

## Interventions that facilitate adherence to Pap smear exam: integrative review

*Intervenções que favorecem a adesão ao exame de colpocitologia oncótica: revisão integrativa*  
*Intervenciones que favorecen la adhesión a la Prueba de Papanicolau: revisión integrativa*

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### ABSTRACT

**Objective:** to identify scientific productions showing relevant interventions to implement the Cervical Uterine Cancer Prevention Program increasing adherence to exams. **Method:** integrative literature review through an online search in the following databases: LILACS, SciELO, and PubMed® comprising articles published from 2009 to 2014. **Results:** thirty-eight articles made up the study's final sample. Results showed the following interventions: use of case manager; telephone call; invitation letter; educational activities; media outreach work; community health agents; partnerships; population database screening; and multiple interventions. **Conclusion:** studies are mainly focused on women from developing countries and interventions are efficacious to increase women's knowledge about and adherence to prevention of cervical uterine cancer.

**Key words:** Cervix Neoplasms Prevention; Vaginal Smears; Nursing; Women's Health; Health Education.

### RESUMO

**Objetivo:** identificar produções científicas que apresentem intervenções relevantes para implementar o Programa de Prevenção do Câncer Cérvico-Uterino, aumentando a adesão à realização do exame. **Método:** revisão integrativa da literatura, realizada por busca *on-line*, nas bases de dados: LILACS, SciELO e Pubmed®, abrangendo artigos publicados de 2009 a 2014. **Resultados:** trinta e oito artigos compuseram a amostra final do estudo. Estes indicaram as seguintes intervenções: utilização de gerente de caso, contato telefônico, carta-convite, atividades educativas, divulgação na mídia, agentes de saúde da comunidade, parcerias, rastreamento de base populacional e múltiplas intervenções. **Conclusão:** as pesquisas concentram-se entre mulheres provenientes de países em desenvolvimento, e estas intervenções são eficazes no aumento da adesão e do conhecimento destas mulheres em relação à prevenção do câncer cérvico-uterino.

**Descritores:** Prevenção de Câncer de Colo do Útero; Esfregaço Vaginal; Enfermagem; Saúde da Mulher; Educação em Saúde.

### RESUMEN

**Objetivo:** identificar producciones científicas que manifiesten intervenciones importantes para la implementación del Programa de Prevención del Cáncer Cervical-Uterino, aumentando la adhesión a la realización de la prueba. **Método:** revisión integrativa de la literatura, realizada mediante búsqueda online en bases de datos LILACS, SciELO y PubMed®, incluyendo artículos publicados de 2009 a 2014. **Resultados:** muestra final compuesta por 38 artículos, que indicaron las siguientes intervenciones: utilización de gestor de caso, contacto telefónico, carta de invitación, actividades educativas, difusión en medios, agentes de salud comunitarios, alianzas, rastreo en base poblacional y múltiples acciones. **Conclusión:** las investigaciones se concentran en mujeres de países en desarrollo. Las intervenciones consiguen aumentar la adhesión y el conocimiento de estas mujeres respecto de la prevención del cáncer cervical-uterino.

**Palabras clave:** Prevención de Cáncer de Cuello Uterino; Frotis Vaginal; Enfermería; Salud de la Mujer; Educación en Salud.

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## INTRODUCTION

Cervical cancer is the third most frequent cancer among women in the world and is directly related to the degree of a country's underdevelopment. Its incidence is nearly twice as high in less developed countries as in the most developed ones. Almost 85% of annual deaths from this cancer occur in developing countries<sup>(1)</sup>.

According to estimates, in 2014/2015 there will be 15,000 new cases of cervical cancer in Brazil. If we disregard non-melanoma skin cancer, cervical cancer is the third most common among women<sup>(2)</sup>.

Compared to other neoplasms, cervical cancer is highly preventable, develops slowly until reaching the stage of invasive cancer, and the screening exam is technically simple and efficacious for detection. A Pap smear can detect cervical cancer in the early stages, making it curable with the use of relatively simple measures<sup>(3)</sup>.

For a cervical cancer prevention program to be considered efficient, with impact on morbimortality reduction, Pap smear-based screening coverage must reach 85% of women's population in the age group envisioned<sup>(3)</sup>.

Today in Brazil there is a wide range of scientific studies approaching the percentage of Pap smear coverage, which varies depending on age group and period studied.

A study carried out in 41 Brazilian municipalities showed that 75.3% of women underwent Pap smear exam throughout their lives (IC95%: 74.0-76.7)<sup>(4)</sup>. For Maringá the exam coverage for the last three years was 87.6% among women 25 to 59 years old<sup>(5)</sup>.

In a small municipality of São Paulo state the annual coverage found for 2007 was 15.4%, while in 2008 it was 15.1% among women 25 to 59 years old<sup>(6)</sup>. Although these data refer only to exams performed by the Brazilian Unified Health System (SUS), percentages fall very far short of those envisaged to impact on and reduce morbimortality from cervical cancer.

Low Pap smear coverage is concerning, evidencing a lack of adherence in the women's population, unveiling the need to develop health actions to build awareness about cervical cancer prevention measures<sup>(7)</sup>.

Some interventions are proposed to improve women's adherence, such as mobilization of the women's population and health professionals; continued education activities; use of flyers and posters; actively going in search of women; offer of referrals and required treatment; and implementation of therapeutic protocols for Sexually Transmitted Diseases (STD)<sup>(8)</sup>.

In this way, considering the interest in adopting effective methods, this investigative review became relevant to identify scientific productions presenting interventions that increase women's adherence to Pap smear exam.

## METHOD

This is an integrative review aimed at gathering, evaluating, and summarizing the results of studies about a given topic in a systematic and organized way. This instrument deepens knowledge about the topic investigated by facilitating the summarization of published studies, showing the current status of knowledge and related gaps<sup>(9)</sup>.

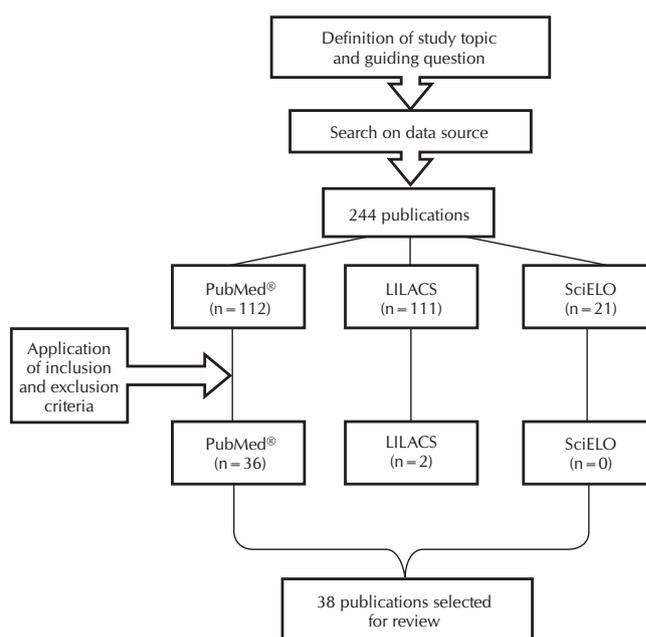
This review was elaborated based on scientific literature guidance according to the following stages: a) identification of the topic and selection of the research question; b) establishment of criteria for inclusion and exclusion in studies; c) definition of information to be taken from selected studies—categorization of studies; d) evaluation of studies included in the review; e) interpretation of results; and f) presentation of review/summary of knowledge<sup>(9)</sup>.

The study was performed through online search for scientific production based on the following guiding question: "Which interventions performed allow increasing women's population adherence to Pap smear exam?"

Productions were gathered using the following data sources: *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS); Scientific Electronic Library Online (SciELO); and PubMed®. Data were searched from February to April 2014.

As criteria to select sampling the publication period was defined from 2009 onwards and, in the abstract, the article should answer the research question defined. As descriptors in health science (DeCS) we have used "Neoplasias do Colo do Útero", "Estudos de Intervenção," and "Esfregaço Vaginal." As Medical Subject Headings (MeSH) we have used "Cervical Cancer Screening" and "Intervention."

The PubMed® database produced 112 articles, of which 36 met the inclusion criteria defined. LILACS produced 111 publications, of which 21 met the inclusion criteria established; of the total, seven were duplicated articles and 12 did not answer to the research question. Thus, only two articles were used. In SciELO we found 21 articles, but none met the inclusion criteria. Thus the study comprised 38 articles related to the topic and objective of this study that met the inclusion criteria established, as shown in Figure 1.



**Figure 1** – Representative flowchart of the selection of articles included in the integrative review

STUDY FORM	
Authors:	_____
Publication year:	_____
Journal:	_____
Quotation:	_____
Study location:	_____
Number of participants:	_____
Type of study:	_____
Study objective:	_____
Kind of intervention made:	_____
Period and time of intervention:	_____
Result achieved:	_____

Figure 2 – Study form

Articles were copied to facilitate organization. Then, material was subjected to critical reading to evidence and delimit what was crucial to obtain an in-depth study.

To facilitate structural and logical visualization of the study, reading cards were prepared, as shown in Figure 2. In addition to the kind of intervention used, the authors evaluated the research location, number of participants in the study, kind of study, period of intervention, and result achieved.

## RESULTS

As shown in Box 1, among the 38 articles included in the review most were based on data from developed countries, but oriented toward women belonging to minority ethnical

Box 1 - Articles selected for review

Title	Year/ Country	Design/Number of participants	Interventions	Outcomes
Case management intervention in cervical cancer prevention: the Boston REACH coalition women's health demonstration project <sup>(10)</sup>	2011/USA	Pre and post-intervention/732	Case manager	Increase in the uptake of periodic Pap smear exam
Increasing participation in cervical cancer screening: telephone contact with long-term non-attendees in Sweden. Results from RACOMIP, a randomized controlled trial <sup>(11)</sup>	2013/Sweden	Intervention with control group/8,800	Telephone call	Increase in participation of women in uptake of exam, and at low cost
Increasing cervical cancer screening for a multiethnic population of women in South Texas <sup>(12)</sup>	2014/USA	Cohort/32,807	Automated reminder call	Increase in the uptake of Pap smear exam
Effectiveness of nursing interventions to increase pap smear test screening <sup>(13)</sup>	2013/ Turkey	Quasi-experimental/ 2,500	Multiple interventions	Telephone contact was the intervention that facilitated higher adherence to the uptake of Pap smear exam.
Interventions targeted at women to encourage the uptake of cervical screening <sup>(14)</sup>	2011	Integrative review with randomized and controlled clinical trials	Invitation letter	Increase in adherence to cervical cancer prevention programs
A prospective randomized study of two reminding strategies: telephone versus mail in the screening of cervical cancer in women who did not initially respond <sup>(15)</sup>	2011/ Alsace	Randomized study/10,662	Invitation letter and telephone call	Both interventions are efficacious, but invitation letter is more affordable and easier to be applied
Methods to increase participation in organized screening programs: a systematic review <sup>(16)</sup>	2013	Systematic review	Postcard and invitation letter	Both proved to be efficacious to increase participation in cervical cancer prevention
Intervenciones educativas para la prevención del cáncer cervicouterino <sup>(17)</sup>	2012	Bibliographic survey	Educational interventions	Efficacious in adopting behaviors that prevent cervical cancer
Evidence-based intervention to reduce access barriers to cervical cancer screening among underserved Chinese American women <sup>(18)</sup>	2010/ USA	Pre- and post-intervention/ 134	<i>Education in health and Internet</i>	Increase in adherence to Pap smear exam
Effectiveness of cultivando la salud: a breast and cervical cancer screening promotion program for low-income Hispanic women <sup>(19)</sup>	2009/USA	Pre- and post-randomized intervention/ 243	Educational activities	Increase in adherence to the uptake of Pap smear exam

To be continued

## Box 1

Increasing pap smear utilization among Samoan women: results from a community based participatory randomized trial <sup>(20)</sup>	2009/USA	Randomized intervention/ 398	Culturally adapted educational programs	Increase in adherence to uptake Pap smear exam
Actividades educativas en Cruce de los Baños sobre prevención del cáncer cervicouterino <sup>(21)</sup>	2010/ Cuba	Randomized intervention/142	Educational intervention	Increase in adherence to the uptake of Pap smear exam
Cervical cancer screening and adherence to follow-up among Hispanic women study protocol: a randomized controlled trial to increase the uptake of cervical cancer screening in Hispanic women <sup>(22)</sup>	2012/ USA	Parallel controlled randomized intervention/600	Culturally adapted educational intervention	Increase in adherence to the uptake of Pap smear exam
AMIGAS: a multicity, multicomponent cervical cancer prevention trial among Mexican American women <sup>(23)</sup>	2013/ USA	Randomized four-component intervention	Educational interventions	Increase in adherence to the uptake of Pap smear exam
ACCISS study rationale and design: activating collaborative cancer information service support for cervical cancer screening <sup>(24)</sup>	2009/ USA	Randomized prospective experimental intervention/20	Focus group with educational interventions	Increase in knowledge about cervical cancer prevention
Community health worker intervention to decrease cervical cancer disparities in Hispanic women <sup>(25)</sup>	2010/ USA	Randomized study/120	<i>Educational intervention with workshops</i>	Positive association between knowledge about cervical cancer and uptake of exam
Acciones educativas para la prevención del cáncer cervicouterino en la adolescencia <sup>(26)</sup>	2011/ Venezuela	Intervention/65	Educational intervention	Increase in knowledge about cervical cancer
Interventions that increase use of Pap tests among ethnic minority women: A meta-analysis <sup>(27)</sup>	2011/ USA	Meta-analysis	Multiple interventions	Community education proved to be efficacious to increase the uptake of Pap smear associated to easy access to health care service
Overcoming barriers to cervical cancer screening among Asian American women <sup>(28)</sup>	2011	Review	Educational intervention using community members	Favored an increase in screening rates
Impact of media reporting of cervical cancer in a UK celebrity on a population-based cervical screening programme <sup>(29)</sup>	2011/ United Kingdom	Ecological/ 33,000	Media reports about celebrities	Showed a transitory increase in Pap smear exams rate
Using entertainment-education to promote cervical cancer screening in Thai women <sup>(30)</sup>	2012/ USA	Quasi-experimental	Thematic soap opera and educational flyers	Increase in knowledge and adherence to Pap smear exam
Building a cervical cancer screening intervention for public health practice <sup>(31)</sup>	2013/ USA	Randomized study	Community based educational intervention	Increase in cervical cancer screening
Adherence to cervical and breast cancer programs is crucial to improving screening performance <sup>(32)</sup>	2009/Brazil	Intervention/ 5,759	Home visit by community health agent	Increase in adherence to Pap smear exam
Evaluation of a cervical cancer control intervention using lay health workers for Vietnamese American women <sup>(33)</sup>	2010/ USA	Intervention/ 234	Home visit by health agent	Increase in adherence to Pap smear exam
Evaluating the efficacy of lay health advisors for increasing risk-appropriate pap test screening: a randomized controlled trial among Ohio Appalachian women <sup>(34)</sup>	2011/ USA	Randomized study/286	Home visit, telephone calls and postcard	Improvement of adherence to the exam

To be continued

Box 1 (concluded)

Refinement of an educational toolkit to promote cervical cancer screening among hispanic immigrant women in rural southern Georgia <sup>(35)</sup>	2012/ USA	Intervention	Educational toolkits and community health agents	Reduction in cultural barriers and increase in adherence to cervical cancer prevention
Kin Keeper SM: design and baseline characteristics of a community-based randomized controlled trial promoting cancer screening in Black, Latina, and Arab women <sup>(36)</sup>	2013/ USA	Controlled randomized study/514	Education in health through community health agents	Increase of adherence to Pap smear exam
Increasing cervical cancer screening in the United States-Mexico border region <sup>(37)</sup>	2014/ USA	Intervention/ 162	Education in health through community health agents	Good adherence to Pap smear exam
Cervical cancer prevention: new tools and old barriers <sup>(38)</sup>	2010/ USA	Intervention	Partnership between the university and community	Reduction in social barriers and increase in adherence to Pap smear exam
Increasing cervical cancer screening in a hispanic migrant farmworker community through faith-based clinical outreach <sup>(39)</sup>	2011/ USA	Review	Partnership of health services with faith-based entities	Increase in adherence to Pap smear exam
Innovative approaches to promoting cervical health and raising cervical cancer awareness by use of existing cultural structures in resource-limited countries: experiences with traditional marriage counseling in Zambia <sup>(40)</sup>	2013/ Africa	Intervention/70	Partnership of health services with faith-based entities	Increase in adherence to Pap smear exam
Adaptation of a cervical cancer education program for african americans in the faith-based community, Atlanta, Georgia, 2012 <sup>(41)</sup>	2014/ USA	Methodological	Educational intervention associated to churches	Increase in adherence to cervical cancer prevention
Socio-economic inequalities in breast and cervical cancer screening practices in Europe: influence of the type of screening program <sup>(42)</sup>	2010/ 22 European countries	Cross-sectional	Population-based screening	Showed more efficiency than opportunistic screening
A systematic review of interventions to increase breast and cervical cancer screening uptake among Asian women <sup>(43)</sup>	2012	Systematic review	Multiple interventions	Combination of group education and availability of exam uptake is more efficacious
Updated recommendations for client- and provider-oriented interventions to increase breast, cervical, and colorectal cancer screening <sup>(44)</sup>	2012/ USA	Descriptive	Multiple interventions	Group education, dissemination in media, and reduction of structural barriers to health services are efficacious
Effective interventions to facilitate the uptake of breast, cervical and colorectal cancer screening: an implementation guideline <sup>(45)</sup>	2011	Methodological	Multiple interventions	Reminders and reduction in health service barriers are efficacious to enhance screening
Influencing women's actions on cervical cancer screening and treatment in Karawang District, Indonesia <sup>(46)</sup>	2012/Asia	Qualitative research	Multiple interventions	Increase in adherence by disseminating information, paying home visits, and providing free exams
What implementation interventions increase cancer screening rates? a systematic review <sup>(47)</sup>	2011	Systematic review	Multiple interventions	Increase in adherence with reminders, dissemination in the media, education in health, and reduction in health service barriers

groups from developing countries, or studies directly conducted in developing countries.

No articles were found in national scientific journals. Articles are distributed as follows: three in *Bio Med Central Public Health* magazine; two in the *Journal of Health Care for the Poor and Underserved*; two in the *Journal of Women's Health*; two in the *American Journal of Public Health*; two in *Cancer*; two in *Medisan*; two in *Implementation Science*; two in the *Journal of Cancer Education*; and one article published in each of the following magazines: *Contemporary Clinical Trials*; *Revista Chilena de Obstetricia y Ginecología*; *Cancer Epidemiology Biomarkers Prevention*; the *International Journal of Epidemiology*; the *Journal General Internal Medicine*; *Rural and Remote Health*; the *Journal of Medical Screening*; the *Journal of Lower Genital Tract Disease*; the *Asian Pacific Journal of Cancer Prevention*; *Preventing Chronic Diseases*; *Psycho-oncology*; the *North American Journal Medical Sciences*; *Bio Med Central Cancer*; *Progress Community Health Partnerships*; the *International Journal of Cancer*; *Cochrane Database of Systematic Reviews*; the *American Journal of Preventive Medicine*; *Research in Nursing & Health*; *Acta Cytologica*; *Global Health Promotion*; and the *Journal of Rural Health*.

Regarding the year of publication, 2011 had the most publications, totaling 11 articles; 2013 and 2012 had seven articles each; in 2010 six articles were published; in 2009, four; and in 2014 three articles were published.

The number of participating women, age group, study location, kind of study, and interventions used varied among studies. Interventions described in studies referred to: use of case manager; telephone call; invitation letter; educational activities; media outreach work; community health agents; partnerships; population database screening; and multiple interventions.

#### **Case manager**

Case manager was used in Boston, Massachusetts, USA, oriented toward 732 black women aged 18 to 75 years old, in a five-year period, facilitating women's access to Pap smear exams, and providing social support to their children. These women showed a significant increase in the periodical uptake of the exam<sup>(10)</sup>.

#### **Telephone call**

A study performed in Sweden comprising 8,800 women who had not undergone Pap smear exam for two years, using control and intervention groups, inferred that telephone calls increased women's participation in the uptake of the exam, are low cost, and can be carried out within the scope of a prevention program<sup>(11)</sup>.

Automated call reminders were used in another cohort study in Texas, United States of America, comprising 32,807 women for a three-year period, which also showed an increased uptake of Pap smear exam<sup>(12)</sup>.

A quasi-experimental study in Turkey comprising 2,500 women and using multiple nursing interventions such as education in health, educational flyers, telephone calls, and home visits, found that telephone calls were the intervention

with the highest percentage of adherence to the uptake of Pap smear exam<sup>(13)</sup>.

#### **Invitation letter**

A bibliographic review with randomized and controlled clinical trials showed scientific evidence that supports the use of an invitation letter to increase adherence to cervical cancer prevention programs<sup>(14)</sup>.

A randomized study in Alsace with 10,665 women with delayed Pap smear exams found that invitation letters and telephone calls were equally efficacious to foster the uptake of preventive exams; however, an invitation letter is more affordable and applicable to women who have no telephone<sup>(15)</sup>.

A systematic review survey evaluated the efficacy of interventions to increase participation in organized population-based screening programs. The survey found that, concerning cervical cancer, the most efficacious interventions for participation were postcards and invitation letters<sup>(16)</sup>.

#### **Educational activities**

A bibliographic survey showed that the use of educational interventions is efficacious to improve a population's degree of knowledge and to foster adoption of behaviors to prevent cervical cancer<sup>(17)</sup>.

An interventionist study carried out with 135 Chinese women living in New York City in the United States found that education in health intervention associated with the Internet was efficacious to increase women's adherence to the uptake of Pap smear exams<sup>(18)</sup>.

In this sense, randomized interventionist studies considered educational activities as an efficacious intervention to increase adherence to the uptake of Pap smear exams<sup>(19-23)</sup>, as well as women's knowledge about prevention<sup>(24-26)</sup>.

A meta-analysis of the efficacy of interventions to increase adherence to the uptake of Pap smear exams among women from ethnical minorities in the United States pointed out community-based education as one of the most efficacious methods when allied to improved health services<sup>(27)</sup>.

Another study showed that using educational interventions with community laypersons facilitates an increase in screening rates through Pap smear exam; however, efficacy of educational interventions is minimized if there are barriers to access health services<sup>(28)</sup>.

#### **Media outreach work**

A study carried out with women in Wales, United Kingdom, showed that media articles play an important role in increasing the uptake of Pap smear exams<sup>(29)</sup>. Likewise, a quasi-experimental study with women in Southeast Asia found an increase in knowledge and adherence to exams through a thematic soap opera and the use of educational flyers<sup>(30)</sup>.

A controlled randomized survey with Hispanic women of Mexican origin in Houston and El Paso, Texas, and Yakima, Washington, USA, carried out through a project named AMI-GAS (*Ayudando a las Mujeres con Información, Guía, su Salud y Amor*), provides information on cervical cancer prevention in order to increase adherence to the exam uptake<sup>(31)</sup>.

### Community health agents

A study carried out with women in 19 small cities in São Paulo, Brazil showed that home visits by a community health agent was a useful intervention to attract women and increase adherence to Pap smear exams<sup>(32)</sup>. Likewise, a study carried out with 234 Vietnamese women living in the United States of America has also pointed out home visit educational interventions by health agents as efficacious to increase adherence to the exam<sup>(33)</sup>.

A controlled randomized survey comprising 286 women in Ohio, United States of America employing lay health counselors using home visits, telephone calls, and postcards showed improvement in adherence to Pap smear exams<sup>(34)</sup>. Another interventionist survey with Hispanic women living in the United States of America used educational toolkits through community health agents that were efficacious in reducing cultural barriers and increasing adherence to cervical cancer prevention<sup>(35)</sup>.

Another randomized controlled study carried out in the United States of America approaching 514 black, Latin, and Arab women, using community health agents to deliver education in health regarding cervical cancer prevention, increased those women's adherence to prevention<sup>(36)</sup>. Similarly, an interventionist survey with 162 Hispanic women living in the border region of New Mexico, the United States of America, aged from 29 to 80 years, showed participation in education in health delivered by community health agents, and 76.3% have adhered to prevention and undergone the exam<sup>(37)</sup>.

### Partnerships

Integration between academia and the community can help cervical cancer prevention because it reduces social barriers<sup>(38)</sup>.

Partnership between health services and faith-based entities is also a successful option, as observed in a study performed in a rural area in Florida with Hispanic women<sup>(39)</sup> and in an interventionist study carried out in Zambia<sup>(40)</sup>. Both studies showed positive results regarding increased adherence to prevention.

Similarly, a study based in Atlanta, Georgia, United States of America with African American women carried out using an educational intervention named "With Love We Learn" (WLWL) that was adapted to the culture of these women and used in faith-based communities, observed an increase in these women's adherence to cervical cancer prevention<sup>(41)</sup>.

### Population-based screening

A survey carried out in 22 European countries showed that the use of population-based preventive programs is more efficient than opportunistic screening<sup>(42)</sup>.

### Multiple interventions

This category comprises scientific studies using more than one type of intervention, where some created specific combinations of interventions and then evaluated results.

A systematic review study about interventions to improve Asian women's adherence to cervical cancer prevention found that combining multiple strategies is more efficacious than using isolated strategies. The study pointed out strategies such as education in health, cultural awareness-building,

media campaigns and the use of printed material, where a combination of group education and the availability of Pap smear exams is the most efficacious one<sup>(43)</sup>.

Another survey showed evidence of efficacy regarding an increase in women's participation in cervical cancer prevention using interventions such as group education, dissemination of information to the media, reduction of costs for women, and reduction of health service structural barriers<sup>(44)</sup>.

Interventions such as reminders and reductions in health service barriers are recommended to develop implementation guidelines on the increase in cervical cancer screening<sup>(45)</sup>.

According to a qualitative survey carried out in Indonesia, dissemination of information about prevention, use of home visits by community health agents, and structural changes in health systems such as offering free exams are efficient interventions to increase women's adherence to cervical cancer prevention<sup>(46)</sup>.

Another systematic review study to evaluate interventions oriented toward increased cervical cancer screening found that reminders and incentives to women, use of communication means, individual education in health, and reduction of structural barriers in health services are options that enable increasing adherence to prevention<sup>(47)</sup>.

## DISCUSSION

Groups of interventions developed to increase women's adherence to the uptake of Pap smear exams presented herein aim to facilitate their evaluation and analysis, focusing also on their applicability to the Brazilian reality.

The fact that most publications on interventions are oriented to women in developing countries is explained by the high incidence of cervical cancer in those countries, resulting from low adherence of women to prevention programs and/or potential structural problems in these programs, which also leads to a higher number of deaths<sup>(1)</sup>.

Interventions presented herein pointed out positive results that assist women's adherence to the uptake of cervical cancer preventive exams. Among these interventions, the use of case managers, training of community members, and partnering with sectors other than health are feasible actions that are provisions set forth in an Executive Order by the Brazilian Health Ministry aimed at reorganizing basic care<sup>(48)</sup>.

Considering that the family health team works in restricted area with delimited populations, it employs home visit, accountability by the served population, training to the population, and partnering with other societal segments<sup>(48)</sup>, these interventions are implicitly developed, although they are not widely disseminated.

Educational activity is the most popular intervention in scientific articles used to increase women's adherence to the uptake of Pap smear exams. The activity is well accepted by women's population and entails low costs to health services. It can be performed in group or individually in Health Units, through home visits and/or in other environments, by health professionals or community members duly trained.

Educational approaches related to the promotion of cervical

cancer screening must be part of the health teams' work<sup>(3)</sup>, and studies show that knowing about cervical cancer and prevention is associated with higher adherence to the uptake of exam<sup>(49-50)</sup>. This highlights the importance of such approaches.

Reminders, telephone calls, and invitation letters are interesting interventions; however, changes in telephone numbers and home addresses are a constant variable that hinders efficient use. In addition, one should consider that women's attendance at health services may not change their awareness about the importance of prevention and, in this way, fail in changing their health habits. As such, adherence should not be reduced to complying with professional recommendations. Rather, it should be extended to the result of exposure to situations of learning and tackling issues that interfere in individuals' quality of life<sup>(51)</sup>.

The use of media to disseminate information to the population is an important tool for education in health and can be used in different ways, such as television, radio, the Internet, and others, reaching large numbers of individuals and having positive impacts on cervical cancer prevention.

Thus, communication is a key strategy in the process of disseminating information about health topics, as it assists in promoting social equality and maximizes contact of health agents with main target audiences<sup>(52)</sup>.

Regarding the type of screening in the Brazilian health services, most Pap smear exams are done in an opportunistic way, while the screening impact evaluation is focused only on the coverage of populations undergoing the exams<sup>(53)</sup> rather than on the total population of women. These facts should be considered to be issues to be thought over and reviewed.

The articles examined<sup>(27-28,45-47)</sup> show the need for proper organization of health services to increase the participation of women in cervical cancer screening programs.

In countries developing cervical cancer prevention programs that are well organized, nearly 80% of new cases are avoided<sup>(54)</sup>. Proper organization of the program should comprise integral care to women; referral and counter-referral

services; physical and material infrastructure to provide adequate care; trained professionals committed to the population; and training members of the community in a responsible and consistent way.

In this context, considering the existence of different efficacious and consistent interventions to increase adherence to cervical cancer prevention programs most of them with a low impact on the costs and resources of health services<sup>(55)</sup> the value of using the interventions approached herein is evident as a way to implement the Cervical Cancer Prevention Program in Brazil.

## CONCLUSION

The authors found that most of the articles published aimed at evaluating interventions to increase women's adherence to the uptake of Pap smear exams are focused on women from developing countries, due to the high incidence of cervical cancer in those localities, lack of adherence to the prevention program, and structural problems in health services.

Interventions used to implement cervical cancer prevention programs include use of case managers, telephone contact, invitation letters, educational activities, media outreach, community health agents, and partnerships. All of these increase women's participation and bear low financial cost. However, there is a clear need to gather these interventions into the proper structuring of health services and performance of population-based screening.

Results of this scientific production provide inputs to the managerial and care areas of health services. However, the specific features of each locality must be considered to allow the use of interventions more responsive to the local reality.

As a study limitation, we can mention the fact that being efficacious abroad does not ensure that strategies will be efficacious in our country, and thus actions should be implemented and evaluated.

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