

## Factors Related to Breast Self Examination (BSE) Behavior in Female Student of Public Senior High School 1 Jambi City

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### ABSTRACT

This study aims to analyze the proportions and the relationships between determinant factors to Breast Self Examination (BSE) behavior of Female Student in Public Senior High School 1 Jambi City. This is a cross sectional study. Collecting samples based on proportional stratified random sampling. The primary data was collected by distributing questionnaires to 63 respondents. The data analyzed by chi-square test. The result showed; there is a positive relationship between attitude, information exposure, family/mother's support and peer's support (poor BSE behavior is 41.3%, poor knowledge is 55.6%, negative attitude is 42.9%, never been exposed to BSE information is 39.7%, were not supported by family/mother is 46.0% and were not supported by peer is 34.9%) to BSE behavior and there is a negative relationship between knowledge (poor knowledge is 55,6%) to BSE behavior of Female Student in Public Senior High School 1 Jambi City.

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## **INTRODUCTION**

Breast cancer is a non-communicable disease which globally contributes to a large number of deaths and morbidity due to cancer's rate in general. Based on World Health Organization, in 2020 there is 2.3 million women who will be diagnosed to breast cancer within 685.000 mortalities of it. It turns out in 2020, there are 7.8 million women who sufferers from breast cancer in about five years since then. That is the reason why breast cancer is the most common cancer in the world. According to Global Cancer Observatory Research (Globocan), International Agency for Research on Cancer in 2020, breast cancer occupies as the first position of cancer's incidence in the world by percentage as 47.8% of it. There are three countries who have the highest incidence rate of breast cancer there are; Australia (452.4/1 million people), New Zealand (422.9/1 million people) and The Republic of Ireland (372.8/1 million people).

The incidence rate of cancer in Indonesia is 136.2/100.000 people), while the common cancer in Male is lung cancer which as much as 10.9/100.000 people) while the common cancer in Female is breast cancer within 42.1/100.000 people. According to Riskesdas 2013 and Riskesdas 2018, the prevalence rate of breast cancer tends to increase from 2013 to 2018 (Pangribowo, 2019). In general, breast cancer sufferers in Indonesia are women. Breast cancer can be prevented as early as possible and one of the way is by doing breast self-examination (BSE). BSE program constitutes as the most widely known as the secondary prevention of breast cancer. The BSE program in Indonesia has not hit the target while the behavior and perception of breast cancer awareness in society tends to be poor and especially among adolescents aged 15 to 17 years old (The Ministry of Health Republic of Indonesia, 2016). According to Ministry of basic health research Indonesia, the prevalence rate of breast cancer nationally is 1.79 per 1 million people. There are three provinces in Indonesia who have the highest prevalence rate than national's rate which are Special Region of Yogyakarta (4.86/1 million people), West Sumatera (2.47/1 million people), and Gorontalo (2.44/1 million people) while breast cancer's prevalence rate of Jambi province is 1.32/1000 people which the majority of sufferers are women (The Ministry of Health, Republic of Indonesia, 2018).

BSE program in Jambi Province has not been carried out properly in 2020. The indicator achievement is 80% while it just 0%. It insists that there are no districts/cities in Jambi Province that carry out early detection of breast cancer with BSE. It because of the COVID 19 pandemic which affecting the community participant to be able to carry out the early detection of breast cancer to local health service (Jambi Provincial Health Office, 2020).

Jambi city has 12 public senior high school. Ever since 2022, based on data that researchers got from initial data survey in Public Senior High School 1 Jambi City which has the most population at risk, it discovered 30 participant. The proportion of participant who knows about BSE is 46.7% participant while, it just 21.42% of it know how to do BSE. Relatively, there are 3 participant who complain of breast pain, 2 of them has history of breast cancer in family. We should have look over BSE program and its essential things through adolescent aged. Later on this study can be used to enriching and develop the knowledge of

epidemiology of non-communicable disease, especially breast cancer and its prevention in high school student. This study aims to analyse; the proportions of BSE behaviour, knowledge, attitude, information exposure, family/mother's support and peer's support of Female Student in Public Senior High School 1 Jambi City, to analyse the relationship between knowledge and BSE behaviour, to analyse the relationship between attitude and BSE behaviour, to analyse the relationship between information exposure and BSE behaviour, to analyse the relationship between family/mother's support and BSE behaviour, to analyse the relationship between peer's support and BSE behaviour of Female Student in Public Senior High School 1 Jambi City.

## LITERATURE REVIEW

### A. Breast Self-Examination (BSE)

Breast self-examination (BSE) is an early detection program of breast cancer. BSE is better be done as soon as possible since a person got her first menstruation. The purposes of early this program is to find some signs and symptoms that are suspected to be breast cancer. An early detection of breast cancer is useful for reducing the morbidity and mortality of breast cancer. Since 2007 to 2013 BSE program be demonstrated in Indonesia it found 644, 951 women who had a lump in breast and 1682 of it was detected to be breast cancer. Based on non-communicable disease research of Indonesia's Ministry of Health in 2016 BSE is a the most familiar breast cancer early detection compared to breast clinical examination meanwhile, the behaviour of people in early detection using BSE is still relatively low (Kementerian Kesehatan Republik Indonesia, 2016).

### B. The Relationship Between Knowledge and BSE Behaviour

Knowledge is the results of knowing. It obtained from the process of sensing from an individual towards the object that being studied. Types of sensing are sense of sight, hear, taste, smell and touch. Knowledge factor is a cognitive domain in shaping someone's action. There are 6 cognitive domains of knowledge, such are; knowing, comprehension, application, analysis, synthesis, evaluation. According to Notoatmodjo, health knowledge is everything that a person knows about how to maintain their health. This is the same as Lawrence Green's statemented in Notoatmodjo (2010) that knowledge is one of the predisposing factors that influence someone's behaviour. Notoatmodjo (2003) knowledge can be interpreted in two categories namely; good (if the respondent answered correctly 76% to 100% of the questions) and poor (if the respondent answered correctly 75% to 0% of the questions). The results this study found that statistically there was no significant relationship between knowledge and BSE behaviour so that, the H0 was accepted. According to this study, knowledge is the protective factors to BSE behaviour of Female Student in Public Senior High School 1 Jambi City. Either respondents have poor or good knowledge these are have the same risk of having poor BSE behaviour, so that H0 is accepted.

The results of this study are in line with research conducted by Gloria Teulah, et al (2020). It shows that there is no significant relationship between BSE knowledge to BSE behaviour of Female student in Public Senior High School 2 Bitung (P-value= 0.444; PR= 0.894). The result obtained, many of respondents had good BSE knowledge which is 67.4% however, they explained that they only know BSE but did not understand the steps of BSE so that condition occurred to be the same as like much as this study's result (Tuelah et al., 2020). According to Harry Nugraha (2016), knowledge is known as the protective factor of BSE behaviour in Public Senior High School Yuppentek 1 Tangerang City and not proven statistically significant (P-value= 0.30; PR= 0.680; 95% CI: 0.39-1.34). Research conducted by Kurniawati, et al (2021) also shows that there is no significant relationship between knowledge to BSE behaviour in young women aged 15-21 years old in West Lampung Regency in 2021 (P-value= 0.869; PR= 0.707) (Harry Nugraha, 2016 ); (Kurniawati et al., 2021)

Rizka Angrainy (2017), Nurhanifah Siregar (2021) studied about factors regarding to BSE behaviour at Public Senior High School 2 Padang Sidimpuan and Rica Tri Septinora (2018) at Surya Private High School Jambi City shows that knowledge is the main risk factor of BSE behaviour (P-value= 0.002; PR= 2.32; 95%CI: 1.38-4.5). These previous studies assumed knowledge is the domain point in shaping BSE behaviour. These three studies have different characteristic of respondents due to this study. Where the majority of these three studies had poor knowledge and poor BSE behaviour meanwhile, the majority of respondents in this study had poor knowledge and good BSE behaviour (Angrainy, 2017); (Septinora, 2018); (Siregar, 2021). Generally, respondent of this study did not know; the right time to do BSE, the procedure and object who can do BSE. Good BSE knowledge does not guarantee a good BSE behaviour either. There were 63 respondents 35% of it had never done BSE and where the majority admitted that it was because they had never known about early detection of breast cancer to BSE (36.4%).

### **C. The Relationship Between Attitude and BSE Behaviour**

Attitude defined as a person's learned tendency to evaluate something in any way they want. This consists of a person's evaluation on a problem, object or on an event. The process of forming attitudes is through these 4 stages, such are; adoption, differentiation, integration, and trauma. Based on the bivariate analysis, it shows that statistically there was a significant relationship between attitude and BSE behaviour, where the proportion of poor BSE behaviour is higher in respondents who were have negative attitude. According to this study, a negative attitude is a risk factor of BSE behaviour of Female Student in Public Senior High School 1 Jambi City, so that H0 is rejected. Study conducted by Gloria Teulah (2020) found that there is no significant relationship between attitudes and BSE behaviour of Female Student in Public Senior High School 2 Bitung, most of respondents there were having a negative attitude while in this study the majority of respondents had a positive attitude regarding to BSE behaviour (Tuelah et al., 2020).

In a line with this study, research conducted by Hemas Rifka Fatimah (2018) showed that there was significant relationship between attitude and BSE behaviour of childbearing age in Tegalrejo District, Special Region of Yogyakarta in 2018 (P-value= 0.001) and attitude is a risk factor of BSE behaviour (PR= 2.17). The majority of respondents in that study had a positive attitude which is 53.7% of them and were in line with this study (57.1% respondents). Research conducted by Selvita Barus (2019) showed that students who have a negative attitude more likely to have 2.045 times the risk of having poor BSE behaviour of Female Student in Public Senior High School RK Delimurni Bandar Baru (Barus & Yufdel, S.Kep., Ns, 2019); (Fatimah, 2018). In this study explains that, the attitude of students to realize the importance of BSE can increase the self-awareness to be able to practice BSE regularly every month. In this way, students will feel used to and will not be hesitate to practice BSE and will be able to find out if there are some abnormalities in their breast.

#### **D. The Relationship Between Information Exposure and BSE Behaviour**

Information sources are all forms of intermediaries used to convey information that is used to a large quantities mass. According to Notoatmodjo (2003), there are 3 types of health information sources, such are; printable media (magazines, newspapers, posters, banners), electronic devices (internet, radio, television), and health workers. The existence of an useful sources of information both related to increasing the level of knowledge and a good attitude toward disease prevention behaviour. Information exposure is the main factor of BSE behaviour of Female Student in Public Senior High School 1 Jambi City. Respondents who have never been exposed to BSE information have a risk of having poor BSE behaviour of 5.07 times compared to respondents who have been exposes to BSE information and this is has been proven statistically significant, so that H<sub>0</sub> is rejected. In a line with the research which conducted by Shinta Deby Afianty (2019) shows that there is a significant relationship between information exposure to BSE behaviour of Female Student in Public Senior High School Putra Bangsa Depok in 2019. Respondents who have never been exposed to BSE information more likely to have poor BSE behaviour of 1.485 times compared to respondents who have been exposed to BSE behaviour (P-value= 0.0009; PR= 1.485; 95%CI: 1.066-2.067). The majority in that study is respondents who have been exposed to BSE information and have a good BSE behaviour, that thing is also happened in this study(Afianty et al., 2019).

In the contrast of this study, research conducted by Dini Apriliyana et al (2017), showed that there was no significant relationship between information exposure and BSE behaviour of Female Student in Public Senior High School 3 Semarang (P-value= 0.301; PR= 0.670). Statistical analysis shows that poor BSE behaviour is higher in respondents who are not exposed to BSE information. Researchers assumed that information exposure that respondent got were not related to performing BSE. Exposure to health that related to BSE helps sufferers and groups of people who want to know the procedure and benefits of performing BSE. In Indonesia, there are 80% of sufferers who sufferers do not carry out initial examination to health services and they do not know either they suffer from breast

cancer, this thing led to the delay of breast cancer detection and decreasing the health of sufferers in 2015 (Dyanti & Suariyani, 2016). The results of this study obtained that the sources of information are generally found in online application, which is Twitter. The results for early detection of breast cancer, especially BSE are not always consistent. This is because of there are differences in exposure to information obtained by the respondent of a research. This is maintained with statement from Kalayu Birhane (2017) which shows that there were several previous studies in Berhan regarding BSE behaviour whose the results is always varied (Birhane et al., 2017).

#### **E. The Relationship Between Family/Mother's Support And BSE Behaviour**

According to Friedman (2013) family support is an attitude of accepting family actions towards family members in need. This can be in the form of emotional support, informational support, instrumental support, affirmation support, so that person in need feels cared of it. Individuals who are in a supportive family will generally have a better condition than those who are not. The results of this study indicate that there is a statistically significant relationship between family/mother's support to BSE behaviour of Female Student in Public Senior High School 1 Jambi City. Based on bivariate analysis, family/mother's support is the risk factor of BSE behaviour of Female Student in Public Senior High School 1 Jambi City, so that H<sub>0</sub> is rejected.

In a line with this study, Ari Pratama Watiningsih et al (2020) shows that family/mother's support is having a positive relationship with BSE behaviour. It is also known that respondents who are not supported by their family/mother regarding to BSE has 7 times risky of having poor BSE behaviour (P-value= 0.003; PR= 7.002) (Watiningsih & Sugiartini, 2020). In contrast with this study, research conducted by Fachni Dyah Anggraini et al (2020) shows there is no significant relationship between family/mother's support and BSE behaviour. Where family/mother's support is a protective factor regarding to BSE behaviour and it is proven statistically significant (PR= 0.729; 95%CI: 0.222-2.317) (Anggraini et al., 2020). Family/mother's support helps to create a sense of mutual understanding among them. Family/mother is the closest figure to an individual, in the form of supporting the early detection of breast cancer. This support motivates someone to take early preventive action to improve someone's health status and is a good and supportive form for creating behaviour patterns for people who receive it. Optimising participants for families/mothers in this care must be improved.

#### **F. The Relationship Between Peer's Support And BSE Behaviour**

Peer support is one of the shapers of someone's behaviour. The existence of someone's beliefs' and beliefs' regarding an object will support in forming a behaviour toward that object. In this study, the form of peer support could be their role in providing information about BSE and breast cancer awareness. These could be done by to talk to with a friend and sharing some feedback of it. The relationship between peer support and BSE behaviour of Female Student in Public Senior High School 1 Jambi City has proved to be statistically significant. Respondents who are not supported by their peer have a risk of having poor BSE behaviour compared to respondents who are supported by their peer so that, H<sub>0</sub> is rejected.

The results of this study are in line with research conducted by Hidayani et al (2022) which shows there is a significant relationship between peer and BSE behaviour of Female Student in Islamic Boarding School X Priringsewu regency (P-value= 0.005). Respondents who are not supported by their peer have a 4.569 chance of having poor BSE behaviour (PR= 4.569; 95%CI: 1.684-12.399). Hidayani assumed that the behaviour patterns of grade 1<sup>st</sup> in high school students tended to have the same questionnaire answer, because they were still not confident in deciding their own answer which was also happening in this study (Hidayani et al., 2022). Previous research conducted by Rismawaty Tuarita (2021) shows a significant relationship between peer's support and BSE behaviour of Female Student in Public Senior High School Sedayu Bantul, Special Region of Yogyakarta in 2021. Research conducted by Ester Ratnaningsih (2020) shows that respondents who are not supported by their peers have a 4.875 times of having poor BSE behaviour and it is proven statistically significant (P-value= 0.000; PR= 4.875) (Ratnaningsih, 2020).

In this study peer's support can be in the form of informational support and emotional support from someone who is almost in the same age as the respondent and providing motivation to do BSE. The results of this study indicate that the proportion of respondents who are supported by their peers to perform BSE is low. This is because, with the low proportion of respondents who get BSE information from peers and do not often reminding each other to practice BSE.

### Contextual Framework

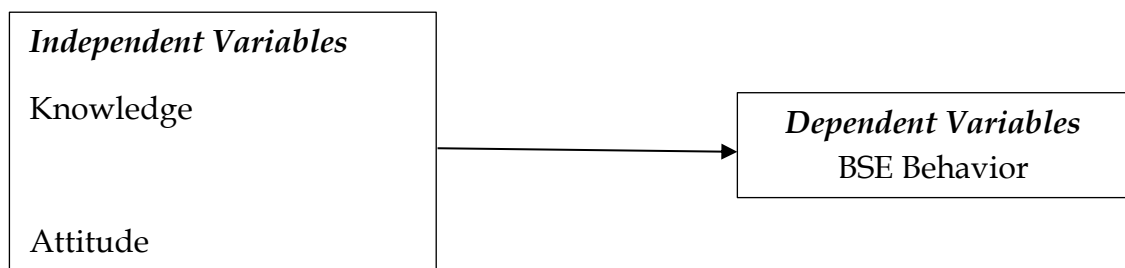


Figure 1. Conceptual Framework

## METHODOLOGY

The type of this study is descriptive analytic with a quantitative approach method and using a cross sectional study design. It located at Public Senior High School 1 Jambi City. The population of this study is all students of Female student in Public Senior High School 1 Jambi City in 2022 who are 580 students. The sample of this study are 63 Female Student which calculated using the Lemeshow's and Lwangga's formula which published by WHO (1991) while the sampling method is using proportional stratified random sampling. The instrument of this study is questionnaire which is measured by a questionnaire form. Researchers have tested the validity and reliability of the questionnaire which conducted in different places from place of study. The validity tested is using the Pearson's Product Moment test with R Table for 30 respondents is 0.361 and it's valid if the R Count value > R Table Value. The reliability tested using the alpha Combach test with an alpha value of more than 0.6 then the item is reliable. By then, from 40 items it became to 39 item will be ask to respondent. Data processing for bivariate is using the chi-square test with considering the value of Continuity Correction (a).

## RESEARCH RESULT AND DISCUSSION

### A. An Overview Respondent's Characteristics

Based on the results of analysis, it was found that the distribution of sample's characteristics was presented in Table 2 below:

**Table 1. Distribution of Respondent's Characteristic**

<b>Respondent's Characteristics</b>	<b>Total (n=63)</b>	<b>%</b>
<b>Age</b>		
15 Years old	16	25.4
16 Years old	16	25.4
17 Years old	18	28.6
18 Years old	13	20.6
<b>Have/Have not do BSE</b>		
Have	41	65.0
Have not	22	35.0
<b>Reason for not doing BSE</b>		
Do not feel she has breast cancer's symptoms	5	22.8
Never heard about BSE	8	36.4
Unthinkable to check the breast	3	13.6
Do not know the steps of doing BSE	5	22.7
There is no family's history breast cancer	1	4.5
<b>Routinely do BSE/Do not routinely do BSE</b>		
Routine	6	15.0
Do not routine	35	85.0
<b>Respondents Characteristics</b>	<b>Total (n=63)</b>	<b>%</b>

<b>Have/Have not get information about BSE</b>		
<b>Have</b>	38	60.3
<b>Have not</b>	25	39.7
<b>BSE sources</b>		
<b>Magazine</b>	4	10.5
<b>Health center staff</b>	10	26.3
<b>Health cadres</b>	2	5.3
<b>Television/Radio</b>	4	10.5
<b>Etc ....(Twitter)</b>	18	47.4

From the table above, we know that the total of participant is 63 respondents. Generally, the most dominant characteristic of Female Student Public Senior High School 1 Jambi City is aged 17 (28.6%) years old. The majority of respondents have ever do BSE (65.0%). Since 41 respondents did BSE, there were 15% of it do it routinely each months. The proportion of respondent who have ever been exposed to BSE is 60.3% respondents and majority know BSE from Twitter which is 47.4% respondents.

### B. Frequencies of Each Determinants Factors

Based on this table 3, these are the descriptions of determinants factors' frequencies:

**Table 2. Frequencies Distribution of BSE Behaviour's Determinants Factors of Respondents**

<b>Variables</b>	<b>Frequencies (n)</b>	<b>Percentage (%)</b>
<b>Knowledge</b>		
<b>Poor</b>	35	55.6
<b>Good</b>	28	44.4
<b>Behaviour</b>		
<b>Poor</b>	26	41.3
<b>Good</b>	37	58.7
<b>Attitude</b>		
<b>Negative</b>	27	42.9
<b>Positive</b>	36	57.1
<b>Information Exposure</b>		
<b>No</b>	25	39.7
<b>Yes</b>	38	60.3
<b>FamilyMother's Support</b>		
<b>Not Supported</b>	29	46.0
<b>Supported</b>	34	54.0
<b>Peer's Support</b>		
<b>Not Supported</b>	22	34.9
<b>Supported</b>	41	65.1

From discovering the table 2 the distribution based on BSE behaviour, knowledge, attitude, information exposure, family/ mother’s support and peer’s support of 63 respondents. The majority of respondent as known has; poor knowledge (55.6%), good BSE behaviour (58.7%), positive attitude (57.1%), have been exposed with BSE information (60.3%), supported by family/mother (54.0%) and supported by peer (65.1%).

**C. Bivariate Analysis**

Because of there is a relationship between knowledge, attitude, information exposure, family/ mother’s support and peer’s support to BSE behaviour of 63 respondents, the detail information following in this table 3:

**Table 3. Bivariate Analysis of BSE Behaviour of 63 Respondent**

Variable	BSE Behavior				P-Value	PR (CI 95%)
	Poor		Good			
	n	%	n	%		
<b>Knowledge</b>						
Poor	13	37.1	22	62.9	0.627	0.80 (0.44-1.44)
Good	13	46.4	15	53.6		
<b>Attitude</b>						
Negative	16	59.3	11	40.7	0.024	2.13 (1.16-3.94)
Positive	10	27.8	26	72.2		
<b>Information Exposure</b>						
No	20	80.2	5	20.0	0.000	5.07 (2.37-10.83)
Yes	6	15.8	32	80.0		
<b>Family/Mother’s Support</b>						
Not Supported	18	62.1	11	37.9	0.005	2.64 (1.35-5.115)
Supported	8	23.5	26	76.5		
<b>Peer’s Support</b>						
Not Supported	15	68.2	7	31.8	0.004	2.54 (1.42-4.54)
Supported	11	26.8	30	72.2		

In the knowledge category, it was found that the proportion of poor BSE behaviour was higher in good knowledge which is 46.4% respondents compared to poor knowledge within 37.1% respondents. From the bivariate analysis known that poor knowledge had a low risk or as the protective factors of BSE behaviour of Female Student in Public Senior High School 1 Jambi City and was not proven to be statistically significant (P-value= 0.627; PR= 0.80; 95%CI: 0.44-1.44). According to those categories in attitude, it was found that the proportion of poor BSE behaviour was higher In respondents who have a negative attitude which is 59.3% respondents, compared to respondents who have a positive attitude within 27.8% respondents. Bivariate analysis found that negative attitude is a risk factor of poor BSE behaviour. Respondents with negative attitude category had risk of having poor BSE behaviour by 2.13 times than respondents who have positive attitude and proved statistically significant (P-value= 0.024; PR= 2.13; 95%CI: 1.16-3.94).

Respondents who answered have or not have been exposed to BSE information, it was found that the proportion of poor BSE behaviour was higher in respondents who have never been exposed to BSE behaviour (80.2%) than respondents who have been exposed to BSE behaviour (15.8%) respondents. Also It was found that information is the risk factor of BSE behaviour. It concluded that respondents who have never been exposed to BSE information had risk of having poor BSE behaviour by 5.07 times compares to respondents who have been exposed to BSE information and was proven statistically significant (P-value= 0.000; PR= 5.07; 95%CI: 2.37-10.83). According to categories on family/mother's support, is known that the proportion of poor BSE behaviour was higher in respondents who are not being supported by their family/mother to do BSE which is 62.1% respondents compared to 23.5% respondents who are being supported by their family/mother to do BSE. Bivariate analysis found that respondents who are not being supported by their family/mother is risky to having 2.64 times poor BSE behaviour and was proven statistically significant (P-value= 0.005; PR= 2.64; 95%CI: 1.35-5.15).

The proportion of poor BSE behaviour was higher too in respondents who are not being supported by their peer which is 68.2% respondents while compared to respondents who are being supported by their peer to do BSE behaviour it is 26.8% respondents. Since from bivariate analysis found that respondents who are not being supported by their peer to do BSE, they will have 2.54 time risky to having poor BSE behaviour and proved by statistically significant (P-value= 0.0004; PR= 2.54; 95%CI: 1.42-4.54).

## CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis and discussion in the previous section, this research can be concluded in this following conclusions; Negative attitude, never been exposed to BSE information, poor family/mother's support,, and poor peer's support are affected the BSE behaviour of Female Student in Public Senior High School 1 Jambi City. Researchers recommendation for students to have interest in seeking information regarding BSE practices as well as be open to BSE information that can be obtained from family/mothers, peers, health workers and services.

## ADVANCED RESEARCH

The study design used to this study is cross sectional. The dependent and independent variables were measured at the same time, so that there is a probability of recall bias in proving a causal relationship and the difficulty in establishing causality between the dependent and independent variables which causes BSE behaviour to be poor due to various variations in results from previous researchers. Researchers have made efforts to control the confounding through modifications to the research design namely; determine the inclusion and exclusion criteria according to the research objectives and apply the subject randomization technique while taking the sample (proportional stratified random sampling).

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