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Protocol for a systematic review and meta-analysis on intention to screen for cervical cancer and predictors among women of reproductive age in Ethiopia

Begetayinoral Kussia Lahole ,[1] Tesfahun Simon,[1] Wondimu Ewunetu,[1] Wondafrash Kussia[2]

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[1]Department of Midwifery, College of Medicine and Health Sciences, Arba Minch University, Arba Minch, Ethiopia
[2]School of Anesthesia, College of Health Sciences and Medicine, Wolaita Sodo University, Wolaita Sodo, Ethiopia

Correspondence to
Mr Begetayinoral Kussia Lahole; begetayinoral.kussia@amu.edu.et

ABSTRACT

Introduction The incidence and fatality rates associated with cervical cancer are continuously decreased by cervical cancer screening. However, in underdeveloped nations such as Ethiopia, very few women have undergone cervical cancer screening. There is a scarcity of nationally summarised data in Ethiopia on women's intention to use cervical cancer screening and its determinants. Therefore, this protocol describes a planned systematic review and meta-analysis that will evaluate the intention to use cervical cancer screening and its predictors among women of childbearing age in Ethiopia.

Methods and materials The online databases of EMBASE, PubMed, CINAHL, Web of Science, Cochrane Library, HINARI, Google Scholar, and African Journals online databases will be comprehensively searched from 1 January 2014 to 31 December 2023. The Joanna Briggs Institute quality rating instrument will be used to assess the quality of the included studies. The STATA V.17 statistical software will be used for data analysis. The inverse variance (I^2) and Cochran Q statistics will be used to examine the heterogeneity between studies. A random effects model will be used to calculate the pooled prevalence of intention towards cervical cancer screening with a 95% CI. To determine publication bias, a funnel plot, the Egger and Begg test, and a 5% significance level will be used.

Ethics and dissemination There is no need for ethical approval. The results will be disseminated to academic beneficiaries and the public.

PROSPERO registration number CRD42023440970.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Before this study, there were no systematic reviews on the intention to use cervical cancer screening among Ethiopian women. Existing evidence suggests various barriers and facilitators, such as cultural factors and accessibility issues, which impact screening acceptance.

WHAT THIS STUDY ADDS

⇒ This study offers a systematic review and meta-analysis to comprehensively synthesize the existing evidence on the intention of cervical cancer screening in Ethiopia. It quantifies factors that influence screening uptake, providing a robust understanding that was not previously available.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings guide future research directions, inform targeted interventions to improve screening rates and aid policy-makers in the effective allocation of resources to combat cervical cancer in Ethiopia and similar contexts.

INTRODUCTION

Rationale

Cervical cancer is the most common type of cancer. It is caused by the human papillomavirus (HPV), which is transmitted through sexual intercourse.[1] Today, there are more than 150 distinct HPV varieties known, especially in those between the ages of 22 and 25.[2] About 50% of cervical cancer cases have been related to HPV 16 and 18, known to be high-risk HPV types.[3] Despite the fact that it contributes to the morbidity and death of these women, it is one of the most treatable and preventable types of cancer, as long as it is identified early and successfully controlled.[4] Other risk factors include early initiation of sexual activity, multiple sexual partners, prolonged oral contraceptive use, immunological suppression and smoking.[5]

According to research, there are 24.6 million patients with cancer worldwide. In 2020, there were 604 000 new cases of cervical cancer and 342 000 deaths of the estimated new cases.[6 7] The incidence, mortality and prevalence of cervical cancer worldwide were 7.9%, 7.5% and 9%, respectively, according to a WHO report of 2015. The vast majority (90%) of these cases occur in developing countries.[6]

There were 715 000 new cases of cancer and 542 000 cancer-related deaths in Africa.[8] Compared with women in high-income countries, women in low-income and middle-income countries had a 35% higher average lifetime risk of cervical cancer.[9]

In developing nations, cervical cancer is more common in women over 50 years of age, but it is also becoming more prevalent in women between the ages of 15 and 49.[10] In sub-Saharan Africa, the prevalence was 27.6%, the death rate was 23.2% and the incidence rate was 25.2%. In Ethiopia, the rates of cervical cancer incidence, death and prevalence of cervical cancer were 17.3%, 16.5%, and 18.2% respectively.[11] Twenty-three percent of Ethiopian women are expected to develop cervical cancer per 100 000 persons each year.[12]

According to reports, cervical cancer is diagnosed in Ethiopian adult women, second only to breast cancer.[13–15] There are 20.9 million women in Ethiopia who are 15 or older and at risk of developing cervical cancer. Before the 2009 introduction of the Addis Tesfa Initiative, Ethiopia had no regular access to cervical cancer screening and treatment for precancerous cervical lesions.[16] Once it has progressed to invasive cervical cancer, the cost of cervical cancer is remarkably high. Cervical cancer screening is done only 23% of the time in most developing nations, according to different reports.[9 17 18] One of the key elements of health promotion efforts that can reduce morbidity and mortality by more than 80% is cervical cancer screening. However, in Ethiopia, the prevalence of cervical cancer screening is 0.6% for all women aged 18–69 years, 1.6% in urban areas and 0.4% in rural areas.[3 19]

Together with rapid therapy for early cervical lesions, visual inspection with acetic acid (VIA) provides a rapid and affordable screening technique. It has an average sensitivity and specificity. The test can be performed by nurses or health professionals and the findings are immediate. In many low-resource where it is difficult to maintain high-quality cytology programmes, VIA is practical.[20] A large-cluster randomised controlled trial conducted in rural India found that a single HPV screening can reduce cervical cancer mortality and new cases by 50%.[21] To eliminate cervical cancer in women worldwide by 2030, the WHO created a global strategy. To address these issues, 90% of women should receive the full HPV vaccine before the age of 15, 70% of women between the ages of 15 and 45 should be screened and 90% of those who are found to have the disease will receive treatment and care.[4]

Our country, Ethiopia, also adopted the WHO's guideline that women aged 30 and older begin cervical cancer screening at least one to 3 years of age using a see-and-treat strategy. However, regardless of age, it is recommended that sexually active and HIV-positive women undergo a screening every 3 years (from the time of HIV diagnosis). An activity to increase knowledge about cervical cancer prevention, affect social norms and encourage behaviour change among targeted individuals or subpopulations to prevent cervical cancer is the behavioural change communication intervention.[22]

According to the theory of planned behaviour (TPB), attitudes towards behaviour, subjective norms and perceived behavioural control have an indirect influence on a person's behaviour in addition to direct influences from intention.[23] According to a meta-analysis, the TPB explained 27% of the variance in behaviour across a wide range of actions and 39% of the variance in intentions.[24] TPB is useful in predicting the intention of cervical cancer screening intention, according to evidence.[25–29] Despite the efforts made, the results of a study conducted in different parts of Ethiopia revealed that cervical cancer screening programmes were not widely used.[30–33] Some of the reasons people did not use the screening service included a low level of intention, lack of understanding, a negative attitude towards cervical cancer screening and an incorrect understanding of the severity of the disease.[22 34–36] It will be feasible to considerably lower the incidence and mortality of cervical cancer by increasing the level of intention towards cervical cancer screening. This systematic review and meta-analysis is therefore designed to evaluate the intention of all eligible Ethiopian women to accept cervical cancer screening, as well as its predictors.

Objectives

Primary objective

To determine the pooled prevalence of intention to screen for cervical cancer and its predictors among women of reproductive age in Ethiopia.

Secondary objectives

- Identify relevant grey and peer-reviewed literature describing intention to screen for cervical cancer and its predictors among women of reproductive age in Ethiopia.
- Assess the level of intention for cervical cancer screening among women of reproductive age in Ethiopia.
- Identify the factors associated with women's intention to screen for cervical cancer in Ethiopia as described in the literature.
- Collect key findings and recommendations on the intention to screen for cervical cancer from studies conducted in Ethiopia between 1 January 2014 and 31 December 2023.

METHODS AND ANALYSIS

Guidelines and registration

This protocol was written in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols declaration[37] (online supplemental material 1).

The systematic review has been registered with PROSPERO; the registration number is CRD42023440970.

Patients and public involvement

This study excludes patients and the general public.

Eligibility criteria

The following inclusion and exclusion criteria will be applied to retrieve the relevant articles.

Population

Any study assessing the prevalence of intention to screen for cervical cancer screening and associated factors or either of these among women of childbearing age in Ethiopia will be included in the review process.

Intervention

There will be no interventions or exposures investigated.

Context

Both community-based and facility-based observational studies on the intention for cervical cancer screening and its associated factors in Ethiopia will be included.

Objective/outcome

The primary outcome of this review is the prevalence of women's intention to screen for cervical cancer. Secondary outcomes will be predictors of intention to screen for cervical cancer screening in Ethiopia.

Study design

All observational studies (ie, cross-sectional, case–control, and cohort) will be included in the review.

All published and unpublished articles carried out in Ethiopia and that assessed the proportion of intention towards cervical cancer screening and its predictors from 1 January 2014 to 31 December 2023 will be included in the review. No language limitations have been applied. Whereas population case studies, surveillance information, abstracts from conferences, journals with partial access and unreported outcomes of interest will be excluded from the review. Articles will be selected and evaluated for inclusion by two different reviewers using the title, abstract and full text. Consensus among reviewers will be reached to settle any disputes that arise during the selection process. Then, considering the prior eligibility, the full text of the chosen articles will be examined. Only the full-text article will be kept in the case of duplication.

Information sources and search strategy

The literature search will start from 1 January 2014 to 31 December 2023 in the following databases: EMBASE, PubMed, CINAHL, Web of Science, Cochrane Library, HINARI, Google Scholar, and African Journals online. Furthermore, Google hand searches will be used primarily for unpublished studies. In order to find other papers, a search will also be done for the reference list of the already retrieved studies. The Population Exposure, Comparison and Outcomes search algorithm will be used to find papers. For the online database search, the keywords intention, cervical cancer, screening, prevalence, predictors, women of reproductive age, determinants, associated factors and Ethiopia will be used. Using the Boolean operators "OR" and "AND," the search terms will be combined (online supplemental material 2).

Selection process

Identified studies will be exported to a citation manager endnote. Then two reviewers will independently evaluate the titles and abstracts of the selected studies. Consensus among reviewers will be reached to settle any disputes that arise throughout the selection process, with discussion with a third review author if necessary. Then, considering the prior eligibility, the full text of the chosen articles will be examined. Only the full-text article will be kept in the case of duplication.

Data extraction

All essential data will be extracted using a standard data extraction format. The primary author, publication year, prevalence, assessment method, study design, study region, average age of the participants, response rate, sample size, and selected predictors of intention for cervical cancer screening will be the parameters retrieved. In the event of missing data, incomplete reports or any uncertainty, reviewers will email the authors of the article to obtain details. Consensus among reviewers will be reached to settle any disputes that arise during the selection process.

Quality analysis and risk of bias in individual studies

The quality of the included articles will be evaluated by two independent reviewers. The Joanna Briggs Institute quality rating instrument, which has been modified for prevalence studies, will be used to evaluate the quality of the included studies.[38] Cross-sectional studies will be evaluated using the following criteria: (1) inclusion criteria, (2) study subject and setting descriptions, (3) valid and reliable exposure measurements, (4) objective and standard criteria used, (5) identification of confounders, (6) confounder handling strategies, (7) outcome measurement and (8) appropriate statistical analysis. When a study meets 50% or more of the quality evaluation checklist criteria, it will be considered low risk.[38 39] To reduce the likelihood of reporting and publication bias, we will check a variety of sources (such as exploring the grey literature, citing relevant studies and reviewing pertinent reviews). If there is bias, a meta-analysis may not be performed and the variation between included studies will be reported. To determine publication bias, a funnel plot, Egger and Begg test, and a 5% significance level will be used.[40 41]

Statistical data analysis

Tables will be created to summarise the retrieved data which will present the primary author of the study, the publication year, the prevalence, the assessment method, the study design, the study region, the average age of the participants, the response rate, the sample size, and the

selected predictors of intention towards cervical cancer screening. A narrative synthesis will be made based on the summarised table.[42] The STATA V.17 statistical software will be used for data analysis. The inverse variance (I^2) and Cochran Q statistics will be used to examine the heterogeneity between studies. The heterogeneity will be classified as low, moderate or severe using cut-offs of 25%, 50%, and 75%, respectively.[43 44] If there is significant heterogeneity between studies (I^2>70%, p=0.05), a random effects model will be used to calculate the pooled prevalence of intention towards cervical cancer screening with a 95% CI. In accordance with the study's design, the population's characteristics, and the study area, subgroup analysis will also be carried out.[40 41]

Confidence in the cumulative evidence

The Grading of Recommendations Assessment, Development and Evaluation[45] system will be used to determine the level of confidence that we have in the findings and our recommendations.

Ethics and dissemination

No ethical clearance is needed for this review.

Our review will be published in an open-access journal and its results will be presented at different conferences. The datasets will be made available to the larger research community and a workshop will be arranged with important stakeholders.

Contributors BK conceptualised and designed the protocol. In addition, BK is the guarantor responsible for the integrity of the work as a whole from inception to the published article. BK, TS and WE developed the search strategy and will carry out the search. BK, TS and WE provided critical appraisal regarding the design of the review. BK wrote the first draft of the protocol. All the authors read and approved the final version of the protocol.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. All data relevant to the study are included in the article or uploaded as online supplemental information.

ORCID iD

Begetayinoral Kussia Lahole http://orcid.org/0000-0002-7986-6442

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