

A SYSTEMATIC REVIEW ON FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING AMONG IMMIGRANT WOMEN

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ABSTRACT

Background: Cervical cancer (CC) is one of the most frequently occur cancers among female population around the world and thus a significant public health problem. Human papillomavirus (HPV) is one of the most prevalent sexually transmitted infections (STI) in both men and women globally and more than 100 HPV types are known. Persistent infection with high-risk HPV types is the most important risk factor for CC. Low cervical cancer screening participation among immigrant women due to screening inaccessibility of healthcare services, ineffectiveness, unaffordable medical treatments and lack of awareness of screening. The objective of this study is to systematically identify factors that influence the cervical cancer screening among immigrant women.

Materials and Methods: A systematic literature search was conducted to examine published studies on associating factors that Influence cervical cancer screening among immigrant women. Two independent researchers searched through Google scholar, PubMed/MEDLINE and Science Direct databases.

Result: A total of 11 eligible study papers were included for final analysis. Factors that influence the immigrant women to undergo cervical cancer screening services: literacy in local language (OR: 4.04, 95%CI: 1.76-9.23), married (OR: 2.50, 95%CI: 1.32-4.73), knowledge (OR: 1.19, 95%CI: 1.09-1.29). As for barriers: living in rural area (OR: 1.96, 95%CI: 1.11-3.46), discrimination (OR: 2.19, 95%CI: 1.16-4.14) and unemployment (OR: 0.56, 95%CI: 0.36-0.87).

Conclusion: Effective interventions and program are required to tackle immigrant women in order to prevent late stage cervical cancer cases. Early prevention strategy and any suspicious screen-detected lesion or cytological result can be easily channeled to appropriate diagnosis and treatment.

Keywords: Cervical cancer screening, factors, immigrants

1.0 Introduction

Cervical cancer (CC) is one of the most frequent cancers among women globally and it is a significant public health issue and threat (Sankaranarayanan R et al., 2006). Reported in 2012, about 528,000 new cases and 266,000 deaths from cervical cancer globally; in which approximately 87% of those occurred in developing countries (Ferlay J et al., 2012). The highest incidence of CC is observed in low and middle-income countries and CC is a major cause of death in term of cancer-related (Bruni L et al., 2015).

CDC in 2017 stated that human papillomavirus (HPV) is one of the most prevalent sexually transmitted infections (STI) in both men and women globally. There are more than 100 HPV types are known, in which are classified as oncogenic (high-risk HPVs) and non-oncogenic (low-risk HPVs). Most of HPV infections are transient and more prevalent among adults which subsequent to engage in sexual activity. Research found that the most important risk factor for CC is persistent infection with oncogenic or high-risk HPV types (Schiffman M et al., 2003).

Many women are not screened nor have a regular follow-up in low and middle-income countries (Aniebue PN et al., 2010). Among the reasons are low screening and health care coverage, poor participation and follow-up among immigrant population, as well as lack of quality control measures and prevention programme that may constitute possible contributors for ineffective CC screening (Hanisch R et al., 2008).

This infection can be detected early by doing a regular pap smear tests, a test that widely used to screen female population for CC through opportunistic or organized screening programs. The World Health Organization recommends that CC screening must be done to all women as most of those at risk might be asymptomatic (WHO, 2017). The effectiveness of pap smear screening in most developed countries is sufficiently evident. Health education and appropriate screening programs have proven to reduce both the mortality rates and incidence (De Peralta, 2015).

Many previous studies highlight that, there still high proportion of CC patients that had irregular or no screening done despite the effectiveness and availability of this CC screening in the most developed countries (Spence AR et al., 2014). There also few studies reported that immigrants has low CC screening participation if we compare with non-immigrant women in different regions, which indicating that the screening participation among immigrants varies within and across various ethnic groups (McDonald J et al., 2007). Few studies in developed countries shown that lower participation rates for cervical screening among immigrant women (Kelman CW et al., 2012). This might be due to a range of underlying factors, mainly socio-cultural factors and influence (Johnson CE et al., 2002).

Other than that, there are several factors account for low screening participation among immigrant women such as screening ineffectiveness, unaffordable medical treatments, , inaccessibility of healthcare services and screening programme, lack of awareness of screening and risk of cervical cancer (Sankaranarayanan R et al., 2006). Other possible barriers are poor local language proficiency, lack of trust and maltreatment issues in healthcare services, and experience of discrimination (Chen W et al., 2013). Some other barriers can be due to perceived embarrassment or anxiety by doing Pap smear test, and Female Genital Mutilation (FGM) experiences (Abdullahi A et al., 2009). Promoting factors such as being married or in common law relationship, higher education level, younger age of

migration and longer stay in the host country (McDonald J et al., 2007), having given birth, being employed, and higher number of family members, increase the likelihood of CC screening participation among immigrant women (Cerigo H et al., 2013). However, it is a challenge to have an effective prevention programme which centred solely on cytology-based test in low resource settings for a migratory group where HIV is prevalent because of the difficulties in follow-up closely and patient compliance issue (WHO, 2013). The objective of this review is to systematically identify factors that influence the cervical cancer screening among immigrant women.

2.0 Materials and Methods

A systematic literature search was conducted to examine published studies on associating factors that Influence cervical cancer screening among immigrant women. Two independent researchers searched through Google scholar, PubMed/MEDLINE and Science Direct databases using keywords: (cervical cancer test OR cervical cancer screening OR pap smear OR pap test OR papanicolaou OR colposcopy OR cervical smear OR cervical swab) AND (immigrant OR immigrants OR migrant OR migrants OR foreigner OR foreigners) AND (factor OR factors OR barrier OR barriers OR determinant OR determinants).

For exploration on the factors, the keywords used were “factor”, “factors”, “barrier”, “barriers”, “determinant’ and “determinants”. The keywords to indicate study population such as “migrant”, “migrants”, “immigrant”, “immigrants”, “foreigner’ and “foreigners” were used for comparison. For outcome, the keyword used was “cervical cancer test”, “cervical cancer screening”, “pap smear”, “pap test”, “papanicolaou”, “colposcopy”, “cervical smear” and “cervical swab”. Boolean operator “OR” was applied in combining search keywords for study population and outcomes, where “AND” was applied in the title and abstract search combining study population and outcome.

Next step was the abstracts identification. All the selected abstracts were screened by two independent reviewers. They had to discuss between them and come out with a consensus regarding the final number of full articles need to be reviewed, based on the inclusion criteria. Subsequently, all selected full articles were reviewed again by two by researchers independently. For this review, only cross sectional studies that focused on the factors that influencing on cervical cancer screening among immigrant women were selected and included in systematic review. Studies that involved trials, interventions, case control, qualitative studies, and study protocol were excluded. The outcome of the studies was the factors that influencing cervical cancer screening uptake among immigrant women.

The final data was extracted using Google form which contained few variables such as study location, year of conducted study, study population, total of respondents and findings/results of the study. Studies which were conducted before 2008, non-English written studies and duplicate studies were excluded from the study result.

Finally, our end study result and data were again reviewed by two independent researchers. All disagreements and confusions were resolved through gentle discussion and consensus between both researchers. As for the quality of study methodology of selected studies, qualitative assessment tool for quantitative study by Effective Public Health Practice Project

(EPHPP) was applied (Armijo et al., 2012). The flow process of review was shown in Figure 1.

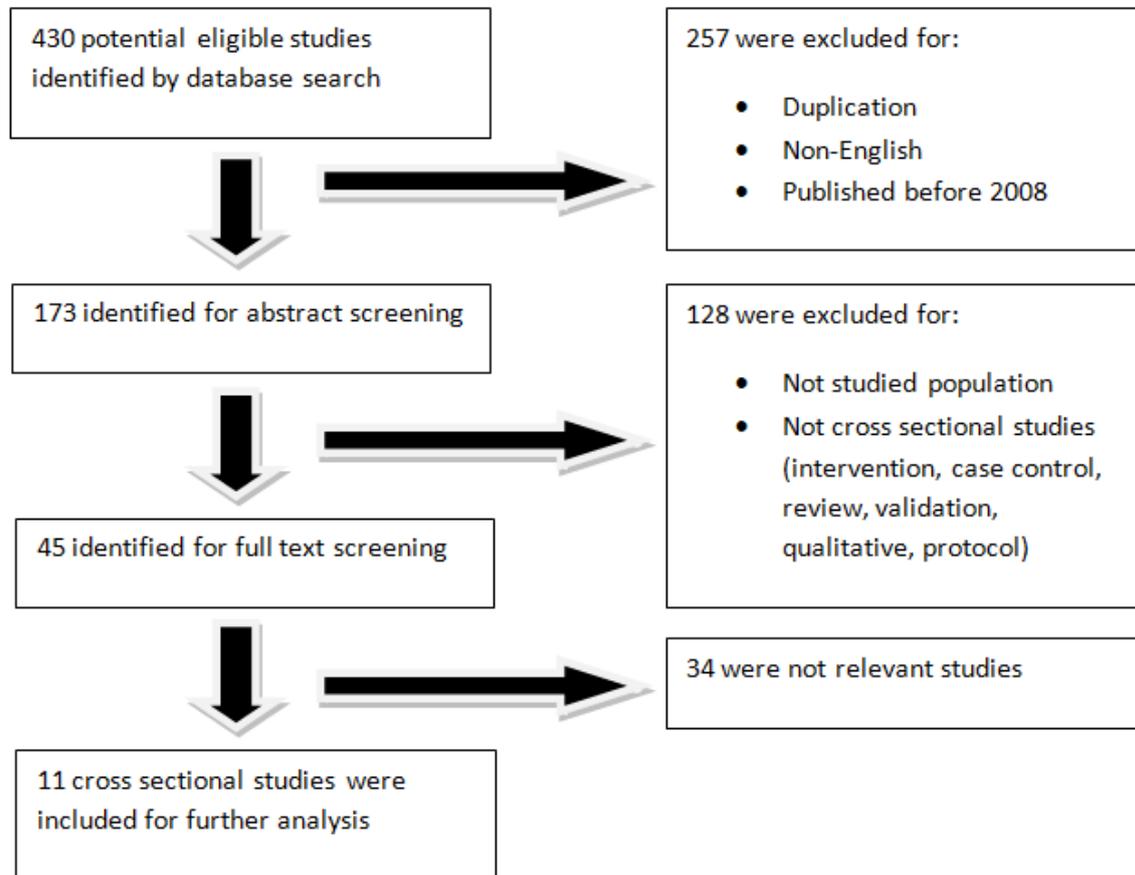


Figure 1: Study Selection (Google scholar, PubMed and Science Direct database)

3.0 Result

A total of 173 articles (after removal of duplicates, non-English and published before 2008) were identified through an electronic searching tool, in which they were screened for eligibility. In all, only 45 articles were screened and retrieved for full text review.

In our final article screening stage, we had a total of 11 eligible study papers. All those 11 articles were systematically reviewed and summarized into a table which consists of title, publication year, author, sample size, outcome findings and the grade of reviewed evidence (Table 1).

Table 1: Factors that influencing cervical cancer screening among immigrants

Factor	Promoting/ Barrier	Study (country)	Population (n=)	p- value	OR	95%CI
Married / common law partnership	Promoting	Idehen et al., 2017 (Finland)	Kurdish (197)	<0.01	2.50	1.32-4.73
Literacy in local language	Promoting	Idehen et al., 2017 (Finland)	Russian (291)	<0.01	4.04	1.76-9.23
Living in rural area	Barrier	Idehen et al., 2017 (Finland)	Somali (132) Kurdish (197)	<0.01 <0.01	0.11 1.96	0.03-0.46 1.11-3.46
Long duration of migration	Promoting	Idehen et al., 2017 (Finland)	Russian (291)	<0.01	0.92	0.88-0.98
Experienced any discrimination	Barrier	Idehen et al., 2017(Finland)	Russian (291)	<0.01	2.19	1.16-4.14
Did general health check- up	Promoting	Idehen et al., 2017 (Finland)	Russian (291) Somali (132) Kurdish (197)	<0.01 0.02 <0.01	3.38 2.58 3.40	1.53-7.48 1.13-5.92 1.76-6.56
Has ever given birth	Promoting	Idehen et al., 2017 (Finland)	Kurdish (197)	<0.01	8.15	2.33-28.5
Has experienced problems due to female genital mutilation	Barrier	Idehen et al. 2017 (Finland)	Somali (132)	0.04	0.21	0.05-0.93
Documented migrant	Promoting	Guerrero N et al., 2013 (USA)	Mexican (203)	<0.05	0.33	0.12-0.90
Previous pap smear test	Promoting	Knoff et al., 2013 (USA)	Hispanic (324)	<0.05	0.20	0.09-0.45
No children	Barrier	Lee FH et al., 2015 (Taiwan)	Vietnamese (451)	<0.05	0.27	0.135-0.569
Knowledge	Promoting	Lee FH et al., 2015 (Taiwan)	Vietnamese (451)	<0.05	1.19	1.093-1.297
Recent immigrant	Barrier	Harcourt et al., 2015 (USA)	African (112)	<0.01	0.19	0.07-0.51
Unemployed	Barrier	Harcourt et al., 2015 (USA)	African (112)	0.01	0.56	0.36-0.87

Recent immigration	Barrier	Khadikar A et al., 2013 (Canada)	General Immigrants (16706)	<0.05	0.77	0.71-0.84
Acculturation	Promoting	Castañeda et al., 2012 (USA)	Latino (173)	0.03	3.81	1.157-12.545
Health insurance	Promoting	Castañeda et al., 2012 (USA)	Latino (173)	<0.01	5.57	2.017-15.406
Low income	Barrier	Aminisani N et al., 2012 (Australia)	Asian (14228)	<0.05	0.69	0.64-0.74
Acculturation	Promoting	Taylor et al., 2010 (USA)	Vietnamese (1532)	<0.05	8.30	3.30-20.80
Married	Promoting	Taylor et al., 2010 (USA)	Vietnamese (1532)	<0.05	10.10	5.50-18.60
Stay in urban area	Promoting	Moen et al., 2017 (Norway)	General immigrants (152800)	<0.05	0.82	0.80-0.83
Female attending doctor	Promoting	Moen et al., 2017 (Norway)	General immigrants (152800)	<0.05	1.70	1.68-1.73
Born abroad attending doctor	Promoting	Moen et al., 2017 (Norway)	General immigrants (152800)	<0.05	0.88	0.86-0.89
Long duration of migration	Promoting	Bianco A et al., 2017 (Italy)	General immigrants (419)	<0.01	1.64	1.28-2.10

Those 11 studies were analysed and graded according to their level of evidence. Six studies were found to have a strong level of evidence, four studies graded as moderate level of evidence, while only one was scored as weak evidence (Figure 2).

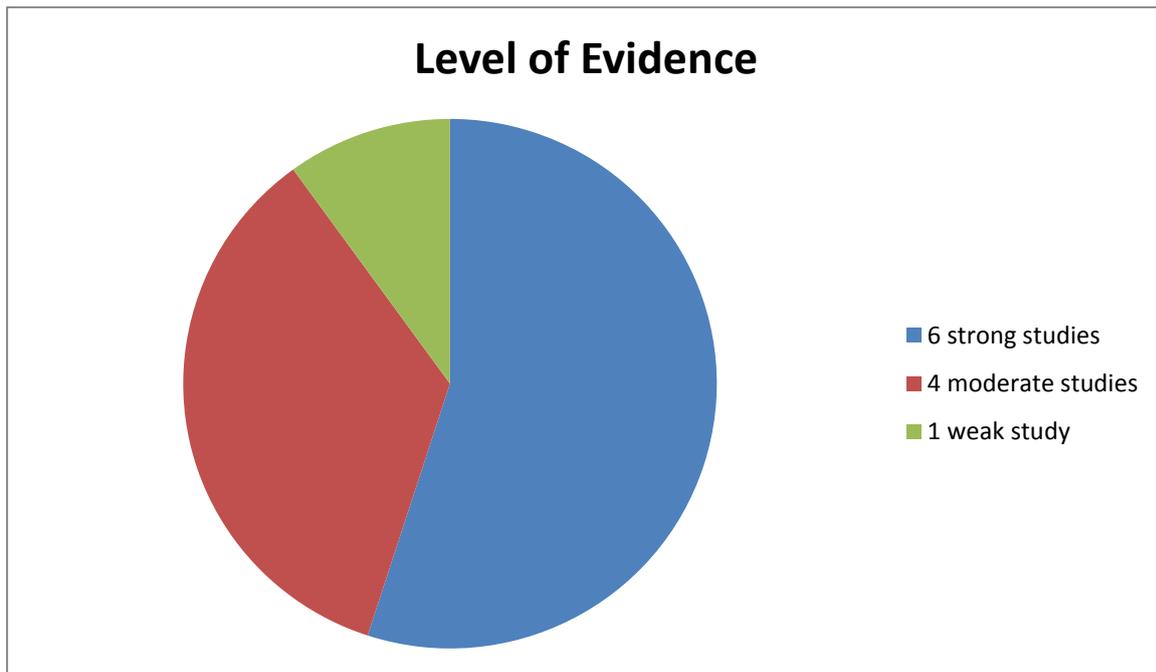


Figure 2: Level of Evidence

Of 11 studies, 6 were conducted in North America, 3 were in Europe, while both 1 in Australia and Asian region; with their sample sizes ranging from 112 to 152800. Seven countries were involved in these 11 selected studies: USA, Canada, Italy, Taiwan, Australia, Finland and Norway. Target groups were general immigrant population and also country specific immigrant population such as Russia, Kurdish, Mexican, Hispanic, Somali, Vietnamese, African, Latino and also Asian immigrants (Figure 3).

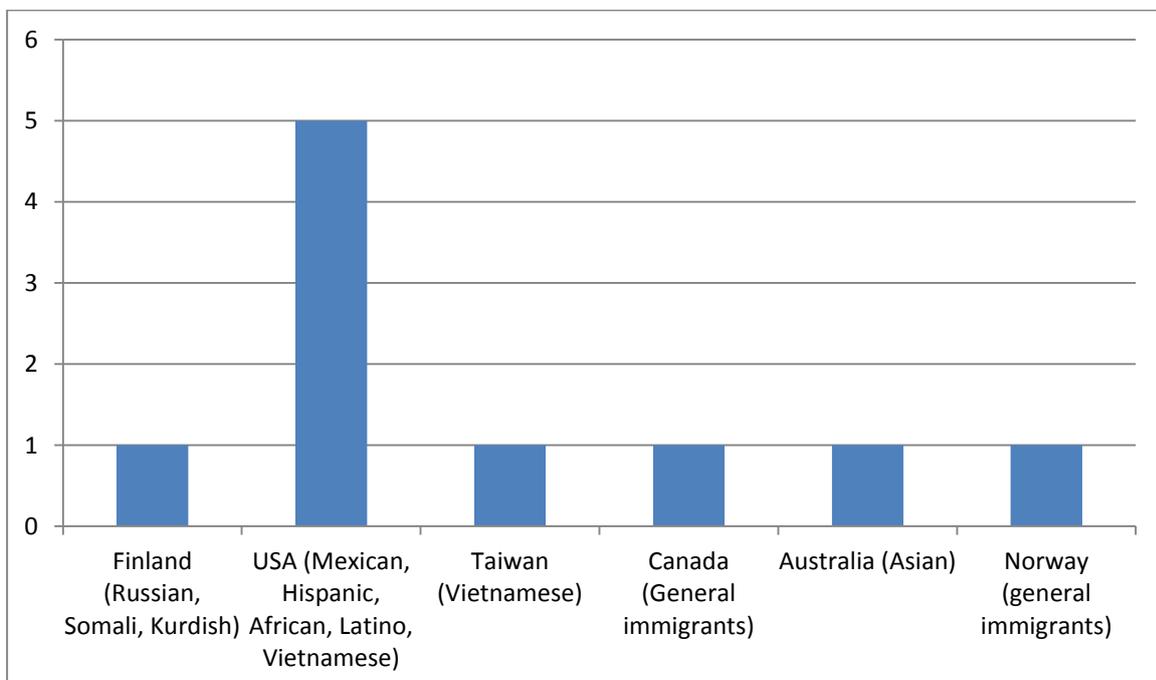


Figure 3: Country of origin and migrated country involved

There are numerous factors that influence the immigrant women to undergo cervical cancer screening services and programmes. They can easily be subdivided into: (1) socioeconomic factors such as marital status (OR: 2.50, 95%CI: 1.32-4.73), stay in urban area (OR: 0.82, 95%CI: 0.80-0.83) and have a good literacy in local language (OR: 4.04, 95%CI: 1.76-9.23), (2) knowledge and awareness that usually they received during previous medical check-up or clinic attendance (OR: 1.19, 95%CI: 1.09-1.29), (3) migration history and background, in which the longer their migration period the better acceptance towards cervical cancer screening (OR: 0.92, 95%CI: 0.88-0.98) , (4) status of migration with permit (OR: 0.33, 95%CI: 0.12=0.90), (5) history of previous pap smear done before (OR: 0.20, 95%CI: 0.09-0.45), (6) social adaptation towards local culture/acclimation (OR: 3.81, 95%CI: 1.16-12.46), and (7) medical services such as privilege of having medical insurance (OR: 5.57, 95%CI: 2.02-15.41), female attending doctors (OR: 1.70, 95%CI: 1.68-1.73) and born abroad attending doctors (OR: 0.88, 95%CI: 0.86-0.89) .

As for barrier towards cervical cancer screening among immigrants, there are also multiple factors that fell into the following categories: (1) socioeconomic factors such as stay in rural area (OR: 1.96, 95%CI: 1.11-3.46), ever experienced discrimination (OR: 2.19, 95%CI: 1.16-4.14), unemployed (OR: 0.56, 95%CI: 0.36-0.87), low income (OR: 0.69, 95%CI: 0.64-0.74), has experience genital mutilation (OR: 0.21, 95%CI: 0.05-0.93) and childless (OR: 0.27, 95%CI: 0.13-0.57) , (2) migration history such as recent immigration (OR: 0.19, 95%CI: 0.07-0.51) .

4.0 Discussion

The aim of this study was to explore promoting factors and barriers associated with participation in cervical cancer screening among immigrant women. We included 11 studies worldwide which covered seven countries such as USA, Italy, Finland, Australia, Norway, Taiwan and Canada.

We found a significantly greater percentage of Pap test receipt among documented migrants than among undocumented migrants. Migrant population suffers from many health disparities that have created barriers to obtaining appropriate preventive screenings.

The literature has shown that there are many factors that contribute to these disparities. Since possessing a regular source of care has been highlighted as an important factor in health services research related to immigrant populations, we were particularly interested in exploring a possible association between possessing a regular source of care and receiving age-appropriate cancer screenings (Ku L et al., 2001).

Consistent with previous results, the most significant factor for screening participation among all the groups was having had gynecological check-ups in the previous five years. Individuals' general physicians or gynecologists have a vital role to play in referring women to preventive care services or advising their utilization (Coughlin S et al., 2000). Women who do not use reproductive health services might need more information on the importance of screening (Cerigo H et al., 2013).

Studies have highlighted poor language proficiency as one of the most significant barriers to screening participation among immigrants (Jacobs E et al., 2005). Adequate communication

skills promote accessibility to healthcare services such as screening. Hence, it is crucial that recipients can read and understand the content of the screening invitation letter in the official language of the country and communicate with healthcare professionals (Grandahl M et al., 2015). Language problems may exist, leading to increased need to use medical interpreters among this group (Morrison T et al., 2012).

Young immigrants have a better chance of acquiring language skills mainly through schools, where they are more likely to be exposed to health promotion, including information about the purposes of screening.

Staying long enough in the host country enables immigrants to get acquainted with the healthcare system. Having many members in the family was associated with higher participation, consistent with an earlier study (Seidel D et al., 2009).

Living outside of metropolitan area was a barrier among immigrants in our study. These women might have difficulties in accessing screening sites due to longer distances and less public transportation; these results confirm similar studies (Lofters AK et al., 2010). Another potential barrier among Somalis was having had FGM-related problems. Women with FGM may experience discomfort and embarrassment during a gynecological examination which can constitute as a barrier to screening (Abdullahi A et al., 2009).

Higher education level and being married or in a common-law partnership were associated with greater participation in cervical cancer screening, in line with previous studies (Jennings et al., 2000). This aspect might reflect the role of husbands/partners as well as utilization of reproductive healthcare services (Basu P, et al., 2006). The strengths of this study are that it has included all 11 population-based studies and satisfactory response rates among participants.

5.0 Conclusion and recommendation

This review outlines the evidence-based of the published public health studies regarding those factors that associated with the participation of immigrant women in cervical cancer screening for the past 10 years (2008 till 2017). Among the most significant factors are acculturation and access to health care services. Effective interventions and programmes are required to tackle immigrant women in order to prevent late stage cervical cancer cases.

Promoting factors and barriers for cervical cancer screening identified by this review indicate that there are still multiple potential approaches and interventions to be introduced in order to overcome the disparity and issues among immigrant women. Amongst those issues are health care accessibility, knowledge about cervical cancer and pap smear screening, immigrant friendly health care environment and acculturation.

Pap smear screening is often advocated as the best and cost effective cervical screening tool to improve early diagnosis of cervical cancer. Thus, by doing this test, immigrant women can benefit the early prevention strategy and any suspicious screen-detected lesion or cytological result can be easily channelled to appropriate diagnosis and treatment.

Declaration

Authors declare that no conflict of interest between authors.

Authors contribution

Author 1: Syafiq Taib (project leader, literature review, write up, analysis)

Author 2: Norzaher Ismail (literature review, write up, tables design, analysis)

Author 3: Siti Nor Mat (literature review, write up, tables design, analysis)

Author 4: Shamsul Azhar Shah (literature review, write up, tables design, analysis)

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