

# INPLASY PROTOCOL

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**Support:** Nil.

**Review Stage at time of this  
submission:** Data extraction.

**Conflicts of interest:**  
None declared.

## Health Literacy and Breast Cancer Screening: A Systematic Review

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**Review question / Objective:** What is the level of health literacy towards breast cancer screening among the general population?

**Condition being studied:** We are studying the health literacy towards breast cancer screening. Breast cancer screening can be referred to as mammogram, clinical breast examination (CBE), and Breast self-examination (BSE). Health literacy also may consist of multiple components including cultural, conceptual knowledge, print literacy, numeracy literacy, oral literacy and media literacy related to health. All the components may affect an individual's ability to access, understand, appraise, and apply the breast cancer screening practice. Thus, studies that mentioned any types of health literacy towards breast cancer screening will be included in this review.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 July 2021 and was last updated on 14 July 2021 (registration number INPLASY202170042).

### INTRODUCTION

**Review question / Objective:** What is the level of health literacy towards breast cancer screening among the general population?

**Rationale:** Breast cancer is one of the most prevalent cancers that happens in the

female population globally. According to World Health Organisation, it is estimated about 2.3 million women diagnosed with breast cancer in the year 2020 globally. From the figure, about 685 000 attributed to death. Unfortunately, there is a certain population that differs in the sociodemographic such as minority group, or low socioeconomic status may not be

benefited equally from the breast cancer screening program in the countries making the prevalence of breast cancer is higher among this group of population. One of the reasons that contribute to the disparity is the level of health literacy in the population. Breast cancer treatment can be highly effective particularly when the cancer is identified at an early stage. Sadly, in Malaysia, it showed a higher percentage of women diagnosed with stage III and IV in 2012-2016 as compared to 2007 to 2011 which accounted for 47.9% and 43.1% respectively. In developing countries such as Pakistan, about 50 to 60% of women diagnosed in stage III and IV breast cancer didn't get the maximum benefit from the treatment due to the late diagnosis and management in addition to the social and cultural factors such as discrimination, religiosity and belief in herbal remedies more than the clinical treatment. Thus, it shows how important health literacy towards breast cancer screening to be empowered especially in the female population living in developing countries. The mainstay recommendation for breast cancer screening remains on the mammogram as studies have shown CBE and BSE have no benefits in reducing breast cancer mortality. However, taking into consideration in developing countries where the resources are limited both breast screening methods are useful due to the easiness, low cost, non-persistent and harmless intervention. Health literacy specific for breast cancer screening is still scarce. Many studies and reviews were done on health literacy and cancer screening as general or in combination types of cancer. More precise data on health literacy on breast cancer screening practice is needed to help the policymakers and health care workers able to plan a more focused educational and awareness program. This systematic review aimed to reveal the evidence about health literacy and breast cancer screening practice. The findings hopefully can be the eye-opener on the importance of health literacy of breast cancer screening components to be embedded particularly in breast cancer screening or awareness or education

program and enlighten the future research path in this topic.

**Condition being studied:** We are studying the health literacy towards breast cancer screening. Breast cancer screening can be referred to as mammogram, clinical breast examination (CBE), and Breast self-examination (BSE). Health literacy also may consist of multiple components including cultural, conceptual knowledge, print literacy, numeracy literacy, oral literacy and media literacy related to health. All the components may affect an individual's ability to access, understand, appraise, and apply the breast cancer screening practice. Thus, studies that mentioned any types of health literacy towards breast cancer screening will be included in this review.

## METHODS

**Search strategy:** This systematic review adheres to the PRISMA guidelines with no meta-analysis been conducted. Four bibliographic databases were undertaken and searched through the access of University Teknologi MARA library E-Resources from inception to 2021: Scopus, PubMed, EBSCO MEDLINE (from 1994), and Web of Science (from inception). The research question for the systematic review was performed by identifying the type of evidence needed to answer the question. The strategy uses Population, Intervention/Exposure, Comparison/Control, and Outcome (PI/ECO) format. The Population referred to "general", the Exposure used "Breast cancer screening" and the outcomes referred to "health literacy". The boolean search was performed on each database using the search term: "general" AND "breast cancer screening" AND "health literacy". The procedure of a comprehensive literature search looked at the eligibility articles, searching strategy for identification of studies, study selection, and data extraction was done. Studies included were research or original articles, published articles, published in peer-reviewed indexed journals, English language, and articles published from inception to June 2021. On the other hand, studies excluded

were interventional studies, review articles, case reports, in vivo or in vitro studies, grey literature, other languages, and non-free full-text articles. No study authors were contacted throughout the search. The process of searching strategy for identification of studies involved a three-stage process. The first stage was the analysis of the text words contained in the titles and abstracts and of the index terms used to describe each article. In the second stage, a Boolean search was conducted using the identified keywords of the selected databases refining through title and abstract searching. In the third stage, the reference lists of key articles were searched for additional studies. Study screening and selection of potentially eligible studies were conducted by two independent researchers to establish inter-rater reliability and avoid data entry errors. Based on the agreed inclusion and exclusion criteria, the titles and abstracts of the eligible studies retrieved using the above mentioned search strategy were downloaded into the reference manager tool, Endnote software. When all researchers agreed on a suitable title and abstract, the full text of the article will be retrieved. Duplicated articles will be deleted. The characteristics, information and report findings from the published articles included were extracted onto a data extraction form that key into Microsoft Excel. Lists of included studies were created. All the data were sought at the individual level. Data extraction was independently cross-checked throughout the documentation.

**Participant or population:** General.

**Intervention:** Breast cancer screening.

**Comparator:** Nil.

**Study designs to be included:** Observational studies.

**Eligibility criteria:** Research or original articles, published articles, published in per-reviewed indexed journals, English language, and articles published from inception to June 2021.

**Information sources:** Four bibliographic databases were undertaken and searched through the access of University Teknologi MARA library E-Resources from inception to 2021: Scopus, PubMed, EBSCO MEDLINE (from 1994), and Web of Science (from inception). no trials registries, grey literature, or contact with authors were done.

**Main outcome(s):** The primary outcome of this systematic review Health literacy towards breast cancer screening. Details of health literacy towards breast cancer screening will be reported including the percentage, p-value, odd ratios, and the 95% confidence interval.

**Additional outcome(s):** Nil.

**Data management:** Based on the agreed inclusion and exclusion criteria, the titles and abstracts of the eligible studies retrieved using the above mentioned search strategy were downloaded into the reference manager tool, Endnote software. When all researchers agreed on a suitable title and abstract, the full text of the article will be retrieved. Duplicated articles will be deleted. The characteristics, information, and report findings from the published articles included were extracted onto a data extraction form that key into Microsoft Excel. Lists of included studies were created. All relevant articles were manually coded in the spreadsheets and described in evidence tables. The electronic spreadsheets were utilized to import the data into excel form for data analysis. The data were sought at the individual level. Data extraction was independently cross-checked throughout the documentation.

**Quality assessment / Risk of bias analysis:** The two researchers performed the critical appraisal to assess the study quality and bias. which encompass issues such as the appropriateness of study design to the research objective. The Joanna Briggs Institute (JIB) depending on the study designs of the retrieved papers were used to assess the quality and bias. Any disagreements between the researchers during the review process were resolved

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through discussion and consensus. The study quality and bias are discussed in detail in the result and discussion section. The risk of bias and methodological quality of the studies was assessed using the Joanna Briggs Institute (JBI) depending on the study designs of the included papers. From the JBI, there are eight points that the researchers considered evaluating the level of bias in the studies such as the clarity of the inclusion criteria, the clarity of the study subjects and setting, the validity and reliability of the exposure measured, the objectivity of the measurements used, the ability to identify the confounding factors, the validity and reliability of the outcome measured, and the appropriateness of the statistical analysis used. The more it complies with the points stated, the lower risk of bias and the higher the quality of the study is.

**Strategy of data synthesis:** Data were analyzed using descriptive statistics. The numerical outcomes were analyzed using mean and standard deviation. The categorical outcomes were analyzed using frequency and percentage. The statistical analysis performed using Statistical Package of Social Science Version 27. Since there was no meta-analysis done in this review, therefore, no sensitivity analyses or sub-analysis were done in this study. Similarly, there was no assessment of the variability within studies or between studies.

**Subgroup analysis:** Nil.

**Sensitivity analysis:** Nil.

**Language:** English.

**Country(ies) involved:** Malaysia.

**Other relevant information:** Nil.

**Keywords:** health literacy, breast cancer screening, systematic review, mammogram, CBE, BSE.

**Dissemination plans:** This is part of the assignment project for the study module Non-Communicable Disease in the

Coursework for Doctor of Public Health. Also, researchers are planning to publish the systematic review in any Q1 or Q2 journal (undecided yet) depending on the acceptance of the journal later.

**Contributions of each author:**

Author 1 - Izzaty Dalawi - conceived the idea, extracted, and analysed the data, drafted the manuscript.

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