REVIEW

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Exploring Women's Attitudes Towards Cervical Cancer Screening and Their Association with Life Satisfaction and General Life Attitudes: A Systematic Review

Dimitra Georga, María Saridi*, Erasmia Rouka, Evangelos EC Fradelos, Pavlos Sarafis, Dimos Sioutis, Aikaterini Toska

Abstract

Introduction: Cervical cancer is a serious public health issue worldwide, with screening playing a critical role in the prevention and early diagnosis of the disease. Despite its proven effectiveness, women's participation rates in screening remain insufficient. **Purpose:** This systematic review aims to investigate the degree of compliance among women with cervical cancer screening and the factors associated with these attitudes. It also aims to examine the association between life satisfaction and general attitudes towards life with women's compliance with this screening. **Methodology:** The PRISMA 2020 methodology was followed. The PICO framework was used to identify relevant studies in the PubMed and Scopus databases. The search was performed in November 2024. Five studies with quantitative design met the inclusion criteria. The methodological quality of the studies was assessed using the Newcastle-Ottawa scale adapted for cross-sectional studies. Data were synthesized narratively presented in summary tables. **Results:** Life satisfaction emerged as a positive predictor of participation in cervical cancer screening. In addition, factors such as high educational level, active employment status, and religiosity were associated with positive attitudes towards screening. Conversely, smoking habits, low health literacy, and fatalism beliefs about cancer were associated with reduced participation in screening. The small number of included studies (n=5), sample and variable heterogeneity, and the inability to do a meta-analysis, however, constituted important limitations of the review. In addition, restricting the search to English-language published studies may have excluded relevant evidence. **Conclusions:** Life satisfaction is an important predictor of preventive health behaviors. Interventions that aim to enhance life satisfaction and psychological well-being in general may improve compliance with cervical cancer screening and, by extension, prevent the disease.

Keywords: Life satisfaction- cervical cancer- screening- life attitudes

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Introduction

Cervical cancer is a widespread public health problem worldwide [1], with a woman somewhere in the world dying from the disease every two minutes [3]. Globally, an estimated 662,044 cases (age-standardized incidence rate, ASIR: 14.12/100,000) and 348,709 deaths (age-standardized mortality rate, ASMR: 7.08/100,000) of cervical cancer were recorded in 2022, with the disease representing the fourth leading cause of cancer morbidity and mortality in women [3].

Persistent infection with a high-risk type of human papillomavirus (HPV) is the main cause of the disease [4], with approximately 70% of cases caused specifically by HPV-16, HPV-17, and HPV-18 [5]. Furthermore, according to the US Centers for Disease Control and Prevention (CDC), it is estimated that 85% of the population will have HPVinfectionduring their lifetime [6].

Effective primary (HPV vaccination) and secondary prevention (screening and treatment of precancerous lesions) can help prevent most cases of cervical cancer [4]. Cervical cancer, when diagnosed early, is among the most treatable cancers, with successful outcomes through effective management. By adopting a comprehensive strategy for the prevention, detection, and treatment of the disease, it is possible to eliminate it as a major public health problem within a single generation [7].It is noteworthy that in countries that have implemented cervical cancer screening programs, deaths from the disease have been reduced by 50% to 80% [8].For example, in Scandinavian countries, deaths from cervical cancer have been reduced by 80% through systematic screening programs, while in low-income countries, even with a single test (such as an HPV test), mortality can be reduced by 30–40% [8].

In 2020, the World Health Organization (WHO)

*Department of Nursing, University of Thessaly,Gaiopolis Campus, Larisa, Trikala Ring Road, 41500, Larissa, Greece. *For Correspondence: msaridi@uth.gr*

introduced a global plan with three main goals by 2030, including vaccinating 90% of girls by the age of 15, screening 70% of women between the ages of 35 and 45, and treating 90% of women diagnosed with cervical cancer [2].

Although screening and HPV immunization programs have contributed to reducing cervical cancer mortality rates in recent decades, participation rates in both vaccination and HPV screening have declined, particularly among young women, with cervical cancer remaining a health problem in both low- and high-income countries [9].

Barriers to cervical cancer screening are multifactorial and arise from complex interactions between social determinants of health at systemic, local, and individual levels [10]. The most commonly reported barriers include lack of information about cervical cancer and its treatment, fear of the screening procedure or outcome, living in a remote or rural area, limited health infrastructure, embarrassment, lack of time, and lack of family support [11].

Participation in screening programs for various types of cancer has also been associated with life satisfaction and general attitudes toward life. For example, one study found that people with high life satisfaction and self-esteem were more likely to participate in regular health screenings [12].Another study, which investigated the relationship between self-esteem, self-efficacy, and optimism with the use of preventive health services, found that higher levels of self-esteem, self-efficacy, and optimism were associated with a greater likelihood of participating in preventive health screenings, such as cancer screenings.This suggests that strengthening these factors may promote the adoption of preventive health behaviors [13]. Similarly, another study that investigated the association between established general psychosocial factors and the use of cancer screening found that the use of cancer screening was positively associated with reduced loneliness, cognitive well-being, optimism, self-efficacy, self-esteem, self-regulation, perceived autonomy, reduced perceived social exclusion, and positive effect [14].

Aim

The present study aims to assess the degree of association between women's attitudes towards cervical cancer screening and life satisfaction and general attitude towards life. Sub-objectives are to investigate the degree of women's compliance with cervical cancer screening and the factors associated with these attitudes.

Materials and Methods

Design

A systematic review of the research literature was conducted. Specifically, this systematic review was conducted using the PICO methodology to define the study objectives [15, 16] (Table 1) and then the PRISMA 2020 methodology to collect data for the review [17]. The literature search was performed in November 2024 in the PubMed and Scopus bibliographic databases.It should be noted that the systematic search was limited to November 2024. References published in 2025 were only included in the Introduction section to provide up-to-date contextual information and were not part of the systematic review evidence base.

Search strategy and keywords for identifying studies

Each database was searched using keywords related to women's attitudes towards cervical cancer screening, life satisfaction, and general attitudes toward it. The index words were combined with the Boolean operators AND and OR.

In the PubMed bibliographic database, restrictions were placed on the availability of the text (Text availability- Free full text), the language of publication (Article Language- English), the gender of the participants (Sex- Female), and their age (Age- Adult: 19+ years). Correspondingly, in the Scopus database, restrictions were placed on the type of record (Document type- Limited to Article), the language of publication (Language- Limited to English), and the type of source (Source type- Limited to Journal). The search concerned the title and the abstract of the publications.On the contrary, in none of the bibliographic databases there was any restriction placed regarding the year of publication.

The index words and the number of results returned by the search with their combinations, after applying the above restrictions, are listed in the Table 2.

The literature search and study selection were performed by two independent reviewers. Any disagreements were resolved through discussion and, when necessary, consultation with a third author. No automation tools were used in the process.

Inclusion and Exclusion Criteria

Study inclusion criteria included studies published in English, in peer-reviewed journals, regardless of year of publication, conducted in any country, and using a quantitative research design.In contrast, exclusion criteria included studies published in a language other than English, studies focused generally on cancer screening and not specifically on cervical cancer screening, studies with data only for a subgroup of the eligible population(e.g. only women of a specific age range, only immigrants, or only women from urban or rural areas). However, studies focusing on different age ranges were not excluded.Additional exclusion criteria were studies with a population of women already diagnosed with cervical cancer or survivors thereof, non-original research

Table 1. Analysis of the PICO Methodology Followed in the Systematic Literature Review

Population	Women
Intervention(InfluentialFactors)	General attitude towards life, life satisfaction, quality of life.
Comparison	Women who undergo cervical cancer screening are compared to those who do not undergo screening
Outcomes	Preventive screening for cervical cancer.

Table 2. Keywords and Multitude of Results Brought by Initial Search with These Words in the Bibliographic Databases of PUBMED and SCOPUS after Applying the Restrictions

#	Key words	PubMed	Keywords	Scopus
#1	("cervical cancer"[Title/Abstract] OR "uterine cervical neoplasm"[Title/Abstract] OR "cervical malignancy"[Title/Abstract] OR "cancer of the cervix"[Title/Abstract] OR "cervical neoplasm"[Title/Abstract] OR "cervical carcinoma"[Title/Abstract] OR "cervix cancer"[Title/Abstract] OR "gynaecological cancer"[Title/Abstract] OR "gynaecological neoplasm"[Title/Abstract] OR "gynaecological carcinoma"[Title/Abstract]) AND ((ffrft[Filter]) AND (female[Filter]) AND (english[Filter]) AND (alladult[Filter]))	10,422	"cervical cancer" OR "uterine cervical neoplasm" OR "cervical malignancy" OR "cancer of the cervix" OR "cervical neoplasm" OR "cervical carcinoma" OR "cervix cancer" OR "gynaecological cancer" OR "gynaecological neoplasm" OR "gynaecological carcinoma"	69,668
#2	("cervical smear"[Title/Abstract] OR "pap test"[Title/Abstract] OR "pap smear"[Title/Abstract] OR "papanicolaou test"[Title/Abstract] OR "vaginal smear"[Title/Abstract]) AND ((ffrft[Filter]) AND (female[Filter]) AND (english[Filter]) AND (alladult[Filter]))	2,121	"cervical smear" OR "Pap test" OR "Pap smear" OR "Papanicolaou test" OR "vaginal smear"	14,339
#3	("prevention"[Title/Abstract] OR "screening"[Title/Abstract] OR "screening participation"[Title/Abstract] OR "screening hesitancy"[Title/Abstract] OR "screening attitudes"[Title/Abstract] OR "preventive health behavior"[Title/Abstract] OR "attitudes towards screening"[Title/Abstract] OR "screening practice"[Title/Abstract] OR "screening behavior"[Title/Abstract] OR "screening uptake"[Title/Abstract] OR "screening adherence"[Title/Abstract] OR "screening practice"[Title/Abstract] OR "screening use"[Title/Abstract]) AND ((fft[Filter]) AND (female[Filter]) AND (english[Filter]) AND (alladult[Filter]))	124,996	"prevention" OR "screening" OR "screening participation" OR "screening hesitancy" OR "screening attitudes" OR "preventive health behavior" OR "attitudes towards screening" OR "screening practice" OR "screening behavior" OR "screening uptake" OR "screening adherence" OR "screening practice" OR "screening use"	1,313,073
#4	("life satisfaction"[Title/Abstract] OR "satisfaction with life"[Title/Abstract] OR "gratification"[Title/Abstract] OR "subjective wellbeing"[Title/Abstract] OR "psychological factors"[Title/Abstract] OR "psychosocial factors"[Title/Abstract]) AND ((fft[Filter]) AND (female[Filter]) AND (english[Filter]) AND (alladult[Filter]))	7,422	"life satisfaction" OR "satisfaction with life" OR "gratification" OR "subjective well-being" OR "psychological factors" OR "psychosocial factors"	70,261
#5	general attitude towards life[Title/Abstract] OR attitude toward life[Title/Abstract] OR optimism[Title/Abstract] OR pessimism[Title/Abstract] OR easygoing[Title/Abstract] OR introversion[Title/Abstract] OR emotional expression[Title/Abstract] OR worldview[Title/Abstract] OR meaning of life[Title/Abstract] OR purpose in life[Title/Abstract] AND ((fft[Filter]) AND (female[Filter]) AND (english[Filter]) AND (alladult[Filter]))	2,176	"general attitude towards life" OR "attitude toward life" OR "optimism" OR "pessimism" OR "easygoing" OR "introversion" OR "emotional expression" OR "worldview" OR "meaning of life" OR "purpose in life"	82,589
	#1 AND #2 AND #4	5		19
	#1 AND #2 AND #5	0		3
	#1 AND #3 AND #4	14		45
	#1 AND #3 AND #5	2		13

articles (e.g. reviews, case reports, oral and published conference presentations, etc.), studies with qualitative research design, systematic reviews and meta-analyses, pilot studies and descriptive reviews.

Study outcomes and variables

The main outcome studied is the degree of compliance of women with preventive, presymptomatic cervical cancer screening. Secondary variables includedpsychological and sociodemographic factors that influence the degree of compliance. Data extraction was conducted independently by two reviewers using a standardized data collection form.For each study, the following data were extracted:Authors and year of publication of the study, type and purpose of the study, number of participants, country of study, participation rates in cervical cancer screening, sociodemographic and psychological factors related to the degree of participation in screening or the degree of acceptance of screening, relationship between life satisfaction and attitudes towards life and attitudes towards cervical cancer screening (Tables 3,4). Discrepancies were resolved through discussion or by consulting a third author. No assumptions were made regarding missing or unclear data, no automation tools were used, and no direct contact with study investigators was required.

Results

The search strategy yielded 101 candidate studies for inclusion. The flowchart provides detailed information on the study selection process (Figure 1).

Assessment of the risk of bias (Risk of bias)

Risk of bias was assessed using the adapted Newcastle-Ottawa Scale for cross-sectional studies for each of the included articles. Two reviewers independently evaluated the studies, and any discrepancies were resolved through discussion or consultation with a third author. No automation tools were used in this process.Risk of bias due to missing results (reporting bias) was not formally assessed as no meta-analysis was performed. However,

Table 3. Degree of Participation of Women in Cervical Cancer Screening, Sociodemographic and Psychological Factors Associated with Participation.

Authors and year of publication	Type and Purpose ofStudy	Number of participants	Country of conduct	Participation rate in cervical cancer screening	Sociodemographic and psychological factors related to participation
Asareetal. (2024)	Study Type: Population-based retrospective cross-sectional Purpose: To investigate the impact of social determinants of health and psychosocial factors on women's attitudes towards cervical cancer screening.	2224 womenaged 18 and over	USA	90% of women reported interest in cervical cancer screening and 80.0% had undergone current, up-to-date screening.	Delay in participating in recommended cervical cancer screening was associated with: • Low literacy levels • Limited access to health care services • Low financial stability • Rural residence • Lower education level • Increased access to food • Lack of concern about cancer The agreement on cancer fatalism
Tataretal. (2024)	Study Type: Cross-sectional study Purpose: To investigate the relationship between psychosocial factors and the intentions of adequately screened and under-screened women to participate in cervical cancer screening.	3348 women 21 to 70 yearsold	Canada	53% of participants had undergone at least one Pap test in the last 3 years and 47% had not undergone a Pap test for more than 3 years or never.	Greater intention to be screened for HPV was associated with: • Higher levels of knowledge about HPV and cervical cancer. • Lower annual income. • Active employment status compared to unemployment. • Lack of access to a family doctor. • Previous HPV vaccination. • History of abnormal cytology. • Starting sexual activity at age ≤21 years compared to starting at age >21 years. • Having sexual partners versus not having any in your lifetime. • Homosexuality • Having more sexual partners (5-10 compared to those with 1-4). Confidence in screening. Conversely, reduced intention to be screened was associated with: • Current tobacco use.
Bawalleetal. (2024)	Study Type: Cross-sectional study Purpose: To investigate the relationship between financial literacy, financial education, and participation in breast and cervical cancer screening.	1729 womenaged 21-77 years	Japan	The percentage of the Japanese female population participating in cervical screening is 36.9%.	Cervical cancer screening was positively associated with: • Age • Marital status or being divorced • Higher educational level • Higher family income and assets • Cervical cancer screening was negatively associated with: • The smokinghabit.
Jiang et al. [25]	StudyType: Cross-sectionalstudy Purpose: To investigate the relationships between breast and cervical cancer screening requirements and related health beliefs	805 womenaged 40-70 years	China	23.7% of participants had undergone cervical cancer screening.	The need for cervical cancer screening was negatively associated with age but positively associated with educational level.
Cadetetal. (2017)	Study Type: Cross-sectional study Purpose: To investigate psychosocial factors associated with older women's participation in cervical cancer screening services.	2,316,218 women [weighted sample] aged 54-85+ years	Spain	The percentage of women who participated in cervical cancer screening was 61%.	•Younger age was associated with a higher likelihood of participating in cervical cancer screening services. Immigration was negatively associated with cervical cancer screening behaviors.

selective reporting of results cannot be ruled out.

Methodology for synthesis of findings, statistical analysis, sensitivity analysis and risk measures (effects measures)

The synthesis of the findings was carried out descriptively and by presenting summary tables. In order to enable comparison, the studies were grouped based on common characteristics and outcome measures. No data transformation or imputation was required and only for the results mentioned above a descriptive synthesis was carried out.Due to the descriptive nature of the study design and the heterogeneity of the study populations and outcomes, no statistical analyses or meta-analyses were conducted, nor was a formal assessment of certainty/confidence levels performed. However, grouping by key characteristics (e.g. psychological factors) allowed for exploration of variation in findings.As a result, risk measures (e.g., hazard ratios, mean differences) were not applicable. Also, sensitivity analyses were not conducted due to the descriptive nature of the review.

Table 4. Relationship between Life Satisfaction and General Attitudes towards It and Women's Attitudes towards Cervical Cancer Screening

Authors and year of publication	Relationship between life satisfaction and general life attitudes and women's attitudes towards cervical cancer screening
Tataretal. (2024)	The influence of religious or spiritual beliefs on health decisions was associated with a greater likelihood of getting tested for HPV.
Bawalleetal. (2024)	Level of happiness, myopic view of the future, anxiety about later life, and perception of health status do not significantly affect cervical cancer screening.
Cadetetal. (2017)	Greater life satisfaction is a positive predictor of cervical cancer screening behaviors.
	Higher levels of religiosity are a positive predictor of cervical cancer screening behaviors.

Critical assessment of the quality of selected studies with the Newcastle Ottawa tool for cross-sectional studies

The methodological quality of the studies was assessed using the adapted Newcastle Ottawa scale for cross-sectional studies [18]. A score of seven stars or more indicates low risk of bias, while a score of six stars or less indicates high risk of bias [19] (Table 5). The included studies had a low risk of bias. Regarding sampling, although most studies included representative samples of the target population, only one provided adequate documentation or information regarding sample size calculation. Also, only a few of the studies provided information about non-participants and their characteristics.In addition to the above, the included studies used subjective measures as they relied on self-reports of participants, and therefore, there may be information bias [20].

All included studies used statistical methods to control confounding factors, which contributed to enhancing the validity of their results. Also, appropriate statistical tests were used in all studies, with a clear presentation of the tests applied as well as the correlationsof the measurements.

The initial search with the restrictions that had been

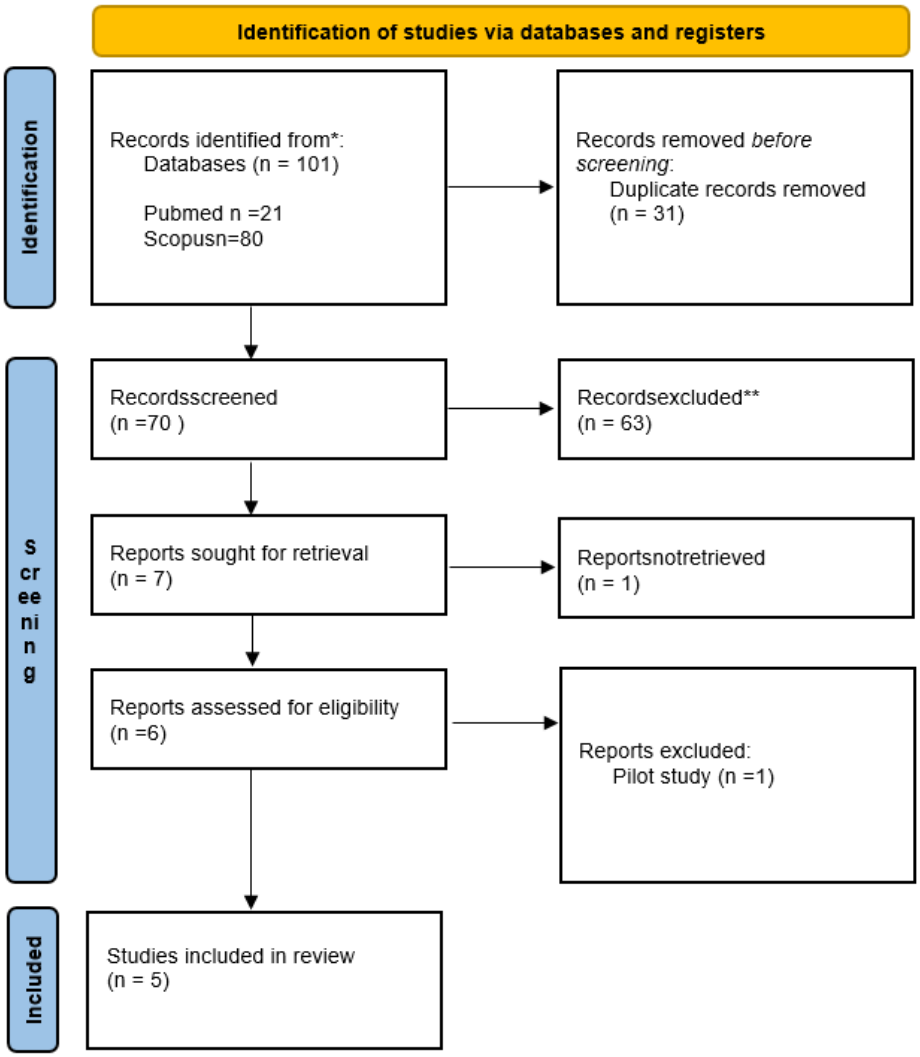

Figure 1. PRISMA 2020 Flow Diagram of the Study Selection Process

Table 5. Assessment of the Methodological Quality of Cross-Sectional Studies Using the Newcastle-Ottawa Scale Adapted for Cross-Sectional Studies

	Asare et al. (2024)	Tatar et al. (2024)	Bawalle etal. (2024)	Jiang et al. (2018)	Cadet et al. (2017)
Selection	a	a	b	a	b
1. Representativeness of the sample: a. Truly representative of the average in the target population. * b. Somewhat representative of the average in the target group. * (non-random sampling) c. Selected group of users/convenience sample. d. No description of the derivation of the included subjects.	*	*	*	*	*
2. Sample size: a. Justified and satisfactory (including sample size calculation). * b. Not justified. c. No information provided	b	a *	b	b	b
3. Non-respondents: a. Proportion of target sample recruited attains pre-specified target or basic summary of non-respondent characteristics in sampling frame recorded. * b. Unsatisfactory recruitment rate, no summary data on non-respondents. c. No information provided	c	a *	b	c	a *
4. Ascertainment of the exposure (risk factor): a. Validated screening/surveillance tool. ** b. Non-validated screening/surveillance tool, but the tool is available or described. * c. No description of the measurement tool. Comparability: (Maximum 2 stars)	b *	a **	a **	a **	a **
5. Comparability of subjects in different outcome groups on the basis of design or analysis. Confounding factors controlled. a. Data/ results adjusted for relevant predictors/risk factors/confounders e.g. age, sex, time since vaccination, etc. ** b. Data/results not adjusted for all relevant confounders/risk factors/ information not provided. Outcome	a **	a **	a **	a **	a **
6. Assessment of outcome: a. Independent blind assessment. ** b. Record linkage. ** c. Self-report. * d. No description.	c *	c *	c *	c *	c *
7. Statistical test: a. Statistical test used to analyse the data clearly described, appropriate and measures of association presented including confidence intervals and probability level (p value). * b. Statistical test not appropriate, not described or incomplete.	a *	a *	a *	a *	a *
Total scoring	6/10	9/10	7/10	7/10	8/10
Studycharacterization	Satisfactory	Good	Good	Good	Good

set yielded 101 results, of which 31 were removed due to multiple entries/appearances in the results before reading their titles and abstracts.Subsequently, after reading the title and abstract, 63 entries were excluded due to non-fulfillment of the study entry criteria that had been set or due to a topic not relevant to the issue under study. Of the 7 articles that resulted, after reading the full text, 2 were excluded, one due to the non-free availability of the full text and one concerning the presentation of pilot study results.

Of the five studies included in this review, four were conducted in a developed country [21-24] and one in a developing country [25]. Specifically, one of the studies was conducted in the USA [21] , one in Canada [24], one in Japan [22], one in Spain [23] and one in China [25]. Of these studies, three examined cervical cancer screening [21, 23, 24] and two examined screening for both breast and uterine cancer [22,25].

The age composition of participants among the different studies varied, with one study including women of any age over 18 years [21], another 21 to 70 years[24]. One study included participants up to 77 years [22] and one up to 70 [25]. The percentages of women who had undergone at least one screening test varied accordingly, ranging from 36.9% [22] to 80% [21].

Married marital status [22], higher educational attainment [21, 22, 25], active employment status compared to unemployment [24], and greater financial stability [21] were associated with a greater likelihood of participating in cervical cancer screening. Higher levels of knowledge about HPV and cervical cancer [24], greater access to health care services [21], and residence in urban areas [21] were also associated with a greater likelihood of participation.Conversely, smoking habits [22, 24] and immigration [23] were associated with a lower likelihood of participating in cervical cancer screening.

The findings on the effect of income were conflicting, with one study positively [22] and another negatively [24] associated with the likelihood of undergoing cervical cancer screening. The findings on the effect of age were also conflicting, with some studies correlating it positively [22] and others negatively [23, 25] with participation in cervical cancer screening.

Lack of access to a family doctor, previous HPV vaccination, initiation of sexual activity at age ≤21 years compared to initiation at age >21 years, having sexual partners compared to not having any in one's lifetime, homosexuality, and having more sexual partners (5-10 compared to 1-4) were also reported among the factors associated with women's positive attitude towards cervical cancer screening [24].In contrast, lack of concern about cancer and agreement with fatalism of cancer were associated with delayed participation in this screening [21].

Regarding the relationship between life satisfaction and general attitudes towards it and women's attitudes towards cervical cancer screening, it was found that greater life satisfaction is a positive predictor of cervical cancer screening behaviors. Among the positive predictors, high levels of religiosity emerged [23].

Discussion

The present study aimed to investigate the degree of compliance of women towards cervical cancer screening and related factors. In addition, it aimed to assess the degree of correlation of these attitudes with life satisfaction and general attitude towards life.The systematic review of the literature found some heterogeneity regarding the recommended tests (cytology, HPV, or both), the age at which screening should begin, and the intervals for this screening. This heterogeneity could potentially explain the significant difference in acceptance and participation rates in cervical cancer screening found between different countries, with the percentages of women who have undergone at least one cervical cancer screening ranging from 36.9% to 80%.These observed differences could also be due to the different age composition of the female population in the various studies included in this systematic review, as well as the fact that one of the included studies was conducted in a developing country.

We also found a positive relationship with active employment status compared to unemployment, as well as with greater financial stability. The lower levels of cervical cancer screening among unemployed and poorer women may indicate financial burden, which is a barrier to accessing cancer screening services. Working women, on the other hand, are more likely to undergo cervical cancer screening because this group of women is more likely to have private health insurance [26].

Higher educational level was also reported in three of the studies we included in the systematic review as a factor positively influencing women's attitudes towards cervical cancer screening. Lower levels of education may limit health literacy due to limited ability to read and fully understand information.Health literacy has been associated with screening knowledge and is a factor contributing to autonomy and empowerment and, therefore, decisions to consistently adhere to cervical cancer screening guidelines [27]. We found that living in urban areas is also associated with a greater likelihood of participating in cervical cancer screening.Rural residents generally report limited access to quality health care and may be limited in obtaining recommended care due to traveling distances, transportation difficulties, provider shortages, and access to specialized care. In addition, some women experience emotional and physical distress during cervical cancer screening tests, and the anticipation of pain or stigma during screening has been identified as a notable barrier to care in some rural communities. These barriers faced by rural populations suggest that interventions designed to address the specific needs of rural women, such as access to routine and specialized care, are necessary [28]. Smoking was associated with a lower likelihood of participating in cervical cancer screening, according to findings from two studies included in this review. The lower levels of participation in cervical cancer screening among smokers are of some concern, given that smoking increases the risk of developing cervical abnormalities by causing additional damage to cells already damaged by HPV [29]. The low participation of smokers in preventive check-ups may reflect the lower level of health consciousness or the higher willingness to take health risks in this population group [30].

The findings regarding the effect of income on attitudes and behaviors towards cervical cancer screening are conflicting, with one study finding it positively and another negatively associated with the likelihood of undergoing cervical cancer screening. This finding highlights the need for further research, aiming to clarify the role that income plays, as well as to understand the mechanisms through which it influences women's screening behaviors.

The age of onset of sexual activity, as well as the number of sexual partners, as well as sexual orientation, were also reported in one of the studies in the present systematic review among the factors associated with women's positive attitude towards cervical cancer screening. Specifically, it was shown that the onset of sexual activity at age ≤21 years compared to the onset at age >21 years was associated with women's positive attitude towards cervical cancer screening. The presence of sexual partners compared to none throughout life, as well as the presence of more sexual partners (5-10 compared to 1-4), was also associated with a positive attitude. This finding agrees with that of other studies. Risky sexual behavior patterns increase the likelihood of HPV infection and, consequently, the potential development of cervical cancer. However, such behaviors have also been associated with better compliance with cervical cancer screening recommendations, possibly due to the presence of gynecological symptoms that prompt women to seek medical care. Gynecological symptoms probably motivate women to use health services where screening is offered, suggesting that the main strategy for using this screening may be opportunistic.This highlights the importance of developing strategies to increase screening uptake in women with high-risk sexual practices, particularly given the increased risk of cervical disease [31].

In the present study, homosexuality was also reported among the factors associated with women's positive attitudes towards cervical cancer screening. This finding contrasts with other studies that have shown that sexual minority women, i.e. those with a sexual orientation other than heterosexual, such as lesbian, bisexual or queer (LBQ), constitute a subpopulation that has been shown to underutilize cervical cancer screening [32]. Health services can address the factors associated with low screening rates among sexual minority women by preventing discrimination based on sexual orientation, inviting disclosure of sexual orientation, and offering cervical cancer screening to these populations during various health care encounters [33].

The factors identified in this study also included not worrying about cancer and agreeing with cancer fatalism, which were associated with delayed participation in cervical cancer screening. Worrying about cancer is a complex phenomenon that, although not well understood, may be related to an individual's personal characteristics, health status, or lifestyle.Worry is a key component of health behavior and attitudes toward preventive health care and participation in cancer screening programs. Results from different studies are conflicting, and it is unclear whether negative emotions, such as worry, promote or hinder an individual's participation in preventive activities [34]. Cancer fatalism refers to the negative belief that the outcome of cancer is predetermined and inevitable regardless of personal actions [35]. This suggests the need for health professionals to consider women's fatalistic tendencies and attitudes towards cancer when organizing educational and informational programs that encourage participation in cervical cancer screening [36].

Greater life satisfaction was also identified as a factor that positively influences cervical cancer screening behaviors. Kim et al. [37] also found that greater life satisfaction was associated with greater use of several preventive services, such as cholesterol testing, participation in mammography screening, and Pap smear screening.Similarly, another study conducted with the participation of 79,000 adults from 29 countries found that life satisfaction was a predictor of compliance with preventive health behaviors during lockdowns due to COVID-19 [38].

To interpret these findings, the authors refer to the theoretical framework proposed by Goudie et al. [39], according to which individuals who experience higher levels of well-being tend to attribute greater value to their lives, as they have "more to lose". This leads them to avoid high-risk behaviors and invest more in protective and preventive activities.This framework can also be applied to prevention through screening. In addition, the authors also refer to Benjamin et al. [40], according to which well-being and especially life satisfaction is a key variable in the utility function of individuals, influencing their choices in various fields. Therefore, as the authors conclude, high life satisfaction may act as a reinforcing factor for the adoption of responsible and preventive health behaviors [38].

Finally, among the positive predictors identified in this study are high levels of religiosity. Religiosity is defined as "the extent to which beliefs in specific religious values and ideals are held and practiced by an individual" [40].Research has shown that religiosity is associated with lower levels of behavioral risk (e.g., alcohol use) and higher levels of health-promoting behaviors [41]. These findings could potentially be explained by the fact that social structures and networks found in faith-based settings may influence individual health attitudes and behaviors by providing social support.Social support includes emotional, instrumental, and informational functions. In terms of cancer screening, individuals can draw emotional support from church members to manage anxiety surrounding cancer screening procedures and results.This support may also influence social norms regarding acceptance of screening, self-efficacy for seeking and receiving screening tests, and provide encouragement to individuals who decide to undergo screening.In addition, material/practical social support may facilitate the use of screening services by reducing barriers such as cost, transportation, and language. In addition, participation in religious organizations may provide individuals with exposure to health information and resources related to cancer screening, which may lead to more positive attitudes toward screening [42].

Study limitations

This systematic review presents some limitations that should be considered when interpreting the results. First, the small number of studies that met the inclusion criteria (n=5) limits the generalizability of the conclusions. Additionally, heterogeneity among studies, both in terms of sample and variables used, made it difficult to perform meta-analysis and comparative evaluation of findings. Finally, although a comprehensive search strategy was used, the exclusion of unpublished literature and the inclusion of only studies published in English may have failed to capture all relevant literature in this study. Future systematic reviews should aim to include studies published both in English andin languages other than English. They should also aim to look into unpublished and grey literature and expanddatabase coverage in order to overcome these limitations. Moreover, when enough homogeneous data are available, performing meta-analyses may yield more accurate effect estimates and stronger evidence.

In conclusions, this systematic review demonstrated that life satisfaction, as well as other psychosocial factors,influence women's attitudes towards cervical cancer screening. Life satisfaction, active working life, access to health services, and higher educational level emerged as factors that enhance compliance with screening recommendations.On the contrary, unhealthy habits such as smoking, lack of access to a family doctor, lack of concern about the disease, and agreement regarding the fatalism of cancer emerged among the factors that act as barriers to participation in this screening. Interventions that promote psychological well-being and social empowerment of women could strengthen participation in screening programs.

Our findings demonstrate that interventions promoting women's psychological well-being, health literacy, and social empowerment are essential to increase participation

in screening programs. In addition, targeted strategies focusing on vulnerable groups are necessary to reduce inequities.Further research is needed to clarify causal mechanisms and support tailored prevention strategies.

Author Contribution Statement

DG. Main research, Idea conception. MS. Writing the first draft or making substantial revisions. ER. Providing critical feedback and approving the submitted version. EF. Analysis & Interpretation: Processing and understanding the data. PS. Analysis & Interpretation: Processing and understanding the data. DS. Gathering the data. AT. The initial idea or plan for the research. Managing the project and mentoring.

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Approval by scientific body / student thesis

This study forms part of a doctoral dissertation.

Ethical issues

As this work is a systematic review of previously published studies, ethical approval was not required.

Availability of data

All data analyzed in this review are available from the published articles included in the study. No new data were generated.

Registration

This systematic review was not registered in a registration database.

Conflict of interest

The authors declare no conflict of interest.

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