

Review Of Cross-Sectional Study About Knowledge And Attitude Towards Cervical Cancer Screening Among Female Refugees: Jordan

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ABSTRACT

Objectives: Cervical cancer has been considered as a major health challenge globally because it affects women in low and middle-income countries, including Jordan. The scoping review of this study discussed the identification of attitudes, knowledge, and screening methods for CC among female refugees in Jordan in order to reduce inequality and enhance cancer outcomes.

Methods: The electronic databases (Embase, PubMed, Global Health, Medline, and PsycINFO), citation lists, and different literature studies were searched for published articles up to July 2023. The screening of articles was performed against exclusion or inclusion criteria and data were extracted from eligible studies.

Results: A total of 150 articles was yielded through search and included them in this scoping review. The knowledge levels of female refugees for cervical cancer were varied extensively. There was a poor understanding of behaviours about screening and misconceptions regarding the symptoms and risk factors of cervical cancer. The relationship between positive attitudes for CCS was resulted with the enhanced knowledge of screening and high education levels. The awareness campaigns would facilitate the better rate of CCS with the higher knowledge levels.

Conclusion: It was evident the low level of knowledge and screening method among female refugees in Jordan for cervical cancer that indicates to focus more on enhancing the awareness programmes across the country. Future research should consider exploring the awareness of CC and screening interventions to support the diagnosis of cervical cancer.

Keywords: Cervical Cancer Screening (CCS), Cervical Cancer (CC), Human Papillomavirus (HPV), Pap Smear, Jordan, Female Refugees, Knowledge, Awareness, and Attitudes.

1. Introduction

Cervical cancer is having a high mortality rate as it is the global fourth widespread women malignancy disease. These cases are mostly relevant to the human papillomavirus (HPV) infection that makes changes in the cellular system of the human body and leads to cancer [1]. However, a cervical smear test can be used for screening these changes to prevent or detect cancer development in earlier stages. The conventional test of Papanicolaou has been recommended for women to be exploited as a routine screening test for detection of cervical cancer based on the WHO guidelines [2]. Moreover, it has been suggested to use co-testing with HPV testing and Pap smear every five years for cervical cancer. Pap smear testing is used for women whose age range between 21 to 30 years owing to the better sensitivity and HPV testing is developed for female whose age range between 30 to 65 years [3]. Furthermore, the American Cancer Society opined that cervical cancer screening should perform for all women at the age of 21 [4]. Thus, these screening tools of cervical cancer have declined the mortality rates significantly.

The studies showed that there were reports of lower rates for cervical cancer screening in developing countries than the developed countries. It led to 85% of cervical cancer deaths accounted in developing regions [5]. Moreover, variations in screening rates were observed for different origins of countries. For example, Los Angeles with immigrants' study showed that lower screening rates of 52 to 56% were recorded for immigrants from China, India, Vietnam, Cambodia, and Laotia while higher screening rates for women 65 to 75% were reported for Korean, Japanese, and Filipino immigrant women [6]. The studies showed higher mortality rates for Arab migrants and refugees due to the fewer examinations of a gynaecological system for women compared to the native population which causes delayed diagnosis [7].

The guidelines of the National Comprehensive Cancer Network (NCCN) – 2019 illustrated treatment options for early-stage cancer stage (I-II), including concurrent chemoradiation and surgery that can help to achieve 80% of patient care [8]. However, the treatments rely on the stage of the disease and surgery is used only for the preservation of fertility, and smaller lesions such as IB1, IIA1, and IA based on the International Federation of Gynecology and Obstetrics (FIGO). The treatments such as radical surgery and radiotherapy are suitable for cervical cancer stages IB-IIA as they provide similar survival outcomes. The treatment choices for advanced disease stages like II, III, IB2, and IVA included a combination of fluorouracil and cisplatin or cisplatin alone with concurrent chemoradiation [9]. The national screening program is not well developed in Jordan for cervical cancer. Thus, it is essential to create awareness among women about the cervical cancer (CC) to reduce its mortality and morbidity.

Some studies of cervical smear test knowledge for women in Jordan revealed that the screening process for cervical cancer was carried out for 31.2% of women out of 500 people based on the cross-sectional study. The estimations of the American Cancer Society reported that 4290 women approx. were died due to invasive cervical cancer, which would be diagnosed with 14,480 cases of CC in 2020 [10]. However, screening has been an effective method for reduction of mortality rates in the Jordan region. In recent years, a study was conducted and reported that 53% of women were not being screened in Jordan [11]. Furthermore, the qualitative studies with review-based investigations relevant to cervical cancer screening concluded that the significant barriers to efficient screening included the higher service cost, fear of cancer diagnosis, discourtesy of healthcare staff for patients, the scarcity of privacy and comfort at healthcare centres, and a lack of available and accessible healthcare quality services in Jordan and developed countries [12]. The designing and implementation of a screening program is required to consider the factors that impact the adherence and women participation in the screening programs. Therefore, a tailored program of screening for cervical cancer fosters the women to seek screening by reducing the burden of treating the disease.

1.1 Objectives

There were no studies conducted on Jordan refugees to determine the behavioural patterns, beliefs, and knowledge for cervical cancer despite several studies carried out among various Jordanian women groups. The major objectives of the study are included:

- To assess the knowledge of risk factors, symptoms, and smear-seeking practices for cervical cancer among women refugees.
- To determine the obstacles and facilitator for implementing the screening process for cervical cancer in Jordan.
- To develop the strategies for increasing awareness about risk factors and screening of cervical cancer among the women Jordan refugees.

These objectives would be of crucial value and pivotal for identifying the difficulties and improving the efforts of cervical cancer screening while proposing different strategies to increase awareness of screening and reach most women who had not known about or not screened for cervical cancer.

2. Literature Review

Over a half million new cases are increased globally every year for cervical cancer. In United States (US), 2012 reports evident that the incident rate was 8.1 per 100,000 women for cervical cancer and a rate of 15.7 was observed for low and middle-income countries like Jordan [14]. The successful treatments existed for earlier detection of invasive cancers and the detection of pre-cancerous lesions could become possible with the implementation of screening tests of cervical cancer through the low-cost procedures. In despite the evidence-based screening options, the population has been affected by cervical cancer in resource-limited settings worldwide. However, the appropriate methods with clear guidelines can be improved cancer control through cervical cancer screening and HPV vaccination programs for healthcare service interventions (Figure 1) [14]. It is not adequate to develop the evidence-based programs for screening of cervical cancer that leads to the increased incidence rates and mortality, specifically in the resource-limited settings of countries.

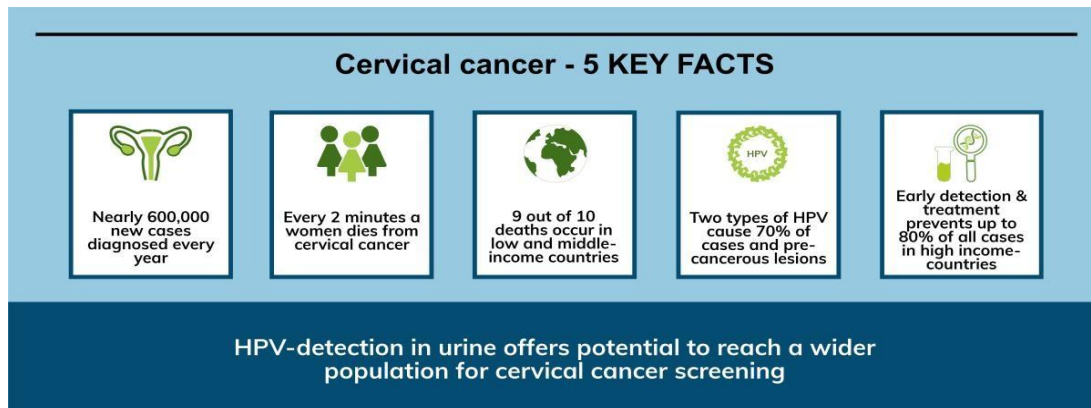


Figure 1: Facts about Cervical Cancer (Source: Novosanis (2022) [15]).

High-income countries (HICs) are effective in implementing cancer screening services and resource-limited settings of regions have been evident the reduced cervical cancer deaths with the use of HPV screening based on the Prioritized Research Agenda 2011 of WHO for Prevention and Control of Non-communicable Disease [16]. Some reports demonstrated the sustained implementation of programs for cervical cancer screening in LIMCs. Moreover, the research study examined the barriers of cervical cancer screening under particular contexts and suggested that the successful implementation of programs is required the adaption of evidence-based interventions in various settings. A scoping review study regarding cervical cancer in LMICs disclosed that the current literature studies of cervical cancer focused on prevention and detection without consideration of implementation strategies to improve awareness among women [17]. Therefore, specific suggestions for implementation methodologies of awareness are developed relevant to screening and risk factors of cervical cancer.

2.1 Cervical Cancer Screening

It is appropriate to develop and implement different techniques of evidence-based cervical screening techniques for diverse contexts. The pre-cancerous lesions and early-stage dysplasia can be identified by employing cytologic screening with Papanicolaou (Pap) based on biopsy and colposcopy follow-up under high-resource settings (Figure 2). However, the specialized preservation of specimens and advanced expertise of cytopathologists are required for cytologic screening. The detection of later-stage pre-cancers is possible with the visual inspection methods that provide adequate specificity and sensitivity [18]. Thus, the treatment methods for these types of cancers are curative modalities with visual inspection screening and loop electrosurgical excision procedure (LEEP) or cryotherapy freezing under low-resource settings. The highest sensitivity is being resulted for human papillomavirus (HPV) testing for high-grade lesion detection through self-sampling or clinician-sampled techniques [19]. The primary screening can be performed using HPV testing integrated with visual inspection or cytology. This would result in the poor screening coverage for cervical cancer despite the implementation of various screening modalities appropriately.

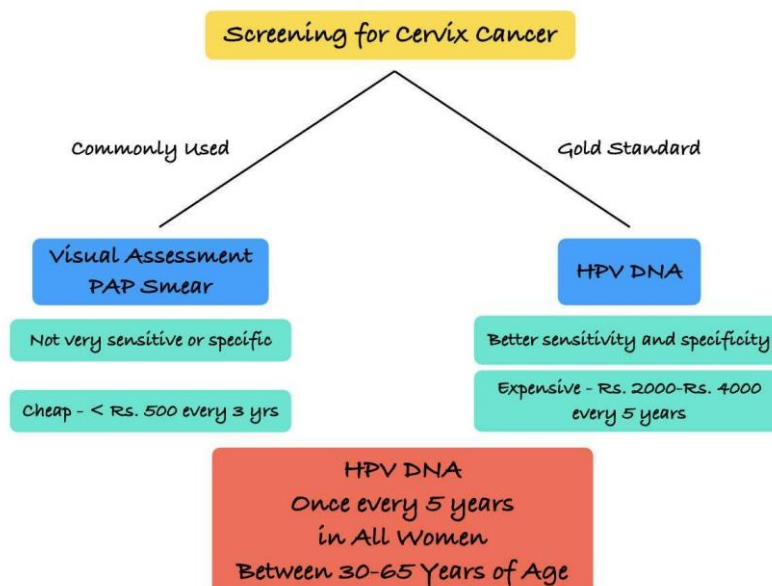


Figure 2: PAP-Smear Testing and HPV Testing for Cervical Cancer (Source: Jhankari, 2022 [20]).

2.3 Obstacles or Barriers to Implementing the Cervical Cancer Screening Services

The thematic analysis of literature studies revealed that barriers to uptake the CC screening into five categories, including health system barriers, cultural barriers, social barriers, personal barriers, structural barriers, and health system barriers [21]. However, these barriers are interconnected and operated within or across the levels of the socio-ecological model (Figure 3).

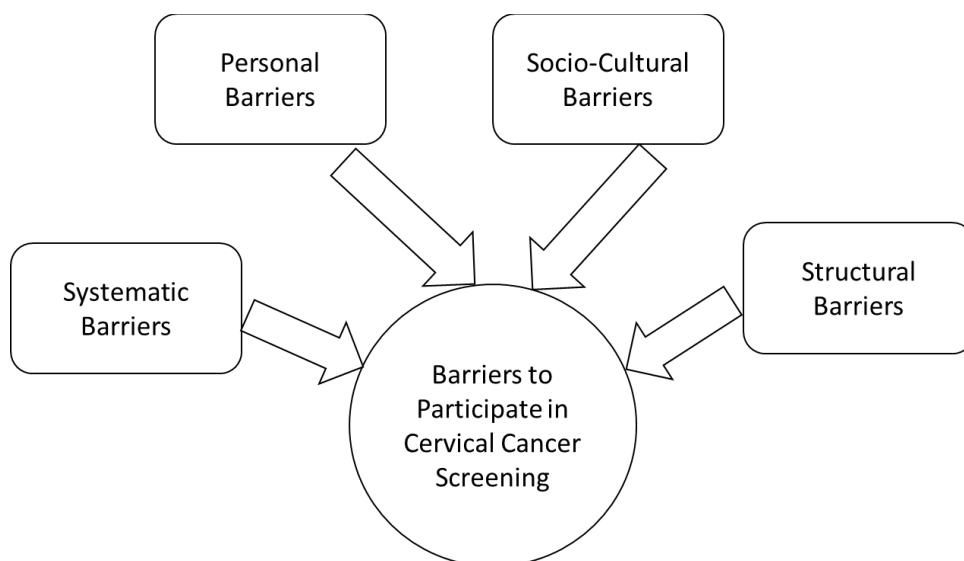


Figure 3: Barriers or Obstacles in Participating the Cervical Cancer Screening (CCS) (Source: self-Created).

2.3.1 Personal or Individual Level Barriers

Many studies reported the barriers to CC screening are lack of awareness or knowledge about CC and its screening advantage from the individual perspective. Another study opined that fear of receiving positive results from screening and misconceptions about screening and its process were other impacting barriers. Moreover, women reported the feared pain of the screening and misconceptions like possible damage or harm to the cervix during the screening. The South African women were mostly fear of HPV testing for screening process for cervical cancer while most women from Ethiopia thought of painful of HPV with self-sampling. The reports from Asia, Africa, and South America showed that 33% of women felt embarrassed to undergo pelvic examination or screening processes [22]. The competing responsibilities and priorities faced by women irrespective of their employment status or geography led to the causing of limitations to attend the screening.

2.3.2 Social Barriers

Social barriers to cervical cancer are relevant to the negative perceptions of the community about the screening process. Some studies showed that the stigma of cervical cancer is being considered as a terminal disease or fear of death and other studies disclosed that women thought of sexual transmission as the cause of stigma [23].

2.3.3 Cultural or Religious Barriers

The studies revealed that traditional or religious prohibitions and causes of women were not being screened. In Jordan and South Africa, the reports indicated that there is a mistrust of people towards Western medicine and clashes could become possible between Western and traditional views of screening. Some studies also showed that 21% of men were not approved for cervical cancer screening [22]. Like other health issues, priority is not given for women's health problems like reproductive and sexual health.

2.3.4 Health System Barriers

These barriers included a lack of promotion of screening, lack of knowledge among healthcare workers regarding cervical cancer, lack of capacity, healthcare workers and health services with poor attitudes. However, the lack of facilities involved a shortage of materials and equipment, and limited healthcare facilities. The limited screening uptake is caused due to the language and communication barriers between patients and healthcare workers [24]. Another barrier was long wait times at healthcare facilities in South Africa. Furthermore, healthcare workers are often not successful in promoting or recommending cervical cancer screening for women during consultations.

2.3.5 Structural Barriers

These types of barriers are associated with screening costs and travel costs. However, screening costs were barriers in all countries, including Jordan. The additional costs are related to travel costs and poor transport

systems to reach the screening facilities [22]. Other structural problems are included low socioeconomic status and low education levels among women who live in limited-resource settings.

Based on the above discussions, literacy of cancer plays a key role in controlling or preventing cancer. The barriers to cancer prevention will be removed by improving the awareness about risk factors among people that can enhance cancer-preventative practices and cancer screening behaviours. It is crucial to support the intervention and screening methods with evidence through the determination of awareness among female refugees about cancer in Jordan.

A scoping review was conducted in this study for attitudes and awareness of female refugees towards CC screening. However, a scoping review is used to evaluate and provide the summary of research data. The review has focused on determining the objectives of examining and mapping the knowledge levels and attitudes among Jordanian female refugees to assess the use of screening methods for CC. Therefore, the research findings would contribute to developing the framework of strategies and interventions for improving outcomes of CC and reducing inequalities for women.

3. Methods

Based on the relevant methodological guidance, the scoping review was performed and results were reported using the guidelines of Preferred Reporting Items for Systematic Reviews and meta-analysis extension (PRISMA) [25].

3.1 Strategy for Searching Information Sources

The primary search terms were identified based on a search, for example the index terms and text works with the abstract and title were analysed. However, the following search keywords or terms were used, such as Jordan, cancer, carcinoma, tumour, human papillomavirus, HPV DNA, visual inspection, or Pap smear test. These relevant studies published in English were searched systematically based on different electronic databases like PubMed, Embase, Global Health, and PsycINFO. The publications up to 2023 were included without imposing constraints on date. Google Scholar was used for literature searches and reviewed eligible studies with citations and references through the method of snowball sampling for relevance of additional studies. Moreover, the studies which could review, study protocols or editorials, and not be disaggregated for female participants were eliminated from the research. There were no limitations included in the study design for collecting the data from numerous sources and determining the nature, range, and extent of the available research topic. The inclusion and exclusion criteria included the summary of the population,

3.2 Scoping Review

The articles were identified in the final search of databases based on Mendely Reference Manager by removing the duplicates. The primary screening of articles was done based on their title and abstracts. Then, a further screening process was performed followed by applying the inclusion and exclusion criteria, including female refugees of all ages, cervical cancer, Jordan, and knowledge or awareness, attitudes, and screening practices and reading complete articles (Table 1).

Table 1: Inclusion and Exclusion Criteria

	Included	Excluded
Problem	Cervical Cancer	Journals or Articles relevant to other cancer types
Population	Female refugees of all ages who living in Jordan	Non-living women refugees in Jordan
Interest	Knowledge, attitudes, awareness, and screening practices	Pathological subtypes of cervical cancer in Jordan
Context	Jordan	Countries outside Jordan

3.3 Data Extraction

The data was extracted after reviewing multiple articles and testing the validity. Based on the published year, country, purpose of study, methodology, characteristics of population, and study outcomes, data were obtained relevant to the knowledge, attitudes, and practices for CC. Further, the data included the qualitative or quantitative synthesis, knowledge levels of CC (risk factors and treatment options), and a percentage that had heard about CC, sources of information, attitudes towards CC (barriers of screening) and associated factors with knowledge and attitudes.

4. Results

The paper selection was conducted based on the PRISMA diagram of the process (Figure 4). However, the search returned 150 citations and 100 reports were screened via their titles and abstracts after removing the duplicates. Further review was obtained of the full texts of 50 citations and 41 studies were not included owing to the reasons mentioned in the above Figure 4. Therefore, this scoping review included a total of 9 articles [26], [27], [28], [29], [30], [31], [32], [33], and [34]. All studies were published between 2003 and 2023, out

of which 50% of studies were within the last five years. These nine studies focused on cervical cancer screening with the evaluation of knowledge and attitudes among female refugees in Jordan.

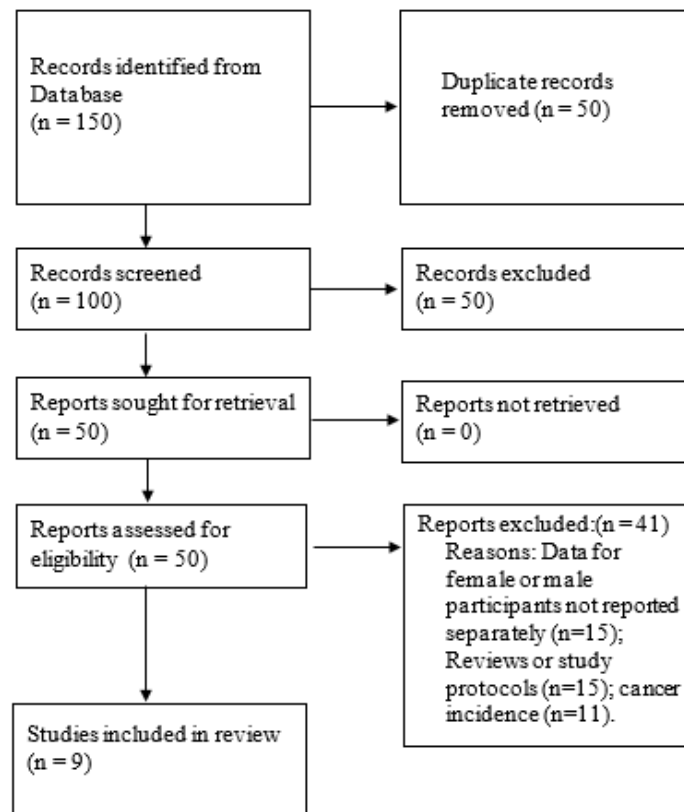


Figure 4: PRISMA Diagram for Study Identification and Selection (Source: Page et al., 2021 [35]).

A cross-sectional quantitative design has been involved in many studies; two studies used qualitative studies through in-depth interviews and focus groups. Moreover, some studies were excluded since they were not published as journals or peer-reviewed articles. The sample sizes for these studies were considered ranging from 1 to 1420. In the studies of cervical cancer, the total number of women was considered up to 14,689. Both rural and urban settings were included although all studies were not specified. The mean age range was 17 to 65 years for participants while the literacy levels ranged from 4% to 66% based on the reported findings in 20 studies (80%). The participants for the study included CC survivors, visitors to health clinics, teachers, housewives, students, and gynaecological in- and outpatients.

Most of the studies included investigations about clinician or researcher-administered semi-structured surveys (n=6, 67%) and self-administered surveys or face-to-face interviews (n=3, 33%). The scores of knowledge, awareness, or attitudes were reported in ten studies that focused predominantly on cervical cancer. The medical records were reviewed in one study and three studies considered the discussions about Pap smear tests for a woman.

4.1 Knowledge about Cervical Cancer and Symptoms

The selected studies of the nine papers related to the knowledge and attitudes of females concerning CC were investigated. The female refugees with 18.4% had heard about cervical cancer [26]. The highest percentage for improved uptake of cervical cancer took place among 359 participants who were recruited for an intervention study of the community. Moreover, the studies showed varied symptoms and signs of CC. However, the study demonstrated that the female refugees were aware about the symptoms of CC and knew that causes of CC is considered as an abnormal cell growth even though all women in the study heard about CC [29]. Another study determined that the participants showed poor knowledge about symptoms [28]. The reported studies recognized a low number of symptoms, such as bleeding and abnormal vaginal discharge, etc. [34]. The studies found that female refugees were aware of the symptoms and warning signs of CC, out of them 97% of participants believed that CC is a severe disease [26]. The awareness or knowledge of CC was increased through social media, government clinics, and family or friends. There was an association between increased knowledge about CC and living people in a sub-urban area, certain occupations, higher educational levels, and monthly household incomes [26] and [28]. There was no linkage between knowledge and personal characteristics like family income, age, and smoking based on the study of female students.

4.2 Knowledge of Risk Factors for CC

The knowledge regarding CC risk factors was reported in five studies. Majority of the female refugees were having good knowledge about CC risk factors with 18.4% out of 359 participants for cervical cancer upon conducting questionnaire survey (Table 2) [26]. The Syrian refugee mothers did not have adequate knowledge regarding risk factors for cervical cancer [28]. The interview study showed that 54% of women were aware of risk factors while most of them mentioned the risk factors as poor personal hygiene, multiple sexual partners, and early age of sexual debut. Moreover, the misconceptions about symptoms of CC among female refugees in Jordan were discussed [31]. A total number of 241 females were reported one or more factors for CC risks but invalid data was provided [34]. The CC survivors opined that they did not know about the causative factors for CC based on a qualitative study [33]. In addition, invalid risk factors were reported by some CC survivors, such as homemade menstrual clothes or fair skin. There were misconceptions regarding risk factors that persisted among female refugees even after participating in the awareness programme of CC.

Table 2: Characteristics of chosen Cervical Cancer Studies

Author	Study Design	Participants	Key Findings
Muhaidat et al., (2022) [26]	Cross-sectional study, Self-administered questionnaire survey	359 participants aged 19-64 who living in Jerash camp in Jordan	18.4% had knowledge about CC risk factors, 73.5% heard about cervical smear test, and 12.8% had undergone Pap smear test.
Pengpid et al., (2021) [27]	Cross-sectional Study; Health Survey	14,689 women with age ranged between 15 to 49	15.3% of women had prevalence of Pap smear cancer screening
Al-Maharma et al., (2022) [28]	Cross-sectional correlational Study; Self-administered survey	523 Syrian refugee mothers Above 25 years	91.6% Syrian refugee mothers and 95% of their spouses were not have adequate knowledge about cervical cancer testing; 66.6% of spouses of mothers did not accept the usage of condom
Urquhart et al., (2023) [29]	Cross-sectional study; Targeted self-administered questionnaire survey	670,000 Syrian refugees	Less likely to be aware about cervical cancer screening; 3.9% of women used healthcare insurance of refugees
Asali et al., (2019) [30]	Cross-sectional Study	612 women with mean age of 36 years	38% had a smear test; 61% heard about the test although they never had it before
West et al., (2017) [31]	Qualitative Study; Interview Study	Participants age ranged between 18 to 43 years	Evident the good and basic level of knowledge of CC methods; fostered the promotion of educational programmes to enhance the awareness among refugees
Pierce (2019) [32]	Demographic and Health Survey	10,105 women aged 15 to 49 years	31% of women received contraception from government of Jordan
Amiri et al., (2020) [33]	Systematic Literature Review; Narrative synthesis approach	Age ranged between 15 to 49 years	Lack of reliable knowledge and use of CC services
Quadire et al., (2019) [34]	Cross-sectional Study; Questionnaire Survey	241 Syrian refugees with mean age of 27.9	Unsatisfactory knowledge about symptoms and risks of Cervical Cancer

4.3 Knowledge and Practice of Cervical Cancer Screening

All studies analyzed attitudes and knowledge of cervical cancer screening (CCS) and practices among female refugees except for three studies [28], [31], [32], and [33]. A total number of 355 female refugees participated in the questionnaire survey and fostered the healthcare providers to educate them on CCS and Pap smear tests [24]. On the other hand, the researcher-administrated survey found out that 73.5% of women (n=355) were heard about CCS. The number of women with 39.3% had been willing to have the Pap smear test [26]. Adequate knowledge of CCS is included among women in some studies [27] and [29]. For instance, CCS is a cancer that can be prevented by detecting abnormalities or cancers that could result in cancer. In the study of patients, the lowest level of knowledge regarding CCS was determined [29]. Education was the only factor associated with the CCS knowledge level based on the studies of gynaecological outpatients [26], [27], and [34]. The knowledge about visual inspection with acetic acid was reported for CCS by one study only.

The percentage of females 12.8% mentioned that they had experience with CCS [26]. The lack of information regarding screening for CC, women's age, and marital status were the major causes reported for not having Pap smear test [26]. Additionally, the other reasons were painful procedures, fear of having CCS, side effects, low income, embarrassment or shame, lack of finances, and illiteracy. The higher CCS uptake with the associated factors involved positive family history, education programmes, urban residency, and knowledge of availability for CCS services, awareness of costs, older age, and higher education. The attitudes towards CCS were reported by studies and the positive attitudes were shown by female refugees towards CCS ranging from 15% to 39.3% [26]. The identified factors were marital status, employment, and ethnicity that associated with favourable attitudes. The perceived barriers were the lack of health services, the cost of examination, fear of knowing the results, and good health. The employment status and perception of the cost were strongly associated. The higher decision-making power and higher education levels were related with the uptake of Pap smear [27]. The higher favourable attitudes were shown by married women and illiterate towards CCS. The acceptance of using condom by spouses associated with knowledge and attitudes of CCS [28]. The study did not disclose the relevancy between CC screening rates and exposure for sexual violence in despite of the awareness of the Pap smear test [29]. Moreover, a positive influence was shown on the attitudes of women towards CCS with the implementation of community-based health education programmes [26], [29], [30], [31], and [32].

In this review, the qualitative studies discussed in-depth insights into the beliefs and experiences of female refugees regarding CCS. Based on questionnaire surveys and interviews for 359 women group with the age range of 19 to 65 years, the barriers and facilitators were examined for participation in CCS [26]. The poverty, transportation costs, fear of social exclusion, and lack of permission from their husbands or family members were significant barriers. The autonomy of female refugees regarding their health-related decisions, screening, and campaigns for public awareness to reduce stigma around CCS and CC were the major facilitators [26], [29], and [30].

The sensitive topics are sexual health and sex in female refugees of Jordan and most of them do not want to visit the gynaecologist owing to some reasons like pregnancy. The studies evident that some CC survivors who completed the treatment for two years were avoiding CCS due to the causes of embarrassment and shame [28] and [29]. Before making the diagnosis process with CC, no women had any kind of CCS and some were not willing to have CCS after completing the diagnosis in the form of physical isolation and verbal abuse [32]. The screening methods were realized with their importance for early treatment and detection due to the experiences with CC. The essential factors were also highlighted by participants of the study, such as skills and training, confidentiality and trust for CCS uptake [28], [29], [31], [32], and [33].

4.4 Knowledge and Attitudes towards Human Papillomavirus (HPV)

One of the significant causes of cervical cancer is the human papillomavirus (HPV). The knowledge about HPV infection was assessed among female refugees by nine studies. The women with the women of 57.1% had heard of HPV and 16% of women willingness to pay for vaccine [26]. Three studies have discussed the knowledge about HPV sexual transmission [28], [29], [32], and [33]. The majority of women (82.2%) had known about the infection of HPV being transmitted sexually and 20.8% had heard of HPV out of 523 women aged between 15 to 49 years [28]. The common risk factor for cervical cancer was having multiple sexual partners. The associated factors for knowledge of HPV were found that occupation type, education level, and lower income relevant to the lower knowledge levels.

5. Discussions

One of the most common cancers is cervical cancer caused in women in Jordan. It was estimated that Jordan had \$14.9 million cancer cases and 8.2 million cancer deaths that result in significant mortality and morbidity in 2013 [36]. This study discussed the review of knowledge and attitudes toward CC among female refugees specifically in Jordan. It was determined that knowledge levels including risk factors, symptoms, and early warning signs were poor in CC. Furthermore, it was shown that inadequate screening practices resulted from a lack of knowledge about the screening routines or CC disease. However, the lack of screening included common reasons, such as concerns regarding social stigma, fear of determining abnormalities, and a lack of belief for screening [26], [28], and [29]. The screening with higher rates was shown among female refugees who have higher knowledge levels, and higher education levels and participated in awareness programmes [26], [29], [32] and [33]. There was an association between positive attitudes of CCS and the knowledge and education levels and risk factors for CC.

The results depicted that the screening behaviours of CC would align with the research findings of other studies. The CCS uptake among women was improved based on the conducted meta-analysis and CC knowledge was relevant to the utilization of CCS significantly [26]. The screening practices of CC were increased with more opportunities for knowledge acquisition among women, such as employment outside the home, residency in urban areas, and higher education levels [26], [29], and [30]. Thus, the importance of interventions was highlighted to increase knowledge among women with fewer opportunities.

This scoping review highlighted the similar barriers to screening mentioned by various articles. The barriers to CCS included the discomfort of screening, dislike of pelvic exams, anxiety, financial concerns, and misconception of not necessary to conduct screening when asymptomatic. In Jordan, the major barriers were lack of knowledge of CC and no support from husbands regarding CCS services. Another report mentioned that embarrassment and lack of awareness were significant barriers of uptake of CCS [28] and [39]. The systematic review was conducted and determined the key barriers as lack of knowledge and a poor understanding of the screening role for CC in LMICs [28]. Therefore, poor CC screening practices result due to the stigmatisation of family and the community, lack of awareness and knowledge of CC, embarrassment of intimate examinations, and lack of affordable healthcare. The review also investigated the knowledge or awareness about HPV and the studies showed that most of the female refugees knew about HPV infections and caused due to sexual transmission.

5.1 Future Interventions for Cervical Cancer

The objectives of the World Health Organization (WHO) are focused on eliminating CC by the end of the century and targeted to implement the HPV vaccination and enhance the management interventions of cervical screening. The recommendation actions need to be implemented in the short term even though countries with a higher incidence rate of CC will take longer time to achieve the goals [37]. The demand for CCS through awareness programs is the major aspect of meeting the WHO targets. The primary barriers to screening uptake are low levels of knowledge and awareness. The review showed that the increment of participation in CCS was

observed among female refugees with educational programmes about CCS and CC [26], [28], and [29]. The willingness for CCS can be improved by the community-based education programmes in Jordan which means social engagement plays a crucial role in the promotion of CCS. The educational interventions showed better performance in terms of increased uptake of CCS in sub-Saharan Africa. An initiative of mobile health (mHealth) was launched by WHO in 2012 to improve disease management, control, and protection through mobile applications. The review of Zhang et al., (2020) showed the enhanced Pap smear tests' uptake with the use of mHealth [38]. Further research is required to perform the application of mHealth to improve the CC knowledge. The future studies should discuss the key role of mHealth in enhancing screening practices and awareness for CC in Jordan.

5.2 Limitations

This review includes both qualitative and quantitative studies that provide insights into the causes of low awareness of CC and target studies for future interventions among female refugees in Jordan. This scoping review did not appraise the included articles since it aimed to identify the gaps in knowledge. Some studies considered a convenience sampling technique which means we could not know whether any bias was involved in the results. Another study included the sampling of women from hospital settings for gynaecological in- and outpatient units. Therefore, these female refugees may be more health-literate as they have access to healthcare.

6. Conclusion

This review revealed that the knowledge levels and screening practices for cervical cancer were reported as lower among female refugees in Jordan. These were results due to the financial and geographical barriers. The higher rate of screening practices was evident in women if they had better awareness and knowledge about CC. The attitudes were positive towards CC screening, specifically in female refugees with higher levels of knowledge or educational interventions. That indicates a promising way to conduct future screening programmes in Jordan. The earlier detection of cancers will reduce the burden of CC in Jordan with the implementation of accessible screening methods. Further, the implementation of HPV vaccines in alignment with the targets of WHO will be useful to reduce the CC incidence rate. In conclusion, women should have access to treatment in addition to the knowledge about cancer. Future studies should explore the implementation of mHealth in enhancing the awareness of cancer among female refugees in Jordan.

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