



Effective interventions for the adoption of HIV prevention measures among Latin American migrants: a systematic review


Intervenciones efectivas para la adopción de medidas en migrantes latinoamericanos para la prevención de VIH: una revisión sistemática

Intervenções eficazes para medidas de prevenção do VIH entre migrantes latino-americanos: uma revisão sistemática

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ABSTRACT

Introduction: The migrant population experiences diverse circumstances that influence sexual risk behavior, rendering them particularly susceptible to HIV. Objective: To identify effective interventions for promoting the adoption of HIV prevention measures among Latin American migrants. **Methodology:** A search was conducted on PubMed-Medline, Scopus, EBSCO-Host, and SciELO for articles published between 2000 and 2022, using the keywords Migrants, Sexual Behavior, HIV, Condom, and HIV Testing, alongside filters provided by the ISSG Search Filter Resource. Data extraction was performed using the Critical Appraisal Tools 3.0 platform, followed by a narrative synthesis of the variables. **Results:** Five articles were included, revealing beneficial outcomes from interventions targeting various factors relevant to HIV prevention. The studies focused on migrant populations residing in different US states, including Texas, North Carolina, and Florida, which are among the top ten states with the highest Latino migrant populations. **Conclusion:** This review allowed us to describe effective interventions for HIV prevention among Latin American migrants, highlighting at least two interventions with well-defined methodologies conducive to reproducibility. One aspect that could enhance the findings of future approaches to the literature is expanding the databases and considering the gray literature, as its inclusion is crucial in the review process.

Keywords: Transients and Migrants; HIV; Sexual Behavior; Systematic Review.

RESUMEN

Introducción: La población migrante vive diferentes circunstancias que determinan el comportamiento sexual de riesgo volviéndose especialmente vulnerables a la adquisición del VIH. **Objetivo:** identificar las Intervenciones efectivas para la adopción de medidas en migrantes latinoamericanos para la prevención de VIH. **Metodología:** La búsqueda se llevó a cabo en PubMed-Medline, Scopus, EBSCO-Host y SciELO entre los años 2000-2022, las palabras clave fueron Migrantes, Conducta sexual, VIH, Condón, Pruebas de VIH y se incluyeron los filtros del ISSG Search Filter Resource. Se extrajeron los datos utilizando la plataforma de Critical Appraisal Tools 3.0, Se realizó una síntesis narrativa de las variables. **Resultados:** Se incluyeron cinco artículos. Las intervenciones arrojaron resultados beneficiosos con diversos factores relacionados a la prevención del VIH. Los estudios abordaron población migrante establecida en diferentes estados de USA, tales como Texas, Carolina del Norte y Florida, figurando estos dentro de los 10 estados con más migrantes latinos. **Conclusión:** Esta revisión permitió describir intervenciones efectivas para la prevención del VIH en migrantes latinoamericano, ofrece al menos dos intervenciones efectivas que cuentan con una metodología clara que permite su reproducibilidad. Algo que podría mejorar los hallazgos para futuros abordajes de la literatura, es ampliar las bases de datos y considerar la literatura gris, es importante que se considere dentro de los procesos de revisión.

Palabras clave: Migrantes; VIH; Conducta Sexual; Revisión Sistemática.

RESUMO

Introdução: A população migrante vive circunstâncias diferentes que determinam o comportamento sexual de risco, tornando-a especialmente vulnerável à aquisição do VIH. **Objetivo:** identificar intervenções eficazes para medidas de prevenção do VIH em migrantes latino-americanos. **Metodologia:** A pesquisa foi realizada no PubMed-Medline, Scopus, EBSCO-Host e SciELO entre os anos 2000-2022, as palavras-chave foram Migrantes, Comportamento sexual, HIV, Preservativo, Teste de HIV e incluiu o recurso de filtro de pesquisa ISSG. Os dados foram extraídos utilizando a plataforma Critical Appraisal Tools 3.0. Foi realizada uma síntese narrativa das variáveis. **Resultados:** Foram incluídos cinco artigos. As intervenções mostraram resultados benéficos com vários fatores relacionados com a prevenção do VIH. Os estudos abordaram populações migrantes estabelecidas em diferentes estados dos EUA, como Texas, Carolina do Norte e Flórida, que estão entre os 10 estados com maior número de migrantes latinos. **Conclusão:** Esta revisão descreve intervenções eficazes para a prevenção do VIH em migrantes latino-americanos, oferecendo pelo menos duas intervenções eficazes com uma metodologia clara que permite a reprodutibilidade. Algo que poderia melhorar os resultados para futuras abordagens à literatura é alargar as bases de dados e ter em conta a literatura cinzenta, pois é importante que esta seja considerada no processo de revisão.

Palavras-chave: Migrantes; HIV; Comportamento Sexual; Revisão Sistemática.

INTRODUCTION

The Human Immunodeficiency Virus (HIV) is recognized as one of the most significant public health challenges at a global level, with the World Health Organization (WHO) reporting that over 40 million lives have been lost due to HIV-related causes since the virus emerged.¹ In 2022 alone, more than 650,000 deaths and 1,500,000 new infections were reported. It is estimated that by the end of 2021, over 34 million people were living with HIV.

The Joint United Nations Programme on HIV/AIDS (UNAIDS) has proposed a new global target of 95-95-95 for 2030. However, it is crucial to increase the efforts to achieve these targets, as it is projected that approximately 7.7 million deaths will occur in the next 10 years. Additionally, an increase in new infections is expected as a consequence of the slowdown in HIV programs caused by the COVID-19 pandemic.¹

According to the Pan American Health Organization (PAHO), the issue of HIV has increased by 21% in the Americas since 2010. It is estimated that by 2019, 3.7 million people were living with HIV in the region, with 23% being unaware of their serological status. This is especially true in certain key populations.²

The International Organization for Migration (IOM) notes that since the Fast-Track Strategy to end HIV (2016-2021), migrants have been included among key populations—along with youth, men who have sex with men (MSM), intravenous drug users, sex workers, transgender people, and prisoners. This is explicitly mentioned in objective 6 of the strategy: “90% of key populations including migrants have access to HIV combination prevention services.”³

The migrant population is exposed to several circumstances that may result in risky sexual behaviors, making them particularly vulnerable to HIV. Migration itself influences the decision to have unprotected sex, as the mobility associated with migration often leads individuals to leave their primary partners in their place of origin and engage in casual sexual relationships, having multiple sexual partners during transit.⁴ Alcohol and illicit drug consumption, unfavorable attitudes towards condom use, and conditions imposed by the migratory situation contribute to risky sexual behaviors, increasing their vulnerability to HIV infection. Migrants are thus three times more likely to acquire HIV than individuals who remain in their place of origin.⁵⁻⁶

The action plan of PAHO for the prevention and control of HIV and sexually transmitted infections (STIs), 2016-2021, emphasizes the need for targeted interventions for vulnerable populations to accelerate the end of the HIV pandemic.⁷ In 2021, the United Nations General Assembly endorsed a political declaration on HIV and AIDS, aiming to eliminate inequalities and achieve the conditions to end AIDS by 2030. Regarding the effective implementation of HIV combined prevention, the declaration commits to ensuring that by 2025, 95% of people at risk of contracting HIV have access to appropriate, person-centered, effective, and widely used combined prevention programs.⁸

Given the need to implement effective programs to reduce the risk of HIV among migrant populations, this study proposes a systematic review aimed at identifying effective interventions for the adoption of HIV prevention measures among Latin American migrants. The goal is to answer the following review question: Which interventions have proved to be effective in the prevention of HIV among Latin American migrants?

METHODOLOGY

This systematic literature review was conducted following the recommendations by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 guidelines.⁹

Search Strategy and Article Selection

Eligibility Criteria: The articles identified were subjected to three inclusion criteria: 1) original articles that included intervention results; 2) the outcome was the sexual risk behavior for HIV; and 3) studies involving migrant populations originally from Latin America. As for the exclusion criteria, studies that did not address condom use and/or HIV testing in their variables were excluded, as well as those not available in full text. Additionally, the references of the included articles were reviewed to identify additional relevant studies.

Sources of information: The search was conducted using the following databases: PubMed-Medline, Scopus, EBSCO-Host, and SciELO, covering the years 2000-2022.

Search Strategy: The keywords for the search were extracted from DeCS¹⁰ and MeSH¹¹ in Spanish and English, respectively. The keywords were: *Migrantes, Conducta sexual, VIH, Condón, Pruebas de VIH* (Migrants, Sexual behavior, HIV, Condom, HIV testing), which were consulted in Spanish in DeCS, and subsequently identified in MeSH in English. These keywords were then applied to carry out the search in the aforementioned databases, using Boolean operators (AND, OR). Additionally, the ISSG Search Filter Resource was employed to refine the search according to the study design (randomized controlled trials and/or quantitative studies).¹²

Reproducibility and Methodological Quality

Study Selection Process: This review emphasizes reproducibility in the search, selection, inclusion, and extraction of information. The complete search strategy in PubMed was as follows: "clinical trial"[Publication Type] OR "Clinical Trials as Topic"[mesh] OR "Double-Blind Method"[Mesh] OR (randomized[TIAB] AND (trial[TIAB] OR trials[tiab])) OR ((single[TIAB] OR double[TIAB] OR doubled[TIAB] OR triple[TIAB] OR tripled[TIAB] OR treble[TIAB] OR trebled[TIAB]) AND (blind*[TIAB] OR mask*[TIAB])). Articles were initially screened by their titles; those identified as experimental studies were considered for abstract review and subsequently for full-text review if deemed appropriate.

Data Extraction Process: Data were extracted using the Critical Appraisal Tools 3.0 platform, which facilitated the assessment of study quality using the clinical trials tool.^{13,14} As Hultcrantz¹⁴ asserts the quality or certainty of studies provides confidence that the estimates of the intervention effects are accurate. Discrepancies were resolved through consensus between the main researcher and the team of reviewers. For the analysis, the quality of the studies was determined based on the extracted data. Subsequently, the extracted data and the efficacy of each study were compared. The risk of bias was assessed by analyzing the blinding methods used in each study.

Information Analysis

A narrative synthesis of the variables was conducted and then presented in descriptive tables that included information on: Author(s) and year of publication; description of the study: design, objectives, location, and period; Research question: population, intervention, comparison, analyzed results, and duration of follow-up; Method: sample, characteristics of the intervention, characteristics of the control treatment, blinding method, and post-randomization losses; Results: beneficial clinical effects and adverse effects. Additionally, tables display the summary of aspects such as recruitment site, study setting, community participation, theoretical framework, and formative research.

RESULTS

Electronic Search and Study Selection

The electronic search conducted using databases and repositories resulted in 571 articles being identified: PubMed-Medline 386; Scopus 149; EBSCO-Host 17; SciELO 19. The titles and abstracts of these studies were uploaded to the reference management software Mendeley for systematization. After removing 174 duplicates, 397 articles remained for independent screening. Subsequently, after reviewing the titles and abstracts, 380 articles were excluded, leaving 17 articles for evaluation. Of these, 12 were excluded for not meeting at least one of the inclusion criteria. Finally, five articles were included in the review.¹⁴⁻¹⁸ Figure 1 shows the PRISMA flowchart reflecting the selection process.

Description of the Studies

All the selected articles addressed interventions conducted in various locations across the United States, such as North Carolina, Florida, and Texas, and were all published between 2007 and 2020. The study designs included three randomized controlled trials,¹⁶⁻¹⁸ one quasi-experimental pre- and post-test study, and one pilot trial.¹⁵⁻¹⁹ Overall, the studies aimed to assess the efficacy and/or impact of interventions or programs around HIV-related knowledge and attitudes on the reduction of risky sexual behaviors, the increase of condom use, and the promotion of HIV testing.¹⁵⁻¹⁹

Research Question: Population, Intervention, Control, and Outcomes

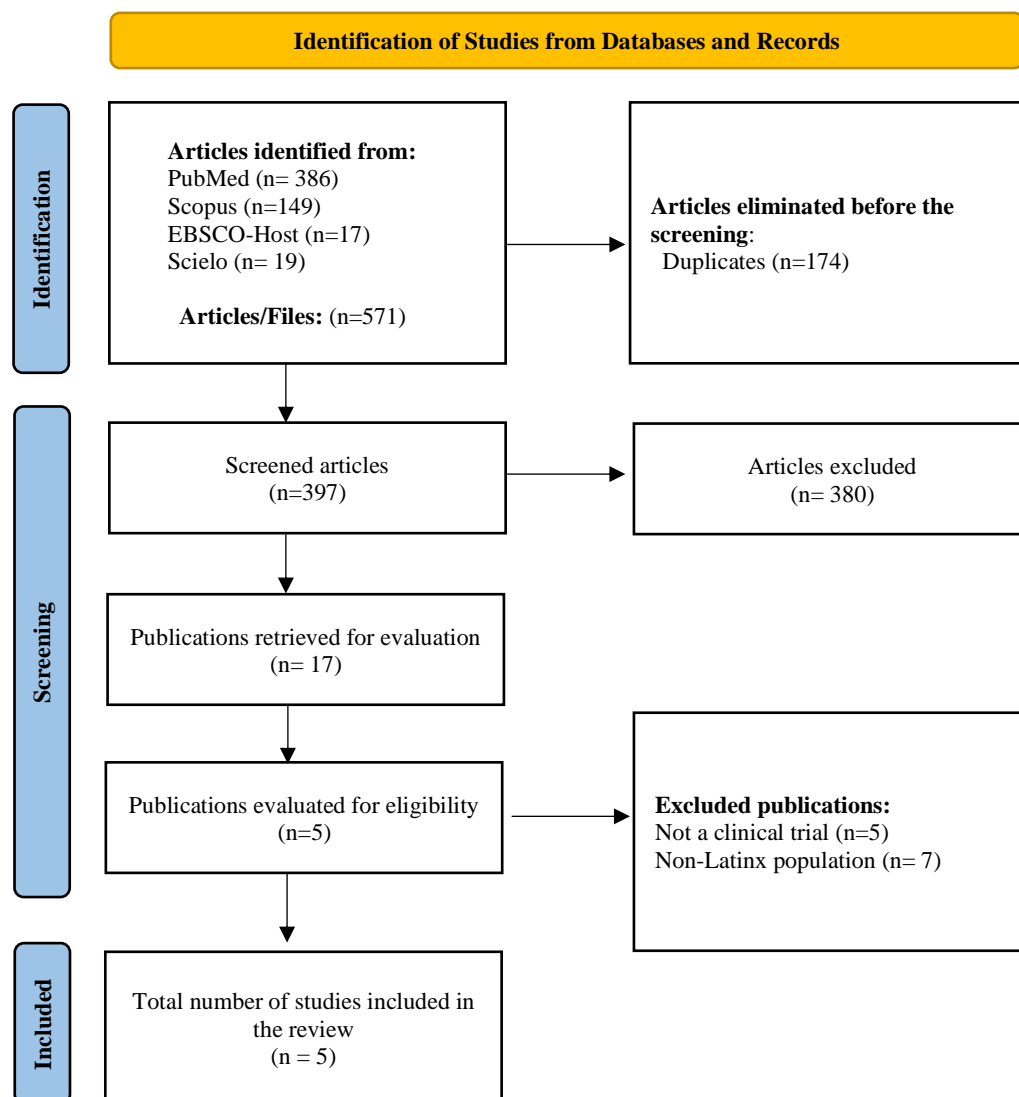
The studied population consisted of men and/or women of Latin American origin and/or Mexican-American individuals (with dual nationality) residing in the USA. All five studies included interventions; however, only three included control groups for comparison.¹⁷⁻¹⁸ The primary outcomes were: HIV-related knowledge,^{15,18-19} HIV-related attitudes,¹² self-efficacy for HIV prevention,¹⁸⁻¹⁹ condom use,¹⁶⁻¹⁹ and HIV testing.¹⁶⁻¹⁷ The follow-up period varied across studies, ranging from three to 18 months.¹⁵⁻¹⁹ One of the studies did not include a follow-up period, which was justified by its quasi-experimental design.¹⁵

Method: Sample, Intervention Characteristics, Control Treatment Characteristics, Blinding Method, and Post-Randomization Losses

The samples varied across studies: a total of 946 migrant men and women from various parts of Latin America participated, predominantly from Mexico, El Salvador, Guatemala, Honduras, and Nicaragua.¹⁵⁻¹⁹ One study included underaged participants.¹⁵ The interventions were implemented in 1 to 4 brief sessions, lasting from 1 to 2.5 hours, with generally small and peer-led groups.¹⁶⁻¹⁹ The control group sessions primarily covered education on prostate, lung, and bowel cancer, sanitary hygiene strategies, living in crowded conditions, first aid, and skin problems.¹⁶⁻¹⁸

Only two studies reported blinding methods. One study that included migrant populations grouped in soccer teams worked with teams from opposite regions (south and north) to avoid contamination between groups. A-SEMI reported using a single-blind technique.¹⁶⁻¹⁸ Post-randomization losses were generally low, ranging from three to 12 participants, mainly due to participants moving residence, changing teams, or ceasing to attend the intervention setting.¹⁶⁻¹⁷ Other losses were due to incomplete data provided by participants.¹⁸ Table 1 provides a general description of the included studies and their characteristics.

Figure 1. Flowchart for the search and selection of studies on interventions for HIV prevention in Latin American Migrants



Source: Developed by the authors from the PRISMA flowchart.⁹

Table 1. Description of the studies on interventions for HIV prevention.

Authors	Year of Publication	Description of the Study					Research Question			
		Design	Objectives	Location	Period	Population	Intervention	Comparison	Main Results	Duration of Follow-Up
Hovey et al	2007	Quasi-Experimental Pre- and Post-test	To assess the impact of the "Infórmate" theater program for adolescents on HIV/AIDS knowledge and attitudes among audience members of various ages within the agricultural worker community.	Farmworker camps in Texas, USA.	ND ^a	Mexican-American Farmworkers (both men and women)	"Infórmate" Theater Program	ND ^a	Knowledge of HIV HIV-related attitudes	ND
Rhodes et al.	2009	Randomized Controlled Trial	To assess the efficacy of a pilot intervention by non-professional health advisors to increase condom use and HIV testing among Latino men.	North Carolina, USA.	October 2003 to March 2007	Heterosexual Latino men	HoMBReS: <i>Hombres Manteniendo Bienestar y Relaciones Saludables</i>	Cancer Intervention	Use of condom HIV testing	18 months
Rhodes et al.	2011	2-Arm Randomized Controlled Trial	To evaluate the efficacy of an HIV prevention intervention to increase condom use and HIV testing among heterosexual Latino immigrants.	Multicenter, Florida, USA.	ND ^a	Latino men living in rural areas	HoMBReS-2	Cancer Intervention	Use of condom HIV testing	3 months
Sánchez et al	2014	Randomized Controlled Trial	To evaluate the effectiveness of a community intervention to reduce risk behaviors and improve the factors that promote HIV preventive behaviors.	Homestead, Florida, USA.	Nov 2008-Mar 2010	Latin American immigrant workers	Adapted-Stage Enhanced Motivational Interviewing (A-SEMI)	Health Promotion Condition	Use of condom Knowledge on HIV prevention Barriers to the use of condoms Self-efficacy in the use of condom	3 and 9 months
Rojas et al	2020	Pilot Study	To develop a community action plan to prevent HIV among LIF ^b by improving access to HIV/AIDS prevention programs and bolstering the capacity of LIFs to respond to HIV at the local level, through the provision of tools to educate and empower other women.	South Miami, USA	Between 2014 and 2016	Latina Immigrant Farmworkers	SEPA (<i>Salud /Health, Educación /Education, Prevención /Prevention, Autocuidado /Self-care</i>).	ND ^a	HIV-related knowledge Self-efficacy and HIV prevention Safe sex intentions Use of condom	6 months

Source: Developed by the authors from public data. ^aND. No Data; ^bLIF. Latina Immigrant Farmworker

Table 1 (cont.). Description of studies on interventions for HIV prevention.

Sample	Method				Results		Quality of the Study
	Characteristics of the Intervention	Characteristics of the Control Treatment	Blinding Method	Post-Randomization Losses	Beneficial Clinical Effects	Adverse Effects	
71 participants of varying ages: 59 % men, 41% women, with 53% being adults.	Theater performance lasting approximately 1 to 1.5 hours, addressing topics related to HIV.	ND ^a	ND ^a	ND ^a	The participants manifested having significantly increased knowledge about HIV/AIDS in each variable after the performance. The significance levels range between $p = < 0,01$ and $< 0,0001$).	ND	Medium
222 participants: 135 from México, 31 from El Salvador, 15 from Guatemala, 13 from Honduras, 4 from Colombia, and 14 from other countries.	Fifteen <i>Navegantes</i> were trained and worked with their teams for 18 months on HIV-related topics.	Sessions about cancer (prostate, lung, and bowel)	The teams were from the southern regions, and the control group included teams from the north, in order to avoid contamination between teams.	The participants fluctuated due to residency or team changes, or because they stopped playing soccer.	Increase in the use of condoms in every sexual intercourse. Baseline was 43.2% and post intervention was 65.6%. Increase in HIV testing: 9.0% baseline versus 64.4% post intervention.	ND	High
142 participants in 2 groups: El Salvador 19, Guatemala 19, Honduras 7, México 84, Nicaragua 2, other 21.	Four peer-led sessions where HIV prevention information was shared.	Sessions about cancer (prostate, lung, and bowel)	ND ^a	Three participants withdrew their participation.	The participants of the intervention increased the use of condoms (AOR = 3.52; [CI] of 95% = 1.29-9.63; $P = 0.014$). Regarding HIV testing, the intervention participants increased their testing (AOR = 5.18; CI 95% = 2.26-11.9; $P = 0.001$).	None	Medium
278 participants: 43.2% from México, 20.1% from Guatemala, 10.1% from Honduras, and 26.6% from other countries.	Four 2.5-hour interactive sessions for two consecutive weeks, using components of Motivational Interviewing.	General health strategies such as hygiene and life in overcrowded conditions, first aid, and skin problems.	Single-Blind	Twelve participants were excluded from the analysis due to incomplete data.	The A-SEMI participants were 4.6 times more likely to use condoms in the last 90 days ($p < 0,001$) and 3 times more likely during the last 30 days ($p < 0,001$). Findings showed increased knowledge about HIV ($p = 0,009$), fewer barriers to the use of condoms ($p < 0,001$), and higher self-efficacy in condom use ($p < 0,001$).	None	High
233 participants: 59.7% Mexican, 28.8% from Central America and 11.6% from South America.	Three 2.5-hour sessions led by a facilitator for 3 weeks, offered to 22 small groups of 8 to 10 Latina women.	ND ^a	ND ^a	ND ^a	The percentage of participants using condoms increased from 19.7% to 33.1% ($p < 0,001$). The probabilities of using condoms were three times higher (AOR = 3.21, $p = 0,001$). Significant increase in knowledge on HIV (aOR=3.86, $p < 0,001$). Significant increase in condom use self-efficacy (aOR=1.19, $p = 0,018$).	None	Medium

Source: Developed by the authors from public data. ^a ND. No Data; ^b LIF. Latina Immigrant Farmworker

Beneficial Clinical Outcomes

As shown in Table 1, the interventions resulted in beneficial outcomes across various factors that positively correlate with HIV prevention. This is particularly evident regarding HIV-related knowledge, proved by the increased knowledge the participants exhibited on HIV following the interventions.^{15,18-19} In one of the studies, participants reported fewer perceived barriers to condom use post-intervention.¹⁸ As for their intentions to negotiate safe sex, one study showed a significant increase after the intervention.¹⁹ Another beneficial outcome was the significant increase in self-efficacy for condom use.¹⁸⁻¹⁹

Regarding behaviors that favor HIV prevention, such as condom use and HIV testing, there were improvements compared to baseline measures. Notably, at the 90-day follow-up, there was an increase in both the use and likelihood of condom use compared to the control group.¹⁶⁻¹⁹ Additionally, there was a significant increase in HIV testing in the last 12 months compared to the baseline measures.¹⁷

Quality of the Studies

Table 1 also shows the quality assessment of the studies developed by the authors. Of the three randomized controlled trials (RCTs), two were considered high quality^{16,18} as they met the evaluated criteria, while one was rated as medium quality, mainly due to unclear information regarding randomization and post-randomization losses.¹⁷ One study was quasi-experimental with pre and post-test measurements, and another was a pilot trial; both lacked control groups. Therefore, the blinding method and post-randomization loss categories were not applied in their evaluations; however, they were assigned a medium quality level.^{15,19}

Recruitment, Setting, Community Participation, Theoretical Framework, and Formative Research

Table 2 presents aspects such as recruitment, setting, community participation, theoretical framework, and formative research. It can be observed that recruitment for the studies was conducted in settings well-known and frequently visited by the participants. The studies were advertised using flyers that were distributed in neighborhoods door to door, directly inviting people who were recommended by community leaders. Moreover, networks within neighborhoods were utilized, along with businesses frequented by Latin Americans, sports leagues, restaurants, and academic spaces.¹⁵⁻¹⁹

Regarding the settings, some studies were conducted in community locations facilitated by community organizations.^{16-17,19} They were also carried out within offices established by project members, who provided food and transportation to the participants.¹⁸⁻¹⁹ Participants were even approached in their everyday environments, such as farmworker camps and/or during soccer league training sessions.¹⁵⁻¹⁶

Four of the interventions were developed with a Community-Based Participatory Research (CBPR) approach, involving various community members, representatives from different organizations, and academic researchers.¹⁶⁻¹⁹

Table 2. Recruiting, setting, community participation, theoretical framework, and formative research of the studies.

Reference	Intervention	Recruitment Site	Setting of the Study	Community Participation	Theory/Model	Formative Research
Hovey et al. (2007)	<i>Infórmate</i> (Theater Program)	The recruitment of adolescent farmworkers trained as peer health educators was conducted door-to-door based on recommendations from migrant education teachers, community representatives, parents, and farmers.	Farmworker Camps	A health education program implemented by Migrant Health Promotion that disseminates information about HIV/AIDS and other health-related topics among Mexican migrant farmworkers in Michigan.	Use of theater and education for health	Theater performances with peer health educators, following a training model covering sexuality, reproductive health, sexually transmitted infections, HIV/AIDS, substance abuse, violence, and occupational health and safety.
Rhodes et al. (2009)	HoMBRES	Soccer teams from the Latin American rural soccer league.	Local restaurant owned by Latin American people, and rural Latin American soccer league	Community-Based Participatory Research (involving equitable collaboration among community members, organizational representatives, and academic researchers).	Social Cognitive Theory and Education for Empowerment.	Peer-led, under the guidance of a lay health advisor.
Rhodes et al. (2011)	HoMBRES-2	Recruitment materials were distributed, and Latino men were screened for eligibility at stores, laundromats, businesses employing a large number of Latinos, sports leagues, English classes, communities and housing complexes, and Latin American restaurants.	Saturdays and Sundays within the community.	Community-Based Participatory Research (involving equitable collaboration among community members, organizational representatives, and academic researchers).	Social Cognitive Theory and Education for Empowerment.	Peer-led in small groups, the program is interactive and activity-based (relationship and trust building, didactic teaching, role-playing, group discussion, skill development, practice, and feedback)
Sánchez et al. (2014)	Health Project (A-SEMI)	Through neighborhood networks and migrant camps.	FWAF Homestead office. Transport and food were provided every session.	A Community-Based Participatory Research (CBPR) project.	Social Cognitive Theory, enhanced with peer education and motivational enhancement therapy	Focus groups comprised of 83 community members and key community partners were convened to discuss the factors that increased their risks of contracting HIV.
Rojas et al. (2020)	<i>Salud, Educación Prevención y Autocuidado</i> (SEPA)	Through flyers distributed in neighborhood settings and outreach activities on the streets, as well as by word of mouth.	A private office in a community agency and two other community settings facilitated by the community organization.	A Community-Based Participatory Research (CBPR) project in collaboration with farmworkers.	Social Cognitive Theory	Skill-building exercises (e.g., role-playing, skill demonstrations, group discussions)

Source: Developed by the authors.

Most studies in this review were theoretically grounded in Bandura's Social Cognitive Theory,¹⁶⁻²⁰ though some combined it with other theories such as Education for Empowerment,¹⁶⁻¹⁷ peer education, and motivational enhancement therapy.¹⁸ One study employed theater as a didactic strategy in the health field, presenting an attractive and innovative approach to fostering critical thinking.¹⁸

Additionally, all studies mentioned the process and use of formative research, employing various methods, with peer education being prominent.¹⁵⁻¹⁷ Small focus groups were also used.¹⁶⁻¹⁹

DISCUSSION

This review analyzed scientific articles on interventions, published across various databases and involving a large number of participants who were involved in programs aimed at improving their HIV-related knowledge and attitudes, self-efficacy for HIV prevention, condom use, and HIV testing. All the analyzed studies were carried out in the USA, a country that hosts two out of every three Latin American immigrants. This means that, of the 59 million immigrants in the USA, approximately 26 million are Latin American.²¹⁻²²

The studies focused on migrant populations in different states such as Texas, North Carolina, and Florida, which are among the top 10 states with the highest number of Latin American migrants.²³ While the USA is undoubtedly a key destination for Latin American migrants, it is crucial that efforts to reduce sexual risk and prevent HIV start being implemented in transit countries like Mexico. Mexico serves as the gateway to the USA, with an estimated 11 million people transiting through this territory and Central American countries with returning, transit, and destination migrant populations.^{22,24}

The majority of the studies were randomized controlled trials (RCTs). According to the CONSORT statement, a well-executed RCT design offers the best scientific evidence on the effects of health interventions. Conversely, inadequate or poorly developed methodologies can skew results and provide biased estimates of an intervention's effectiveness.²⁵ Only two of the studies in this review were rated as high quality for accurately adhering to RCT methodologies.^{16,18}

In addition to RCTs, other research strategies have been developed for migrant populations, such as culturally adapting HIV prevention interventions. Culturally grounded training and educational approaches have been found effective, particularly in increasing condom use.²⁶

Of the interventions analyzed in this review, three had an intervention group and one had a control group. Control groups are highly relevant when assessing the effectiveness of an intervention, as they allow for comparison of the effects in each group. Ideally, it is suggested that a placebo with similar characteristics to the experimental group be provided, although this is not mandatory.²⁷

It is also important that interventions have follow-ups to verify behavioral change. There are different stances regarding the follow-up length: for example, according to Prochaska and DiClemente, a behavioral change lasts more than six months, and up to five years could pass without the person relapsing into the previous behavior.²⁸ If we agree with this statement, the follow-up should be at least six months to ensure the intervention's effectiveness. Of the articles analyzed in this review, the two evaluated as high-quality conducted adequate follow-ups according to the theory.^{16,18} The study that did not mention a follow-up uses a quasi-experimental design, in which case we cannot speak of an effective intervention. However, it does suggest a significant impact on the measured variables.¹⁵

Other aspects that are important for accurately measuring the effectiveness of an intervention are randomization and blinding. Of the studies in this review, only two mentioned using blinding methods, and three reported randomizations. It is worth mentioning that these are methods of RCT designs, although it has been proved that they are indispensable when discussing the effectiveness of an intervention.²⁹

The interventions mostly used Bandura's Social Cognitive Theory as their theoretical foundation. This theory emphasizes that environmental, cognitive, personal, motivational, and emotional factors interact with each other to achieve a behavior, and it advocates the idea that individuals can learn an

action and its consequences, deliberately deciding whether to perform it or not.²⁰ Bandura indicates that effective interventions for HIV prevention include theoretical elements that allow individuals to increase their motivation to achieve self-directed change such as consistent condom use and HIV testing.³⁰

Community-Based Participatory Research (CBPR) is a methodological strategy used for the development of the majority of the interventions synthesized here. This methodology is effective as it facilitates the successful transfer of knowledge from the scientific to the target community, with an expertise exchange that involves community members, social leaders, community organizations, and academic institutions. This results in successful outcomes in health programs aimed at preventing phenomena such as HIV.³¹

Many authors have carried out studies addressing HIV prevention based on condom use, a variable that aligns with the studies presented in this review. The results exhibit similarities, demonstrating that interventions enhance the adoption of measures for HIV prevention among migrants.³²⁻³⁴

CONCLUSIONS

This systematic review allowed for the identification of interventions that have proven to be effective in HIV prevention among Latin American migrants. It is important to note that the databases consulted contain limited literature on the efficacy of HIV interventions in this population. Furthermore, the few detected interventions are targeted at migrant populations that are settled at the destination of the most important migration route in the Americas.

There are at least two effective interventions that contain a clear and replicable methodology in this review. Therefore, it would be advisable to adapt them to other migrant populations, such as those in transit and/or returning. No interventions addressing these stages of the migratory phenomenon were identified. This study describes elements found in effective approaches through rigorous methodology, providing a perspective for the development of new interventions.

One aspect that could enhance future findings in literature reviews is expanding the databases and including gray literature to ensure clear information from all research conducted on this phenomenon.

Despite consulting reliable databases, a larger number of reviewers must participate in the process in order to evaluate more precisely and critically the methodological quality of the studies. This would ensure the validity and replicability of the results independently shown by each study.

Finally, it has been proven that community involvement in the development of interventions is beneficial for achieving the objectives of projects. Therefore, it would be appropriate for future intervention studies to accurately document the extent of community involvement to show the usefulness of this approach.

Additionally, it is essential to consider studies in broader research to demonstrate their effectiveness in Latin American migrants, so that policies aimed at HIV prevention in this population are bolstered.

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AUTHORSHIP:

JRAI: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Resources, Validation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing.

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