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# Mobile intervention applications as a strategy to prevent sexually transmissible infections: integrative review

Aplicaciones de intervención móvil como una estrategia para la prevención de infecciones sexualmente transmitidas: revisión integrativa

Aplicativos móveis de intervenção como estratégia de prevenção das infecções sexualmente transmissíveis: revisão integrativa

## ABSTRACT

**Objective:** to identify scientific production about mobile intervention applications as a strategy for the prevention of Sexually Transmitted Infections (STI). **Methodology:** Integrative Review with search in CINHALL, PubMed, LILACS and Medline databases. Of the 13 articles that comprised the sample, eight addressed the use of mobile intervention applications and five of partner recruitment. **Results:** Most studies have shown that users of mobile applications are young, men who have sex with men, and who have attended higher education. As for the vulnerability to STIs/AIDS, they have a greater multiplicity of partners and low adherence to condoms. As for the use of STI prevention applications, the intervention programs proved to be efficient, as they increased condom use and knowledge about STIs in the countries where they were tested. **Conclusion:** The applications represent a contributing factor for risk behaviors and STIs, however they can be great allies in prevention.

**DESCRIPTORS:** Sexually Transmitted Diseases; Mobile Applications; Vulnerability; Prevention.

## RESUMEN

**Objetivo:** identificar la producción científica sobre aplicaciones de intervención móvil como estrategia para la prevención de infecciones de transmisión sexual (ITS). **Metodología:** Revisión Integrativa con búsqueda en las bases de datos CINHALL, PubMed, LILACS y Medline. De los 13 artículos que comprendieron la muestra, ocho abordaron el uso de aplicaciones de intervención móvil y cinco de reclutamiento de socios. **Resultados:** La mayoría de los estudios han demostrado que los usuarios de aplicaciones móviles son jóvenes, hombres que tienen sexo con hombres y que han asistido a la educación superior. En cuanto a la vulnerabilidad a las ITS/SIDA, tienen una mayor multiplicidad de parejas y poca adherencia a los condones. En cuanto al uso de aplicaciones de prevención de ITS, los programas de intervención demostraron ser eficientes, ya que aumentaron el uso del condón y el conocimiento sobre las ITS en los países donde fueron probados. **Conclusión:** las aplicaciones representan un factor que contribuye a los comportamientos de riesgo y las ITS, sin embargo, pueden ser grandes aliados en la prevención.

**DESCRIPTORES:** Enfermedades Sexualmente Transmisibles; Aplicaciones Móviles; Vulnerabilidad; Prevención.

## RESUMO

**Objetivo:** identificar a produção científica acerca dos aplicativos móveis de intervenção como estratégia de prevenção das Infecções Sexualmente Transmissíveis (IST). **Metodologia:** Revisão Integrativa com busca nas bases CINHALL, PubMed, LILACS e Medline. Dos 13 artigos que compuseram a amostra, oito abordavam o uso de aplicativos móveis de intervenção e cinco de recrutamento de parceiros. **Resultados:** Majoritariamente os estudos mostraram que os usuários dos aplicativos móveis são jovens, homens que fazem sexo com homens, e que cursaram o ensino superior. Quanto à vulnerabilidade às IST/aids, possuem uma maior multiplicidade de parceiros e baixa adesão ao preservativo. Quanto ao uso dos aplicativos para prevenção das IST, os de intervenção mostraram ser eficientes, pois aumentaram o uso do preservativo e o conhecimento sobre IST nos países onde foram testados. **Conclusão:** Os aplicativos representam fator contribuinte para comportamentos de risco e IST, entretanto podem ser grandes aliados na prevenção.

**DESCRIPTORES:** Doenças Sexualmente Transmissíveis; Aplicativos Móveis; Vulnerabilidade; Prevenção.

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**S**exually Transmitted Infections (STIs) persist as a public health problem worldwide, and both the easy dissemination and underreporting of cases make it difficult to break the chain of transmission and develop preventive actions. Although they have other ways of spreading, the sexual route remains the main form of transmission of infections<sup>(1)</sup>.

It is estimated that around 357 million new curable STIs occur worldwide each year, such as chlamydia, gonorrhea, syphilis and trichomoniasis. Among incurable STIs, HIV is among the most prevalent and, globally, in 2017, there were 36.9 million people living with HIV. A large proportion of STI cases are among vulnerable populations: sex workers, men who have sex with men, injecting drug users, prison inmates, adolescents and migrant populations<sup>(2-4)</sup>.

These populations adhere to risk behaviors, such as: multiplicity of partners, inconsistent use of condoms, use of alcohol and other drugs, and early initiation of sexual activity, however the risk self-perception among some population segments is low, not awakening how much are vulnerable to STIs<sup>(5)</sup>.

In this population context and with the technological development provided by globalization, it has considerably changed the way people get to know and relate. The variety of sites and applications available for the search for partners has increased contact between people from different geographical areas, facilitating the search for sex and increasing the spread of Sexually Transmitted Infections (STIs), especially among the younger population<sup>(6)</sup>.

In this way, researchers have developed applications with the purpose of informing about STI prevention methods, sexual health, adherence to antiretroviral therapy, risk behaviors and diagnostic tests, aiming to reduce the spread of infections, known as mobile intervention applications<sup>(7,8)</sup>.

This study is of great relevance for health professionals, vulnerable populations, the scientific community, and society, as it compiles important information on the use of mobile applications and their relationship with STIs regarding vulnerability and prevention.

In view of the importance of seeking information about mobile applications in the context of Sexually Transmitted Infections and considering the different perceptions, this in-

tegrative review aimed to identify the existing scientific production about mobile intervention applications as a strategy for the prevention of Sexually Transmitted Infections.

**METHODOLOGY**

To achieve the proposed objective, a descriptive research of the integrative review (IR) type was carried out, which enables a broad and systematic analysis of the literature, in addition to analyzing and synthesizing scientific knowledge about the object of the study, for through the results of previous research, as well as identifying gaps that must be filled by conducting new studies<sup>(9)</sup>.

This integrative review followed the fulfillment of essential steps for its development: identification of the theme and selection of the research question; establishment of eligibility criteria; identification of studies on scientific bases; evaluation of selected studies and critical analysis; categorization of studies; evaluation and interpretation of results and presentation of data in the framework of the integrative review<sup>(9)</sup>.

The following guiding question was reflected: What is the scientific eviden-

ce on mobile apps for intervention in the prevention of Sexually Transmitted Infections from 2008 to 2018?

In the face of the growing evolution and development of social media, mobile applications invariably change over time. Thus, the search for recent studies involving the theme becomes imperative. It is noteworthy that studies involving intervention applications with the purpose of preventing and promoting health have been dated

to the last ten years, an eligible period for this review.

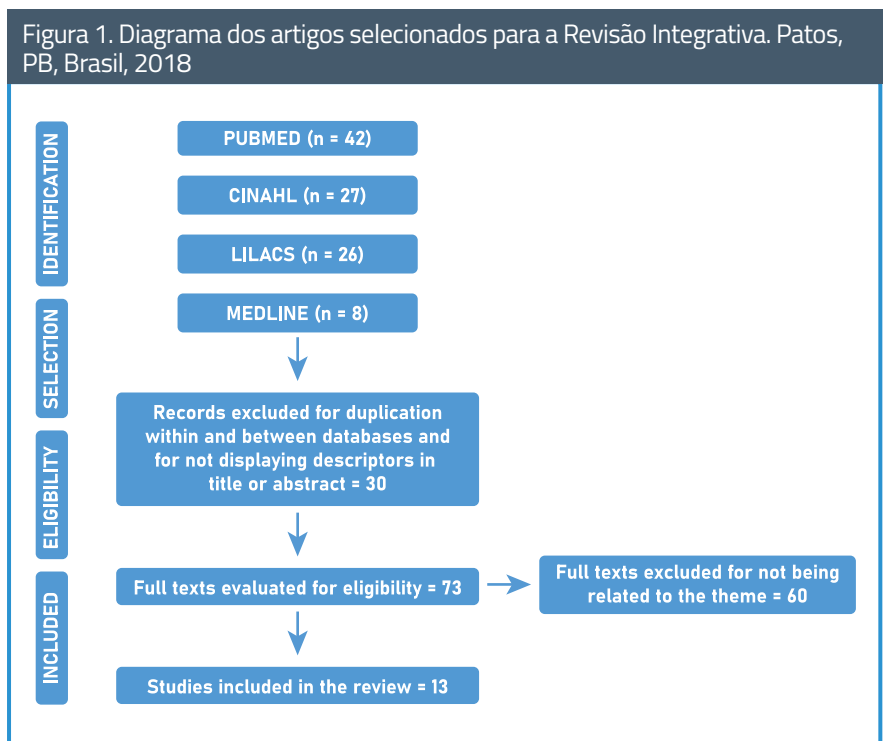
To compose the corpus of the research, articles were searched on the Internet from August to November 2018. In order to avoid bias in the selection of articles, during the search and selection phase, two researchers acted independently<sup>(10)</sup>.

The literature search of primary studies was carried out via the Internet, in the following databases: Pub-

Med, CINAHL, LILACS and Medline. To ensure a broad and careful search, the controlled descriptors and keywords were delimited in Thesaurus according to each database, that is, Medical Subject Headings (Mesh) and Health Sciences Descriptors (DeCS). The Boolean indicators AND and OR were used. For the search in the LILACS database, in addition to the Boolean operators, qualifiers were used, as shown in the table below (Chart 1).

Quadro 1. Estratégias de busca nas bases de dados PubMed, CINAHL, LILACS e Medline. Patos, PB, Brasil, 2018

BASES DE DADOS	ESTRATÉGIA DE BUSCA	PUBLICAÇÕES IDENTIFICADAS
Pubmed	sexually transmitted disease or sexually transmitted diseases AND mobile application or applications, mobile or Apps, Mobile AND prevention or prevention and control [Mesh]	42
CINAHL	sexually transmitted disease or sexually transmitted diseases AND mobile application or applications, mobile or Apps, Mobile AND prevention or prevention and control [Mesh]	27
LILACS	doença sexualmente transmissível/prevenção e controle OU doença de transmissão sexual/prevenção e controle OU infecções sexualmente transmissíveis/prevenção e controle AND aplicativos em dispositivos móveis OU aplicativos móveis OU aplicativos para dispositivos móveis [DeCS]	26
Medline	sexual infections AND mobile apps OR mobile applications OR apps [ key word] sexually transmitted disease or sexually transmitted diseases AND mobile application or applications, mobile or Apps, Mobile AND prevention or prevention and control [Mesh]	08



To select the sample, the following inclusion criteria were used: primary research articles, indexed in the databases selected for the study and published from 2008 to 2018, which addressed the theme in Portuguese, English or Spanish, available at whole. The exclusion criteria were to be a review and duplicity article within and in the bases used and not to present the descriptors in the title or in the summary of the selected articles. It should be noted that duplicate studies were considered only once.

One hundred and three articles were found, of which 30 were excluded due to duplication within and between the CINAHL, LILACS, PubMed, Medline databases and for not having the descriptors in the title or abstract. After reading the full text of 73 articles, 60 were excluded because they were not related to the theme of the study. Thus, the corpus of the present review was composed of 13 articles, as shown in Figure 1.

The selected articles were systematized in a data collection instrument, adapted from an already validated instrument<sup>(10)</sup>, which allowed obtaining information on title, journal and year of publication, objectives, sample, method and results. The analysis process involved translating and reading the articles and filling the instrument with all the data from the article. Data were analyzed based on the relationship with the object of study.

## RESULTS

Regarding the selected studies, 2015 was the year with the largest number of publications, totaling five articles, followed by 2014 with three publications, and the years 2012, 2013, 2016, 2017 and 2018 with one publication each year. In the period from 2006 to

2011, there were no studies addressing the proposed theme.

As for the type of research design of the articles evaluated, the sample showed: eight cross-sectional studies, two randomized studies, three qualitative analysis studies (content analysis). Thus, in relation to the strength of the evidence obtained in the articles, eleven level VI articles and two level II articles were found<sup>(11)</sup>.

Observing the level of evidence for each study is important to establish the reliability of the results that will be used and, thus, to strengthen the conclusions that will come from the research under development. The studies can be classified into seven levels of evidence, namely: Level I - systematic review or meta-analysis, from all relevant randomized controlled clinical trials; Level II - randomized clinical trial; Level III - non-randomized clinical trial; Level IV

- cohort or case-control studies; Level V - systematic review of descriptive and qualitative studies; Level VI - descriptive or qualitative study and Level VII - studies whose evidence comes from the opinion of authorities and/or the report of expert committees<sup>(11)</sup>.

The data show the distribution of these articles in six journals, and among them stands out Aids and Behavior with five publications in the years 2012, 2014, 2015, 2016 and 2017.

Most of the studies selected for this integrative review target men who have sex with men (MSM) and their relationship with the use of mobile apps to search for sexual partners. Eight were identified that dealt with the use of mobile intervention apps for STI prevention and five that dealt with the use of mobile apps for recruiting partners, as shown in Chart 2 and Chart 3.

Quadro 2. Quadro-síntese dos estudos relacionados aos aplicativos móveis de intervenção para a prevenção de Infecções Sexualmente Transmissíveis. Patos PB, Brasil, 2018

TÍTULO, PERIÓDICO E ANO DE PUBLICAÇÃO	OBJETIVOS	RESULTADOS
Putting Prevention in Their Pockets: Developing Mobile Phone-Based HIV Interventions for Black Men Who Have Sex with Men. AIDS Patient Care and STDs, 2013.	Divulgar intervenções de saúde sobre Infecções Sexualmente Transmissíveis para Homens que fazem sexo com Homens (HSH) negros através de aplicativos móveis.	A tecnologia foi bem aceita como um meio de intervenção para prevenção no que diz respeito ao HIV e demais IST.
Online Outreach Services Among Men Who Use the Internet to Seek Sex with Other Men (MISM) in On-tario, Canada: An Online Survey. Journal of Medical Internet Research, 2015.	Investigar as experiências de homens que usam a internet para procurar sexo com outros homens e a autopercepção dos impactos de divulgação de prevenção online.	A maioria relatou que o prestador de serviços era de difícil entendimento, porém útil. Em relação ao comportamento, (32,7%) relataram o uso do preservativo com maior frequência, realização de teste para HIV (34,4%) ou IST (28,6%), e (25,2%) buscaram informações sobre o estado sorológico do parceiro. Cerca de (10,2%) não relataram mudanças e a maioria (83,8) afirmou que usará o serviço novamente. Os que não utilizaram a divulgação de prevenção online relataram não precisar desses serviços ou não ter conhecimento sobre eles.
Prevention of Sexually Transmitted Infections using mobile devices and ubiquitous computing. International Journal of Health Geographic, 2015.	Investigar a contribuição da tecnologia para a prevenção de Infecções Sexualmente Transmissíveis.	O software envia notificações preventivas aos utilizadores quando detecta situações como a ativação de aplicações específicas em seus smartphones, ou sua proximidade a áreas com uma elevada probabilidade de relação sexual (zonas quentes). As mensagens utilizadas foram selecionadas a partir de uma lista que foi avaliada pelos próprios usuários. A mensagem mais utilizada foi "Desfrutar do sexo e aproveitar a vida. Não se exponha ao HIV".

Acceptability and feasibility of using established geosocial and sexual networking mobile applications to promote HIV and STD testing among men who have sex with men. AIDS Behavior, 2015.	Avaliar a aceitabilidade e viabilidade da prestação de informações sobre saúde sexual e referências de teste de HIV/DST estabelecida via geosocial e aplicativos de redes se-xuais para homens que fazem sexo com homens (HSH).	Dois terços (64%) dos aplicativos encontrados foram uma fonte aceitável para informações sobre saúde sexual. Os HSH que aceitaram não eram homens brancos, não tinham certeza do seu estado sorológico para HIV. Um quarto (26%) dos bate-papos informativos de educação em saúde resultou na solicitação dos usuários nos referidos sites locais em testes de DST e HIV. Houve diferenças significativas no número e tipos de interações entre aplicativos.
Acceptability of Smartphone Application-Based HIV Prevention Among Young Men Who Have Sex With Men. AIDS Behavior, 2014	Investigar a aceitabilidade de aplicativos de smartphone utilizados com a finalidade de prevenir o HIV.	A maioria dos participantes utilizava aplicativos para busca por parceiros sexuais e manifestaram o desejo de participar de programas de prevenção de HIV através de aplicativos.
MHealth approach to promote Oral HIV self-testing among men who have sex with men in China: a qualitative description. BMC Public Health, 2018.	Explorar as opiniões dos Homens que fazem sexo com Homens na China sobre a viabilidade e potenciais preocupações de usar o WeChat para apoiar o HIVST e reduzir o risco de infecção pelo HIV.	Os Homens que fazem sexo com homens descreveram o uso do WeChat e expressaram apoio ao uso desta plataforma para promover o HIVST e disseminar informações relacionadas ao HIV. Eles descreveram suas preferências sobre a implementação de uma intervenção de saúde móvel para promover o HIVST, incluindo a fonte de mensagens de intervenção, bem como tempo de mensagem, frequência, forma, tom e conteúdo. Os participantes também descreveram preocupações relacionadas à privacidade sobre como receber mensagens via WeChat e oferecer soluções potenciais.
Acceptability of HIV prevention information delivered through established geosocial networking mobile applications to men who have sex with men. AIDS Behavior, 2017	Avaliar o tipo de informação sobre o HIV que os Homens que fazem sexo com homens estavam dispostos a receber através dos aplicativos estabelecidos, bem como o método e frequência mais aceitáveis.	Todos os tipos de informações foram considerados aceitáveis e informações sobre prevenção do HIV nos aplicativos usuais são necessárias.
Using the Information-Motivation-Behavioral Skills Model to Guide the Development of an HIV Prevention Smartphone Application for High-Risk MSM. AIDS Educ Prev., 2015	Identificar o conteúdo desejado, recursos e funções de um aplicativo móvel para prevenção do HIV em homens que fazem sexo com homens de alto risco.	Os participantes identificaram necessidade de informações relacionadas à prevenção do HIV tais como: centro de distribuição de testes e profilaxia do HIV; grupos de apoio; informações sobre a doença e tratamento. Ressaltaram a importância de abordar nos aplicativos: uso correto do preservativo; negociação de sexo seguro; reconhecimento de sinais e sintomas de HIV e Infecções Sexualmente Transmissíveis.

Quadro 3. Quadro-síntese dos estudos relacionados aos aplicativos móveis para recrutamento de parceiros. Patos, PB, Brasil, 2019

TÍTULO, PERÍODO E ANO DE PUBLICAÇÃO	OBJETIVOS	RESULTADOS
Gay apps for seeking sex partners in China: Implications for MSM sexual health. AIDS Behav, 2015.	Examinar dados sociodemográficos e comportamento sexual entre Homens que fazem sexo com homens chineses que usam aplicativos homossexuais em comparação com HSH que não usam aplicativos gays, a fim de orientar sobre prevenção, e o risco sexual específico em ambas populações.	Em comparação com os não-usuários de aplicativos, os usuários de aplicativos eram mais jovens e estavam na faixa etária de 26 e 35 anos, possuíam ensino superior e eram mais informados sobre sexualidade. Tinham uma maior multiplicidade de parceiros e realizaram recentemente testes de HIV, quando comparados ao outro grupo. Não houve diferença quanto ao uso do preservativo entre os dois grupos.

<p>Virtual Versus Physical Spaces: Which Facilitates Greater HIV Risk Taking Among Men Who Have Sex with Men in East and South-East Asia? AIDS Behavior, 2014.</p>	<p>Investigar se a internet facilita maior risco de HIV entre homens que fazem sexo com homens (HSH) em uma determinada região.</p>	<p>Em comparação com HSH que se reuniu somente com parceiros off-line, aqueles que se reuniu com parceiros online eram menos propensos a ter múltiplos parceiros sexuais masculinos, ter pagado por sexo, ter consumido álcool e outras drogas antes do sexo. HSH que se reuniu com parceiros online e off-line destacou-se como o grupo de maior risco pois eram mais propensos a ter múltiplos parceiros, se envolverem em sexo anal desprotegido e ter consumido álcool antes das relações sexuais.</p>
<p>Sex on demand: geosocial networking phone apps and risk of sexually transmitted infections among a cross-sectional sample of men who have sex with men in Los Angeles county. Sexually Transmitted Infections, 2014.</p>	<p>Determinar o risco de infecções sexualmente transmissíveis entre os homens que fazem sexo com homens que se auto-identificaram HIV-negativos, participantes de uma clínica que fazem uso do Geosocial Networking Applications (GSN apps).</p>	<p>Os indivíduos que usaram aplicativos GSN para buscar parceiros sexuais apresentaram maiores chances de ser positivo para gonorréia e para clamídia comparado a indivíduos que se reuniu com parceiros sem uso de aplicativos. Não houve diferenças significativas na incidência de sífilis e de HIV entre os que conheciam parceiros sem uso de aplicativos, na internet ou através de aplicativos GSN.</p>
<p>Use of the Location-Based Social Networking Application GRINDR as a Recruitment Tool in Rectal Micro-bicide Development Research. AIDS Behavior, 2012.</p>	<p>Investigar o uso de aplicativos móveis como ferramenta para o recrutamento de homens que fazem sexo com homens (HSH) para pesquisas de prevenção do HIV.</p>	<p>Os participantes que foram recrutados através de aplicativo eram mais jovens, com maior escolaridade, auto-identificados como brancos e tiveram um maior número de parceiros nos últimos 14 dias quando comparados a outros participantes recrutados de outras formas.</p>
<p>Using Smartphone Apps in STD Interviews to Find Sexual Partners. Public Health Reports, 2015.</p>	<p>Investigar o uso dos aplicativos de smartphone em entrevistas sobre doenças sexualmente transmissíveis (DST) para encontrar parceiros sexuais.</p>	<p>Alguns indivíduos que usaram aplicativos para encontrar parceiros tinham em média três parceiros na internet. Parte dos entrevistados tiveram alguma DST e conheciam seu estado sorológico de HIV positivo. Três dos novos casos de DST/HIV estavam entre os parceiros que se encontravam online. Seis parceiros foram localizados usando smartphone e dois foram notificados da sua exposição ao HIV através de um website.</p>

## DISCUSSION

In this integrative review, the socio-demographic characterization of users of mobile applications, both for health intervention and for sexual recruitment, proved to be mostly young people, aged between 16 and 41 years old, who declared themselves a man who has sex with a man (MSM), white, attending higher education, informed about sexuality, and have average social and economic status. It is important to consider that it is a population with a different profile

when compared to the other vulnerable population segments: low education, little information about sexuality, low social and economic conditions<sup>(11-13)</sup>.

In recent years there has been a change in the statistics for the category of HIV exposure among men. In 2014, heterosexual exposure was the one with the highest percentage, and according to data from the last Epidemiological Bulletin of the Ministry of Health of 2017, it appears that 48.9% of cases among men were due to homosexual exposure<sup>(14)</sup>.

As for HIV among men, the increase in the detection rate from 2006 to 2016 stands out. In 2006, the rate was 24.1 cases/100 thousand inhabitants, which increased to 25.8 in 2016, representing an increase of 7.1%. In young people aged 15 to 19 the rate almost tripled and from 20 to 24 years the rate more than doubled. It is noteworthy that despite the increases observed in the aforementioned age groups, the highest detection rate in 2016 remained among individuals in the 35 to 39 age group: 49.4 cases/100,000 inhabitants<sup>(14)</sup>.

Concomitant to the change in the profile of the epidemic in recent years with the increase in the number of cases of HIV and other STIs among young people, there is the emergence of mobile applications as a tool in the recruitment of sexual partners, used mainly by MSM<sup>(15)</sup>. It cannot be said that there is a direct relationship between the use of mobile applications in changing this profile<sup>(16)</sup>, however, it can be inferred that it contributes to changes in young people's behavior regarding sexual and relationship practices. In a study developed in Los Angeles, young people who used apps to gather sexual partners were more likely to be positive for gonorrhea and chlamydia when compared to individuals who sought partners in traditional locations (bars, saunas, nightclubs, clubs) or through other types of social networks<sup>(17)</sup>.

The use of mobile applications has been increasing in recent years, the ease of identifying partners with the desired profile, maintaining their anonymity and their location in real time, has motivated many people, mostly young people, to make use of this digital tool. There are several applications developed for this purpose<sup>(15,17-19)</sup>.

The Internet has increasingly acted in building relationships and dating for casual sex between people. New people know each other because of the simpler social networks, even apps created specifically for that, like the ones identified in this study.

The use of digital applications favors a greater multiplicity of partners<sup>(15)</sup>. A study developed in Los Angeles found that young people using these sexual apps had a greater number of partners in the last 14 days<sup>(6)</sup>. In New York, it was possible to observe that individuals who used the application had an average of three partners on the Internet<sup>(19)</sup>.

It should be noted that in addition to the greater number of partners, unprotected anal sex and alcohol consumption before sexual intercourse<sup>(8,17,19)</sup> were risky behaviors present in this group.

In addition, higher rates of STI/AIDS were observed among those individuals who had relationships with partners from the online social network, when compared to partners found in bars, parties, clubs and nightclubs, among other traditional places<sup>(17,19)</sup>.

However, in a study conducted in Asia, the researchers concluded that the online environment alone does not represent a greater risk for HIV and other STIs, since MSM who recruit partners through apps are less connected to gay and male communities, physical spaces, places that increase the likelihood of contact with a greater number of partners<sup>(8)</sup>.

On the other hand, it is learned that mobile applications can figure as important tools in STI/AIDS prevention strategies and, consequently, in reducing vulnerability<sup>(16,20)</sup>. Through the application commercially used in the United States, specifically in California and Los Angeles, it is possible to recruit individuals for studies related to HIV prevention and to develop successful interventions. In Australia and Africa there has been a significant increase in condom use and a progression in knowledge about HIV and other STIs<sup>(6,7,21,22)</sup>.

In New York, men who have sex with men reported the importance of focusing on some information in the intervention apps, such as: HIV testing, support groups, correct condom use, negotiating safe sex and recognizing signs and symptoms HIV and other STIs<sup>(23)</sup>.

In addition, the fact is that we are living in the "thumb generation", hyper-connected individuals who use these mobile technologies in an educational context, which facilitates this generation's quick, practical, and broad access to health information.

In this segment, the real benefits provided by the use of prevention applications are observed, however, studies emphasize the need for greater dissemination of this service, since the partner search applications are more evident

and more used when compared to the intervention ones<sup>(20,22,24-25)</sup>.

In this study, although significant results were obtained, articles in Brazil addressing the use of applications as a factor of vulnerability and STI prevention were not identified in the researched databases. Thus, it was not possible to make a parallel with the reality of the country.

## CONCLUSION

This integrative review enabled the construction of a synthesis of scientific knowledge about mobile applications as a factor of vulnerability and prevention of Sexually Transmitted Infections. It is noteworthy that part of the studies analyzed was cross-sectional, making it difficult to establish a temporal relationship between the events.

It was observed that the users of the mobile applications were men who have sex with men (MSM), younger, with a greater degree of information, is related to a greater number of partners in a shorter period of time, as well as having low adherence to condom use regardless of the partners' serological status. It is noteworthy that a greater number of STI/AIDS cases are found among MSM users of this digital tool, when compared to MSM who did not use it, showing the vulnerability.

On the other hand, these digital tools present themselves as a great ally in the prevention of STIs/AIDS, since the existing applications on the market have been tested and shown to be efficient, increasing adherence to condom use and a progression in knowledge about infections reducing vulnerability. However, greater dissemination of them is necessary so that they can be widely used by the population, fulfilling its preventive role. To be successful, interventions through applications must take into account aspects of privacy, stigma, social norms and different types of language.

It is inferred that, although mobile applications for partner search are wi-

dely used in Brazil, no studies were identified in the databases on the subject in the country. Based on the statements,

and due to the relevance of the theme, there is a need for greater investment in studies related to mobile applications

and their relationship with the vulnerability and prevention of sexually transmitted infections. ■

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