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INTRODUCTION

1.1 Background

As much as 16.7% of all 2018 cancer cases in Indonesia were cases of breast cancer, making it the most common type of cancer suffered in the country. The number of cases a year is projected to increase by over 30,000 cases in the next 20 years. Out of all the strains, breast cancer ranks second in terms of mortality at 11%. Falling behind by only 1.6% to lung cancer (World Health Organization, 2020).

The largest contributor to the high death rates of breast cancer is the late detection of this illness. Up to 80% of all breast cancer cases are detected at a late stage (Dyanti & Suariyanti, 2016). When patients are diagnosed in the first or second stage of cancer, the life expectancy relative to 5 years in the future is as high as 99%. This life expectancy rate drops by 13% when the cancer is diagnosed in the 3rd stage. It then drops an additional 58% if diagnosed in the fourth stage (American Cancer Society, 2021).

Late-stage diagnosis can be avoided through routine breast self-examinations (*Pemeriksaan Payudara Sendiri, SADARI*). However, according to a study done in Surabaya, only 44% of respondents have ever done SADARI (Dewi, et al., 2019). These numbers are especially worrying when the remaining 55,6% of women who have never practiced SADARI have a higher risk of late-stage breast cancer diagnosis.

The same study found that more women above the age of 40 were practicing SADARI compared to younger women. Nonetheless, practicing SADARI is important for both older and younger women. Breast cancer is not exclusive to older women. Even though it is less prevalent in younger women, the strain of cancer suffered by women under 40 is different in the sense that it grows aggressively and

is far more fatal. This creates a need for quicker diagnosis and treatment (Young Survival Coalition, 2020).

Initially, the study conducted by Dewi, et al. (2019) speculated that Optimistic Bias was the cause for sparse numbers of SADARI practice in younger women. Optimistic Bias being the inherent belief that the chances of experiencing a negative event are small and irrelevant to the person. After conducting a survey (2020), the author disproved the speculation and found that most of the respondents show an interest in learning SADARI. Instead, the main obstacle was that respondents do not have an in-depth understanding of SADARI to put it into practice.

This result is in line with previous studies done by Baswedan & Listiowati (2014) and Susmini & Supriyadi (2020). These studies found a linear correlation between knowledge of SADARI with the habit of practicing SADARI. Another study by L.K.W. (2018) also concluded that there is no correlation between perceived risk and the habit of practicing SADARI.

The base assumption would be that there is a lack of information circulating about SADARI. Yet, the author has found – through the same survey – that even people who are not in habit of doing SADARI have heard of it through many forms of media (including, infographics, articles, video tutorials and sex education at schools).

This means that thus far, the circulating information on SADARI has not been successful in creating a habit of doing SADARI in women under 40 years old. Upping the risk of late cancer detection in younger women by eleven times compared to women who practice SADARI routinely. A new form of media is needed to fill this gap. One that can better guide and engage with women on their journey to learning and practicing SADARI.

For this to happen, the author would like to develop a mobile application to contribute to this case. This media was deemed the most suitable for three reasons.

Firstly, for its accessibility – according to Statista (2022) up to 96% of the Indonesian population above 16 years old owns a smartphone. Thirty percent more than any other platform. Secondly, a mobile device is a personal device and provides privacy that other platforms may not. Lastly, mobile devices are mobile and make it possible for women to do self-examinations in the bedroom or bathroom. It is for these reasons that the author proposes the development of an application that can help women aged 20-39 to develop the habit of doing SADARI.

1.2 Problem Formulation

Based on the clarification in the background, the author can formulate the problem as such: How to design a mobile application that can make women aged 20 to 39 develop a habit of practicing SADARI?

1.3 Limitations

The author has set limitations on this research based on the problem formulated above. The limitations set cover geographic, demographic, and psychographic aspects. The limits set are as following:

1) Geographic Limits

The study limits its primary target to the urban areas within Indonesia and the secondary target to its non-urban areas. This is attributed to the prevalence of cancer patients in Indonesia being 0.59% higher in urban areas than it is in rural ones (Indonesian Republic Ministry of Health, 2018).

2) Demographic Limits

This research is intended towards women aged 20 to 39. This age range was chosen as it is the earliest recommended age for practicing SADARI (Nareza, 2021) up to the age where regular clinical check-ups are recommended. Other than that, this research is also limited towards the following criteria:

Nationality : Indonesian

Language	: Bahasa Indonesia
Religion	: All Religions
Education	: High School and above
Occupation	: Any occupation
Economic Class	: C to A (middle to upper class); monthly expenditure of above Rp1.000.000,- on water, electricity, and telephone bill, as well as education and fuel (Nielson Admosphere, 2020).

3) Psychographic Limits

This research is limited for a target that is concerned with health, knows of SADARI but is not familiar with the steps, does not practice SADARI regularly and are open and willing to learn. As stated above, this research is intended towards respondents who are within or above Nielson Admosphere's C economic class. This class is characterized to be more invested in resources that can improve their future such as education and knowledge (Sparks, 2015).

This study also limits the development and research of the solution until the Ideation stage of the Human-Centred Design Method. This is due to the fact that the end product is not meant for publishing therefore its implementation cannot be assessed nor studied.

1.4 Objective

The objective of this research is to design mobile application that can make women aged 20 to 39 develop a habit of practicing SADARI.

1.5 Benefits

1.5.1 For the Author

Through this research, the author is able to apply knowledge acquired during their study in Multimedia Nusantara University and attain a Bachelor's in Design. This final project can be shown as a manifestation of the author's abilities and an instrument to furthering their career. Through this project, the author learns how to properly create an interactive media that satisfies the target audience.

1.5.2 For the University

This research can be used as reference for future studies or papers conducted in the university.

1.5.3 For the Public

The author hopes to present a solution that can be used as a motivation and information source concerning SADARI to young women. This research was made in hopes that the results may cause a healthy shift in younger women's habits to self-examine their breasts

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