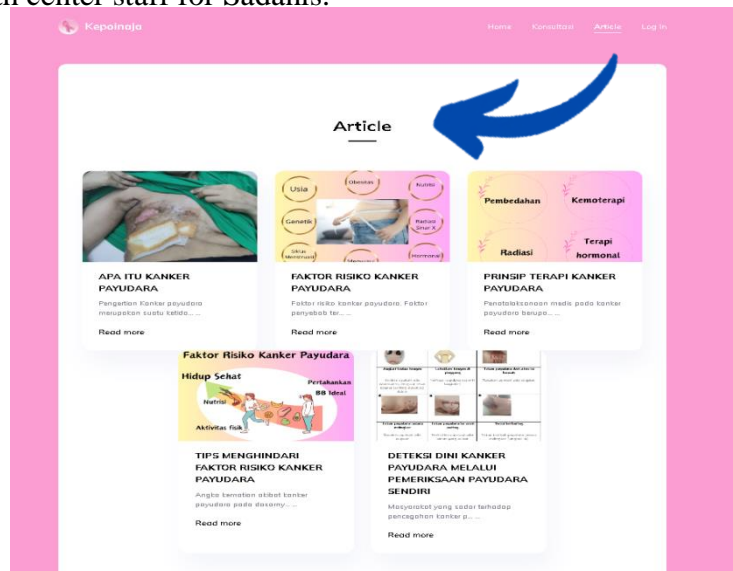
Puting Payudara
 Menanjol Masuk ke dalam

The data on breast cancer risk examination results is kept confidential and no website visitors can see it, so the confidentiality of website visitors is guaranteed. Apart from that, the website provides information about breast cancer with the following 5 materials:

1. What is Breast Cancer. This article explains the meaning and signs of breast cancer.
2. Risk factors for breast cancer. This article contains the exact factors that cause breast cancer, but age, genetics, menstrual cycle, hormonal and breastfeeding history, obesity, physical activity, alcohol consumption, and history of chest radiology examination in women at risk of breast cancer can increase the possibility. breast cancer occurs.
3. Principles of breast cancer therapy. This article contains medical management of breast cancer in the form of surgery, radiation, chemotherapy, immunotherapy and palliative therapy. Types of surgery include breast conservation surgery, breast removal and breast reconstruction surgery.
4. Tips to avoid breast cancer risk factors. This article explains the importance of women of childbearing age to be aware of and control primary prevention behavior for breast cancer by

avoiding risk factors, adopting a healthy lifestyle including controlling healthy nutritional intake and regular physical activity.

5. Early detection of breast cancer through breast self-examination (BSE). This article explains how to do breast self-examination (BSE). People who are aware of breast cancer prevention will check themselves and carry out early detection. Women at risk of doing Awareness routinely show sensitivity and alertness to changes that occur in the breasts. The Awareness examination can be carried out by every woman one week after menstruation or the seventh to 14th day after the first day of menstruation, however, women who have experienced menopause can carry out the Awareness examination at a regularly scheduled time every month. If you find early signs of breast cancer, it is recommended to immediately go to the doctor or health center staff for Sadanis.



The online Breast Cancer Prevention application in the form of a Kepoinaja website (<https://kepo.inja.my.id/>) has been designed by the research team. This application has been distributed to WUS groups who actively use social media and information systems. Within 2 weeks after the website was distributed, 200 registered visitors had tried to enter consult today. The consult today menu provides breast cancer risk calculations for visitors using the RoJosons calculation formula in Novitarum et al. (2023) by considering age and family history of cancer. Breast cancer risk factors are categorized into 3 categories, namely low, medium and high.

CONCLUSION

The KePO website provides information on women's risk levels for breast cancer and tips for women of childbearing age to avoid risk factors for breast cancer. It is hoped that the existence of this risk score will make WUS more aware that it is important to carry out breast self-examination and be aware of the signs and symptoms of breast cancer so that they can make decisions to adopt healthy living behavior. Awareness allows WUS to find signs and symptoms of cancer in the early stages, making it possible to take medical action more quickly and increase the cure rate for breast cancer.

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