Social Determinants of Health in Cervical Cancer

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A B S T R A C T

Aims One of the crucial issues of the health system in developing countries is the unequal distribution of health, which leads to inequality in social status and living conditions. Cervical cancer is the most common cancer among women aged 20 to 39 in developing countries. However, its social determinants are not yet fully understood. The present systematic review was conducted to collect the social determinants of health in cervical cancer that have been identified so far.

Information & Methods This systematic review was conducted from December 2020 to April 2021 by reviewing Persian and English articles published in journals on social determinants of cervical cancer by the PRISMA method. First, the scientific databases were searched in the period 2000-2020 using "Social Determinants of Health", "Human Papillomavirus", and "Cervical Cancer" keywords (2333 English articles and 63 Persian articles were found). After evaluation, 20 articles (18 English and 2 Persian articles) were included in the study. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyzes) checklist extracted data from selected articles.

Findings Articles were reviewed, and social determinants of health in cervical cancer were presented in two general categories: structural (education, income, and race and ethnicity) and intermediate (access to services, behavioral factors, environmental-living conditions, and psychosocial factors).

Conclusion The social determinants of health in the structural and intermediate sectors and their interaction affect cervical cancer. All aspects of cervical cancer are affected by prevention, screening, early detection, treatment, and rehabilitation.

Keywords Social Determinants of Health; Cervical Cancer; Systematic Review

C I T A T I O N   L I N K S

[1] World health organization guidelines ... [2] Mortality impact of achieving WHO ... [3] WHO guidelines for the use of thermal ... [4] Stages of pap smear screening change ... [5] Gender inequities in health: An ... [6] Cancer incidence and mortality worldwide ... [7] Cervical cancer screening in Middle ... [8] The new guideline for cervical cancer ... [9] Prevalence and type distribution ... [10] The Challenges and Solutions for ... [11] Why neoliberal health reforms have ... [12] Policy to tackle the social determinants ... [13] Escaping from the phantom zone ... [14] Closing the gap in a generation ... [15] Preterm delivery and psycho–social ... [16] Focusing climate change policy on ... [17] Achieving health equity ... [18] Preferred reporting items for ... [19] Knowledge and barriers towards ... [20] Social determinants of health associated ... [21] Making the case for cervical cancer ... [22] Determinants of cervical cancer ... [23] Women's participation in a cervical ... [24] Determinants of cervical cancer rates ... [25] Health insurance and cervical cancer ... [26] Who is getting pap smears in urban ... [27] Socioeconomic and regional ... [28] Role of demographic and ... [29] Psychosocial determinants ... [30] Accessibility to healthcare services ... [31] Determinants of cervical cancer ... [32] Cervical cancer in Bangladesh ... [33] Determinants of participation of women ... [34] An approach to establish behavioral ... [35] Sociodemographic and lifestyle determinants ... [36] Determinants of adequate follow-up ... [37] Determinants of cervical cancer screening ... [38] Individual-level and community-level ... [39] Disparities in cervical cancer screening ... [40] Factors associated with non-participation ... [41] Area socioeconomic variations ... [42] Cancer disparities by race/ethnicity ...

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Introduction

Cervical cancer is the fourth most common cancer in women and one of the major public health problems. According to the World Health Organization (WHO), more than 1.4 million women with cervical cancer worldwide live with the disease [1]. In 2018, 570,000 new cases of cervical cancer were reported, and 7.5% of all female deaths were due to this cancer. Approximately 70% of cervical cancers are reported in low- and middle-income developing countries [2]. According to the World Health Organization, due to demographic changes and lack of timely diagnosis and treatment, by 2030, cervical cancer will cause the death of about 474,000 women per year, and 95% of these deaths will occur in low- and middle-income countries [3]. According to the World Health Organization, 25% of women's deaths are caused by malignant tumors, and 18% are due to cervical cancer [4]. Cervical cancer is the most common cancer among women aged 20 to 39 years in developing countries [5], with a prevalence of 6.64% in Iran and the fourth most common cancer; 34.2% of gynecological cancers in Iran are cervical cancer, and its mortality rate is 42% [6].

Human papillomavirus (HPV) infection is an influential factor in cervical cancer [7]. The virus is the most common sexually transmitted infection, and types 16 and 18 are associated with more than 70% of cervical cancers [7]. Infection with HPV can cause cervical squamous cell carcinoma during 11-15 years, a very deadly disease, but can be prevented and diagnosed early. Approximately half of all diagnosed cervical cancers occur in women who have never been screened. In addition, 10% of cancers occur in women who have not been screened five years before diagnosis. For this reason, most countries with organized screening programs have controlled cancer well [8]. In recent years, the prevalence of abnormal Pap smear results in Iran has increased and has grown 2 to 4 times compared to previous reports. The prevalence of human papillomavirus infection is also increasing, and 70-84% of patients with cervical cancer in Iran are infected with HPV [9].

Today, health is one of the main priorities of policymakers, and the fair distribution of health is their main concern. The International Human Rights Framework emphasizes the movement towards justice in health by considering social determinants of health [10]. Social determinants of health are the conditions in which people are born, grow, live, and work [11]. According to some researchers, the lack of social support indicates unhealthiness [12], and others emphasize the living conditions of individuals [13]. Many models have been proposed for social determinants of health. Still, one of the most developed models was presented in the Almaty Declaration as a health strategy for all, including 14 social determinants affecting health [11, 14]. According to the conceptual framework of the Commission on the Social Determinants of Health (CSDH) of the World Health Organization, the key social determinants of health are classified into four structural (education, income, gender, and race), intermediate (living conditions, access to food, psychosocial factors, and behavioral factors), context (social and economic policies) and the level of health inequality categories [15].

There is strong scientific evidence today that gender, age, social class, social exclusion, marginalization, stress, unemployment, social protection, migration, and globalization have a profound effect on health [14, 16], and that medical care alone cannot improve the situation and provided the health of individuals [17]. In this regard, the CSDH emphasizes the equal access of all human beings to available resources and facilities, regardless of ethnicity, religion, political beliefs, and socioeconomic conditions [14]. Despite this emphasis, the health of people all over the world is strongly affected by race, ethnicity, gender, religion, and social inequalities, so that according to available estimates, about 50% of people's health is affected by social factors such as poverty, literacy, housing status, occupation and the rate of respect for women's rights and only 25% depends on the health system, 15% on genetic issues and 10% on environmental issues. In a simple assessment, it can be shown that the lower social classes suffer from more diseases and disabilities, resulting in premature death and lower life expectancy [11]. The main focus of studies is on the relationship between non-screening and early diagnosis of diseases and structural determinants of health, such as awareness, education, and family income [18, 19].

Many cervical cancer preventive programs in medium and low-income countries have failed due to various SDH, including a lack of public health services, socio-cultural norms, and a lack of cervical cancer knowledge [20]. Increasing women's access to cervical cancer screening services in middle and low-income countries requires developing and implementing social policies that mitigate the effects of many SDH that currently lead to health inequities [21]. Given the importance and high prevalence of cervical cancer in women, and since research has not yet precisely determined that the reason for the lack of timely screening in women is socioeconomic, medical, or psychological factors or the interaction of these factors, we decided to have a comprehensive review of studies to understand the importance of the relationship between structural and intermediate factors of social determinants of health in the field of cervical cancer in women. With this systematic review, we seek to answer the question of the role of social determinants in the development of cervical cancer.

Information and Methods

This systematic review was conducted from December 2020 to April 2021 by reviewing Persian and English articles published in journals on social determinants of cervical cancer by the PRISMA method. First, Google Scholar, Embase, WOS, PubMed Medline, Science Direct, Scopus, Proquest, Magiran, SID, and IranDoc databases were searched in the period 2000-2020 using advanced search strategy and tailor-made (and/or hybrid) by "Social Determinants of Health", "Human Papillomavirus" and "Cervical Cancer" keywords (2333 English articles and 63 Persian articles were found). In the second stage, the researchers prepared a list of titles and abstracts of related articles and evaluated by two researchers separately. All full-text articles containing actual research data on social determinants of health in cervical cancer were selected (46 articles), and review articles, case reports, abstracts, posters, and letters to the editor,

as well as articles that duplicated the results of other articles, were excluded (2353 articles). In the third stage, the articles were evaluated by STROBE 22 (The Strengthening the Reporting of Observational Studies in Epidemiology) for risk assessment by two researchers and divided into three levels: weak, medium, and strong (33 articles were selected). In the fourth and final stage, the Ottawa checklist (with a maximum of 9 points) was used to evaluate the quality of the studies. At all stages, wherever there was a difference between the two evaluators, they came to a common conclusion through discussion. Finally, 20 articles (18 English and 2 Persian articles) were included in the study [19, 22-40].

The PRISMA (Preferred) checklist (Reporting Items for Systematic Reviews and Meta-Analyzes) extracted data from selected articles. PRISMA is a guide designed to report systematic reviews, including 27 items for abstracts, methods, results, discussion, and financial resources [18] (Figure1).
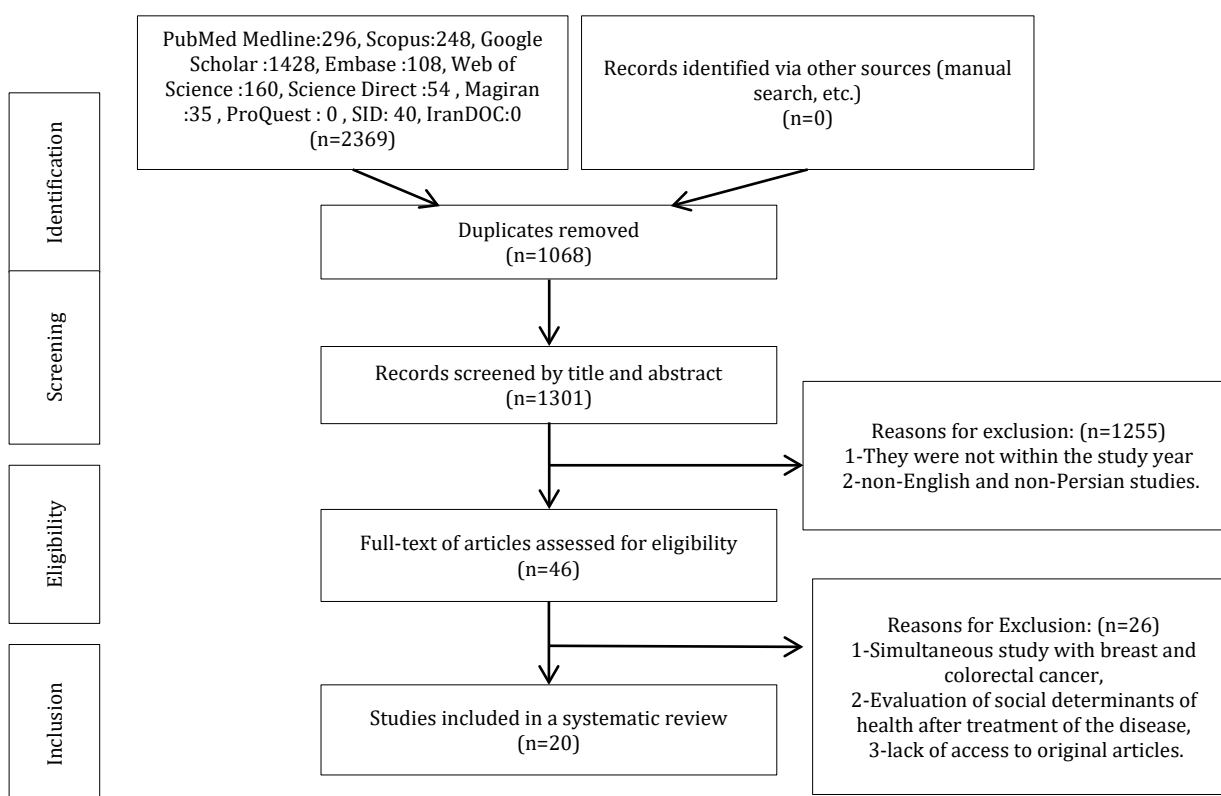

Figure 1) The flowchart of search

Findings

Out of 2396 articles (63 Persian and 2333 English) found initially, 33 articles remained during several stages of screening, of which nine articles were excluded due to simultaneous examination of the breast, colorectal and cervical cancer, and four articles were excluded due to the analysis of social determinants of health after the treatment of the disease. Finally, 20 articles were reviewed, and

social determinants of health in cervical cancer were presented in two general categories: structural and intermediate.

Structural determinants

Poverty seems to be the most important determinant of social structural determinants in cervical cancer by three sub-determinants:

Income

Monthly family income and economic reasons are influential factors in the level of awareness and

knowledge about cervical cancer [19, 22, 24, 28, 40]. Higher incomes lead to non-governmental centers for Pap smears to diagnose cervical cancer [36], and low income and poverty are factors in the impossibility of cervical cancer screening [33, 40].

Level of knowledge
Education level is an effective and relevant factor in awareness about cervical cancer [7, 19, 26, 33, 38-40]. Higher educated people are screened for cervical cancer at younger and more advanced ages [19, 26, 33, 39, 40] and are less likely to become pregnant [36]. In educated people, earlier diagnosis of cervical cancer [30] leads to treatment in the early stages, and complete treatment and eliminating the disease in these people (85.3%) is more likely. The use of contraceptives (especially barrier methods such as condoms) is higher in people with higher education [31], which greatly reduces the risk of infection [24, 28]. Among the risk factors for cervical cancer, the least knowledge was related to the role of human papillomavirus, and the most knowledge was related to having multiple sexual partners [19]. Lack of knowledge about the prevention and symptoms of cervical cancer was associated with inadequate cancer screening. Transmitting information and awareness from other women who had screened for cervical cancer and holding a session solely to raise awareness about cervical cancer screening facilitated the participation of other women [22, 29, 31, 32, 34, 38].

Race and ethnicity
In non-white women between the ages of 40 and 60, there is a risk of delayed cancer diagnosis due to low income and the use of public hospital services. The rate of invasive cancer in these people is 2.54 times higher than white people, with high income and referring to non-governmental hospitals in 40-44 years [37]. Also, race and ethnicity have been reported as factors associated with cervical cancer awareness [19, 39].

Intermediate determinants
Culture seems to be the most important determinant of intermediate social determinants in cervical cancer by four sub-determinants:

Living-environmental conditions
Women's employment has been an influential factor in cervical cancer due to the possibility of sexual intercourse with someone other than the husband [31, 38, 39]. Living in good urban areas was a factor in cervical cancer screening [26]. Having a smoker or low-income spouse was a risk factor for cervical cancer [28]. Women smokers with a history of alcohol consumption were less likely to be screened for cervical cancer [35, 40].

Psychosocial conditions
The most important obstacles in performing cervical cancer screening tests were worried, and anxiety about performing the test (95.8%) and not encouraging or informing by health care providers (61.2%), and the least important obstacle is not supported by the sexual partner (8.8%) [19, 29]. Social support and sexual status were reported as factors in women's participation in cervical cancer screening [34]. Religion [26], number of children [35], higher fertility rate, low age at first delivery and marital status [26, 30, 38], lower vaccination rate, and younger population in developing countries was reported to be related to cervical cancer [26].

Factors affecting behavior
Behavioral health related to the culture of each country is one of the causes of cervical cancer [26]. Belief and positive attitude and negative attitude [33] to perform cervical cancer screening tests were effective factors in screening [33]. Reluctance to perform cervical cancer screening was associated with a lack of knowledge about the disease [24]. Feeling satisfied with the services provided in health centers was one reason for participating in the cervical cancer screening program [25].

Access to services
The mere use of public health services [22], the lack of cervical cancer screening centers [23], and the cost of services [36] were among the reasons for the failure of the screening program. Access to services was associated with having a university degree, insurance, and enough service centers after screening [34-36]. People with public or uninsured insurance were less likely to be screened than those with private insurance [27, 29, 33, 38, 39].

Discussion
This study systematically reviewed the social determinants of health in cervical cancer. The findings showed that different structural and intermediate sectors are combined to cause cervical cancer in women. Identifying these factors related to the person, environment, and relationships between people helps identify the factors affecting cervical cancer.

Social determinants of health in the structural dimension consist of income, education, and racial and ethnic issues. Education (17 studies), knowledge (12 studies), and income (11 studies) were the most important structural determinants of health, and the role of racial and ethnic issues (2 studies) was low. What is achieved in the structural part is collectively called poverty. Poverty is defined as a lack of resources, insufficient awareness and knowledge, and living below the standard. Poor people are less likely to be screened because of their lower education, more children, less knowledge, and greater exposure to risk factors. In poor communities, service providers also provide little training to clients due to poor patients' lack of resources and high referral (due to other infectious and chronic diseases) [41, 42]. Poverty also affects having insurance, type of insurance, and access to services in the intermediate dimension [38, 39]; given

the role of structural factors, including education and income, countries' planning and policy-making should be based on eradicating illiteracy and increasing income in poverty alleviation for better access to recipients for cervical cancer screening.

Social determinants of health in the intermediate dimension consist of 4 factors: environmental-living conditions, psychosocial conditions, behavioral factors, and access to services. Access to services (13 studies), behavioral factors (8 studies), and environmental-living conditions (9 studies) were the most important, and psychosocial factors (6 studies) were less important. What is mentioned in the intermediate section is collectively called culture. Culture is the rules of individual or group relationships in a communication system defined by similarities in physical and social environments, common beliefs, values, traditions, similarities in lifestyles, attitudes, perceptions, and behavior. An individual's ability to understand the need to diagnose, accept, and treat disease is influenced by cultural factors. If the person does not understand being aware of the disease, prevention will be disrupted. To change the culture, one must start by changing beliefs, attitudes, barriers of fear, and neglect in cervical cancer screening, and then move on to transfer information and increase knowledge and awareness by service providers. In training by service providers, these people themselves should be fully acquainted with the culture of their native area. These people should be part of the people of that area so that they can provide training following the culture of that area and make the most impact [8]. Given the role of intermediate factors including access to services, behavioral factors, and living conditions, planning and policy-making should be based on increasing women's access to service centers, providing free and low-cost services, and planning to promote a culture of screening with multiple educational interventions, sensitizing recipients and service providers to perform cervical cancer screening.

Our study did not include the 'grey' literature, so Future research needs to survey this literature. In future studies on Social Determinants of Health in Cervical Cancer, facilitating barriers and facilitators of both supply and requirement of health care is suggested. According to the present study's findings, what should be considered is using the WHO framework for studying the SDH and considering the inequalities, structural, intermediary, and contextual determinants. Future research on SDH should be developed based on mixed-method related to the SDH be explored by qualitative study and their measurement be performed using quantitative tools. For this, the health decision-makers can use the results of these studies to design and implement appropriate and effective actions to prevent health inequalities.

Conclusion

The present systematic review showed that almost all The social determinants of health in the structural sector are education, income, race, and ethnicity, respectively. There is access to services, behavioral factors, environmental-living conditions, and psychosocial factors in the intermediate sector, respectively. Also, it is necessary to pay attention to the interaction of structural and interstitial factors affecting cervical cancer. On the other hand, special attention should be paid to the concept of their synergy, and they should be considered as an interconnected set. As a result, identifying these factors for governments to design prevention, intervention, and health promotion programs can play a key role. Culture, along with poverty, has a synergistic effect. That is, poverty can reduce or increase the negative effects of culture. Forms of social injustice such as racial discrimination and racism can affect access to care in some communities. The effects of poverty, culture, and social injustice overlap, and the relative importance of each change over time. All aspects of cervical cancer are affected by prevention, screening, early detection, treatment, and rehabilitation.

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