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RESEARCH ARTICLE

Adaptation and pilot testing of an HIV Behavioral Intervention-Chicos Net (CN) for Gay Latino Men (GLM)

Adaptación y prueba piloto de una intervención conductual sobre el VIH - Chicos Net (CN) para hombres latinos homosexuales (GLM)

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ABSTRACT

Chicos Net (CN) is a globally oriented research program aimed at preventing HIV transmission, initially developed for Latino MSM (men who have sex with other men) in Toronto, Canada. Later, it was modified to fit the cultural preferences of gay men living in Cali, Colombia. The study aimed to reduce the incidence of HIV infection in these communities. The intervention consisted of four sessions, 12 hours, following a prearranged manual. CN covers a range of subjects, such as deepening knowledge about HIV, investigating the impacts of homophobia, studying migration experiences on international (Canada) and local (Cali, Colombia) rural-to-urban scales, exploring dating, analyzing the repercussions of social isolation, and navigating LGBT environments. The intervention consisted of administering a questionnaire before and after and doing a pre-post t-test. The results demonstrate positive effects in terms of social support and efficacy in negotiating condom use.

Keywords: HIV behavioral intervention, Latino gay immigrants' adaptation, cultural diversity, sexual health programs.

RESUMEN

Chicos Net (CN) es un programa de investigación orientado a nivel mundial destinado a prevenir la transmisión del VIH, desarrollado inicialmente para Latino MSM (hombres que tienen sexo con otros hombres) en Toronto, Canadá. Posteriormente, fue modificado para adaptarse a las preferencias culturales de los hombres homosexuales que viven en Cali, Colombia. El estudio tiene como objetivo reducir la incidencia de la infección por el VIH en estas comunidades. La intervención consistió en cuatro sesiones, con un total de 12 horas, siguiendo un manual preestablecido. CN abarca una serie de temas, como profundizar el conocimiento sobre el VIH, investigar los efectos de la homofobia, estudiar las experiencias migratorias tanto en las escalas rural-urbana internacionales (Canadá) como locales (Cali, Colombia), explorar la relación, analizar las repercusiones del aislamiento social y navegar por los entornos LGBT. La intervención consistió en administrar un cuestionario pre-post análisis estadístico t-test. Los resultados demuestran efectos positivos en términos de apoyo social y eficacia en la negociación del uso del preservativo.

Palabras claves: Intervención conductual sobre el VIH, adaptación de los inmigrantes gays latinos, diversidad cultural, programas de salud sexual.

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1. Introduction

HIV/AIDS continues to be a significant health problem, particularly among vulnerable Latin American populations, including MSM (gay, bisexual, and other men who have sex with men). In Colombia, HIV prevalence among MSM is approximately 10%. In cities like Cali, the MSM population constitutes 23% of HIV infections, one of the highest in Latin America and the Caribbean (Rubio Mendoza et al., 2015). In North America, Latino MSM are disproportionally affected by HIV. In 2014, one-quarter of HIV cases in the United States were in Latinos, and 84% of the Latino men diagnosed with HIV were MSM. Between 1998 and 2014, among HIV cases attributed to MSM exposure, Latinos constituted 6.7% of cases in Ontario, becoming the second ethnic-racial group after Black individuals. (Gilbert, 2016; Haddad et al., 2017). In addition, in 2018, the CDCE reported that Latino gay, bisexual, and MSM cases with 27% (ages 13-24), and 32% (age >24) when compared to other racialized groups in the United States ((CDC), 2018); and in 2021, the CDC (2021) reported that Latinos had a greater incidence of infection only second after Black-African communities.

Latino MSM who immigrate and Latino MSM living in their countries of origin share similar experiences that explain their higher risk of HIV infection and sexually transmitted infections (STI). They live in contexts with homophobia, stigma, lack of culturally accessible information, isolation, and discrimination (Clark et al., 2014; Mimiaga et al., 2015), they experience high rates of violence and poverty (Zea et al., 2014), and they arrive to new places where language barriers, immigration status, lack of recognition of foreign credentials worsen their previous experiences and their risk of HIV (Nakamura & Zea, 2010). All those factors are known to contribute to less condom use, more use of public venues for sexual activities, high levels of abuse of alcohol and drugs, and poor mental health in Latino MSM. This article recognizes the role of sexual migration in individuals' lives, which is a strategy of surviving in a different place where the individual is unknown (Arreola et al., 2013;

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Guzmán, 2006).

The importance of addressing cultural factors in the design of interventions for the Latino population has been emphasized in the current literature (Adam et al., 2011; Alvarado, Martinez-Cajas, Adam, et al., 2021; Alvarado, Martinez-Cajas, Mueses, et al., 2021; Betancourt, 2015, 2024). In a recent literature review (Alvarado, Martinez-Cajas, Mueses, et al., 2021), essential concepts to address included the various expressions of masculinities or their absence, the silence surrounding sexualities, and the dismissal of non-heteronormative behaviors on social networks. It is also crucial to incorporate community-based elements, such as engaging bilingual-bicultural peers, providing sexual health materials in Spanish, and involving facilitators who belong to the target community. Therefore, this information supported the gap in interventions for Latino MSM. In Canada, undetectable viral load prevention strategies (U=U), PrEP/PEP, and access to condoms have become available to individuals at risk of HIV (Grace et al., 2014; Grov et al., 2016). However, it is recognized that Latino MSM tend to have less uptake and adherence to those interventions (Armoon et al., 2021; Mendelsohn et al., 2015; Organista, 2012; Serrano Sanchez, 2013). For MSM in Colombia, information and condoms may still be the only resources available to cut down HIV/STI infections (Quevedo-Gomez et al., 2011).

Chicos Net (CN)

In answer to the lack of programs available for Latino MSM, in 2008, a program called, *Mano en Mano,* was created with the support of the Ontario HIV Treatment Network (OHTN) to intervene in the HIV risk sexual behaviors of Spanish-speaking gay migrants to Toronto, Canada (Adam et al., 2011). *Mano en Mano* was modeled on another intervention developed in San Francisco by Rafael Diaz, based on the idea of creating groups that learn information related to sexual health together, and at the same time, talk about issues of living as gay immigrants (Diaz, 1998). Based on Freire's ideas about empowering marginalized individuals and groups oppressed by similar circumstances and who find support from other peers (Freire, 2007), this program was evaluated and showed promising results in

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increasing individuals' HIV/STI knowledge, decreasing social isolation, increasing critical awareness, and assisting in increasing resilience, self-regulation, and personal agency (Arreola et al., 2013; Diaz, 1998). In 2011, *Mano en Mano* was piloted in Latino MSM in Canada with positive effects on reducing individual's social isolation and increasing sexual health pertaining to HIV (Adam et al., 2011).

After this, *Mano en Mano* changed its name to Chicos Net (2011-2018), recognizing the incorporation of new Internet technologies (social media, sexual apps, tweeter) and formalized its core components. *Chicos Net (CH)* content was also adjusted by including a new theoretical lens: *La Pasion*: *Sexual Desires, Pleasures, and Passion* (Betancourt, 2015). *La Pasión* recognizes the romantic and emotional patterns traditionally taught and reproduced in Spanish-speaking cultures, including notions of masculinity, male sexual roles, homophobia, and finally the embodiment of sexual desires and pleasures, factors playing a role in sexual health decision making processes of Latino MSM. Furthermore, *La Pasión* opens the opportunity to discuss colonial beauty notions and social hierarchies prevalent in Latin America, allowing the deconstruction of ethno-historical pathways of power and desire (Adam & Rangel, 2015; Buot et al., 2014; Decena, 2011; Diaz, 1998; Guzmán, 2006; Laguarda, 2014). Understanding, discussing, and allowing learning about sexuality without judgment is a main component of CN. CN consists of 4 sessions of 3 hours each (a total of 12 hrs.) intended to: 1) reduce social isolation, 2) increase knowledge of HIV and safe-sex practices, 3) develop critical awareness and empowerment, and 4) increase individual resilience, self-regulation, and personal agency. CN is delivered by community members drawn from the targeted groups. Therefore, is an excellent medium for training peer and community leaders.

Objectives

This article describes the adaptation process of CN in Latino MSM in Cali and the pilot testing of CN in both Latino MSM in Canada and Colombia, and to obtain preliminary data on effectiveness, appropriateness, and acceptability of CN as implemented in gay and other MSM through one AIDS service organization and five gay community organizations in Cali, Colombia.

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2. Methods

Context and Community Partnership.

This project was conceived as a community-based intervention. It was developed in partnership with: 1) a community-based organization in Toronto, the Center for Spanish Speaking People-CSSP; 2) academic researchers from Colombia and Canada; 3) a nongovernmental organization from Colombia, Corposida which serves as an HIV community clinic; 4) five LGBT community-based organizations in Cali, Colombia; and 5) directors of STI clinics and representatives of public health at the local level in Cali, Colombia. Cities were selected because of previously existing partnerships.

Design

This study uses a mixed method design of qualitative and quantitative methods to adapt and assess effectiveness of CN. The methodology adopted for the adaptation of CN to Colombia was based on the CDC's five-stage adaptation process ADAPT model (McKleroy et al., 2006; Wingood & DiClemente, 2008). According to this process, adapting an evidence-based behavioral intervention involves five phases: 1) assessing the population, 2) selecting the intervention, 3) preparing the adaptation, 4) piloting the adapted intervention, and 5) implementing the adapted intervention.

Phase 1 and 2. Assessment and decision: The first two phases involved community meetings to determine HIV prevention needs, capacities of the agency and community organizations, the decision to adopt (if fitting within the local community's needs and organizational goals), and the ecological system used as a social context (Baral et al., 2013; McLeroy et al., 1988). Finally, the CN intervention was selected and adapted to recognize the intervention's strengths and weaknesses considering a formative evaluation. For this process, three meetings were held, in 2009, 2010, and 2011 in Cali Colombia, with about 30 participants each. Those meetings included targeted communities, researchers,

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and health providers, such as STI manager program directors. CN components were presented, discussed, and approved.

Phase 3. Preparing the adaptation. This phase was carried out in 2013 and involved improving the implementation plan of CN and pre-testing the intervention in a group of the target population in both Toronto and Cali to elicit language, cultural changes, or content changes. In Canada, the development of the new implementation plan for CN included the following activities: 1) focus groups with previous CN participants to discuss possible impact/outcome indicators, and tools available to assess the intervention. The main discussion was based on outcomes and tools that were collected as part of a workshop at the Ontario HIV Treatment Network to discuss and qualitatively evaluate instruments with Latino community members and other immigrants. The workshops provided skills about qualitative and quantitative evaluation methods to measure outcomes of the intervention when delivered in the target community. As a result of this workshop, a series of instruments to measure social support, HIV knowledge, and HIV disclosure were discussed and selected for CN. 2) A literature review conducted to identify main theoretical underpinnings for CN; 3) the development of a manual for CN facilitators to guide future educational interventions and a theoretical framework was devised to support the adaptation model of *La Pasion* (Betancourt, 2015); 4) Interviews with previous CN facilitators to collect insightful aspects and use them to develop a manual for current and future CN implementation, and 5) a focus group with previous CN trainees and trainers ($n=7$) in a half-day meeting to present the new CN plan program implementation.

In Colombia, the implementation phase included: 1) a three-day session with six gay men from LGBT organizations held to introduce and discuss CN. During this time, qualitative and quantitative information was obtained from all participants, using a grid adapted from Tortolero et al. (2005) which included: understanding the material, meeting objectives, the relevance of the information, the relevance

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of the educational tools, and delivery of the program. 2) A two-day training program in which attendees (*n=6*) were trained as CN facilitators. CN questionnaires and implementation were updated and adapted for the Cali, Colombia context.

*Phase 4. Pilot***.** A pre-post intervention design without a control group to examine short-term outcomes of CN in a sample of the target populations of both Toronto, Canada, and Cali, Colombia. Individuals eligible to participate were Latino gay or other MSM, who are at least 19 years old, and communicate in Spanish as a mother tongue. They were invited through websites and local ads. Participants were evaluated at the end of four sessions and three months later using the same instrument.

The questionnaire collected quantitative information on age, country, socioeconomic status (education, income), HIV status, most recent HIV test, and previous diagnosis of an STI. The evaluation asked about relevant outcomes for CN (refer to table): 1) knowledge of HIV and STI. For this, we use a validated scale for Spanish-speaking people (Espada et al., 2009). 2) Condomless anal sex. Participants reported: a) whether they engaged in anal sex with a regular male partner(s), and/or casual male partner(s) over the past 3 months; b) indicated the HIV status of their partner(s) (i.e., positive, negative, unknown status) and c) how often, over the prior three months, they engaged in receptive or insertive anal intercourse, with or without a condom (never, once, 2 to 4 times, or 5 or more times). These answers were used to create four sexual behavioral outcomes as presented in table 2. 3) Five items of the self-efficacy scale used in other interventions (Kalichman et al., 2001) assessed efficacy to negotiate condom use. This scale was translated from English to Spanish by the research team (original to target, target to original) who are bilingual experts in the field of prevention and HIV; 4) Efficacy to reduce HIV risk A scale to measure self-efficacy in HIV (Smith et al., 1996) that was tested in Latino populations. For the self-efficacy scales, participants indicated the extent they agreed with each of 5 statements on a 4-point Likert-type scale (ranging from 1 = strongly disagree to 4 = strongly agree); 5) The social support scale by Gilbert and Rhodes (Gilbert & Rhodes, 2012) that was used for assessment in Latino gay men.

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Scale	Example of items	Description	Alpha Cronbach in current study sample at baseline
Knowledge		Likert scale ranging from 1 = strongly disagree to 4 = strongly agree; total score range from 1-4	0.50
HIV risks efficacy		9 items ranging from 1 = strongly disagree to 4 = strongly agree; total score range from 9 to 36, where higher score higher the efficacy	0.76
Negotiation of condom efficacy		5 items ranging from 1 = strongly disagree to 4 = strongly agree; total score range from 4 to 20, where higher score higher the efficacy	0.75
Social support		11 items assessed 0=no one 4=many	0.90

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	people; score ranged from 0-44, higher score higher the support

One focus group was conducted at the end of each CN group to extract more detailed information about their experience: benefits, positive and negative aspects, things they would like to change, recommend CN to friends, or become a facilitator of CN. One of the Colombian team members conducted the focus group, and an audio recording was made. A summary of findings was extracted by one of the local researchers. Data from the focus groups were not transcribed, and a summary template was used to summarize the participants' perceptions.

Analysis

The analysis included a demographic description of the participants' sample and a comparison between Canadian and Colombian groups. Pre- and 3-month post-intervention data were analyzed descriptively, and a sign rank test was used to compare within-person change on scale scores in the sample of completers (n=25). Scores were constructed for knowledge, self-efficacy, and social support scales, adding the score obtained for each item. McNemar and Fisher's exact tests were used for nominal variables to evaluate proportional differences due to small cell sizes. See the explanation below. Qualitative data were analyzed to contextualize findings further, focusing on theme analysis. STATA software was used for analysis.

Key Findings

A handbook for implementation of CN now includes**:** a theoretical paper, a manual of

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implementation, and a new pre-and post-questionnaire adapted for both settings. Questionnaires included as relevant outcomes for CN are described above. This was different from the previous CN version which only contained the manual used by Rafael Diaz (1988), the *photonovela* "Guys Like You" (Betancourt, 2011), and the basic objectives of the intervention. The manual is available for those interested in CN.

Feasibility**:** CN was found to be feasible for the AIDS service organization in Colombia-Corposida, a well-recognized organization at a local and national level for their efforts in HIV prevention. The groups did not find it feasible to try to implement CN outside Corposida, at least for the first pilot implementation because of the administrative requirements for the organization of the groups (personal communication).

Additional adaptation of CN: Very minimal changes were needed from the existing implementation plan and were mainly in language adapted to the local setting. Four community members delivered CN in Colombia while four of the participants acted as co-facilitators of the project in Canada. Consequently, CN has demonstrated itself to be an excellent training school for peer educators and facilitators.

Pilot project: Two CN groups were run in Canada. A total of 17 people agreed to come to CN and complete the information at baseline, with only 14 participants completing the four sessions (82%) and 10 individuals following the 3 months after (58.8%) evaluation point. Three groups of CN were run in Colombia. A total of 20 participants provided baseline information in Colombia, 17 completed all the training sessions (85%) and 15 were evaluated after three months (75%) with a 67.5% retention rate (25/37). Baseline data for all completers are presented in table 1. Participants had a mean age of 29.9;

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the majority (75.5 %) were men with gay identity. Most of the sample's participants had some university education; only 20% completed university, with 66% of the sample being out of the workforce. Most of the sample's participants were single (68%) and lived with their families (56%). Appendix 1 shows the comparison of the Canadian and Colombian samples. The Colombian participants were younger, with lower levels of education, were less likely to be in a couple, and were more likely to live with their family of origin. Canadian participants were more likely to have a partner and live with him or with friends (roommates).

Insert table 1 here

Table 2 shows the pre-and post-description and comparison by sexual behavior for completers without disaggregation by the city to preserve sample size. Previous HIV testing was 100% at baseline, among those HIV negative at baseline (*n=10*), seven repeated the HIV test after the intervention. Figure 1 shows the distribution of CAS by type of partner and serostatus. A common trend was the increase in engaging over time with any type of partner, without increasing the frequency of condomless anal sex. Comparisons of baseline and post-intervention paired data render sample size low for McNemar test (see table 2).

Insert table 2 here

Table 3 shows the distribution of psychosocial factors. All respondents have corrected knowledge on HIV at baseline, thus this variable was not further tested post-intervention. Most participants had high levels of self-efficacy as a strategy to reduce HIV risk, with a range between 26 to 36, and a mean of 33. The same happens for efficacy to negotiate condom use, which ranges at baseline between 14 and 20 with a mean of 18 (max score 20). Social support scale values range from 7-44; with a baseline mean of 25. Although there was not a significant change before and after analysis for the

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overall sample (table 3), the disaggregated data by site and positivity of HIV show some interesting trends (figure 2 and 3). Efficacy of condom negotiation increased after the end of the sessions in the Canadian sample (p=0.04); and social support seems to increase in the Colombian sample (p=0.06), and in those HIV positive at the end of the sessions (p=0.02).

Qualitative analysis of the final session groups is consistent in revealing the key aspects: 1) CN offers a safe place to talk about sex, increase social support, and acquire knowledge; 2) CN offers basic skills such as how to have safe sex, how to manage sex in bathhouses or cruising geographic spaces, how to make friends, 3) participants recommend CN for their friends and think that it should be available for anybody, especially youth as a safe space to talk about sex; 4) CN sessions should increase to more than 5 to cover other aspects such as: coping skills, self-esteem, and stigma. 5) CN needs more educational materials to share with participants.

Table 3 Summary of main topics discussed in the focus groups at the end of the intervention

Main questions	Focus group 1 in Toronto	Focus group 2 Colombia
What do you like the most?	Integration of information, the way of taking without taboos, talking about condoms, the friendships that emerge, the materials.	The dynamic, food, timing; CN is a space to meet other gay men without fear; gaining new knowledge, the place, the topics that

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		provoke reflection, good dynamics, talking without fear, gaining friends.
What do you like less?	Short time to discuss topics, more materials to discuss and to take home to absorb what is learned and discussed.	The lack of time, noticeably short for discussion
What was the more useful aspect?	Knowledge of topics that were not known, such as STI, the importance of taking care of others, learning prevention techniques.	Learning about social construction; the knowledge about sexual life.
What would you like to see in CN?	Dealing with more emotional issues, gaining resilience and self-esteem.	More time, more sessions, more dynamics in the sessions.
Would you recommend CN? To whom?	To everybody to know how to prevent HIV, to people who want to have a satisfying sexual life.	Friends and social organizations such as bars, coffee places.

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What practical things do you learn in CN?	Knowing about STI, knowing what to do if you have one; what to do when you go to a sauna, learning how to talk about sex with family.	That there are more new ways for HIV prevention such as PrEP and U=U
What do you think about the facilitators?	Show ability to talk, they become friends	Patience, leadership, good attitude, good knowledge; gain confidence to talk, trust, know how to talk to others about prevention.

3. Discussion

In the process of adapting and piloting CN among Latino gay men in Canada and Colombia, we were able to: 1) develop a new implementation plan for CN for gay and other Latino MSM in Canada and Colombia, 2) adapt CN to gay and other MSM in Colombia, 3) demonstrate that CN has high levels of acceptability, and 4) develop local capacity building as members of the targeted populations who are now facilitators of CN and are highly acceptable by new potential participants. The effectiveness of CN suggests that in subpopulations: 1) CN seems to influence sexual health through increasing self-efficacy

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in the Canadian sample. 2) CN seems to favor increased HIV testing, 3) and it increases social support at the end of the intervention.

There are some areas in which CN *implementation* may need improvement. First, future implementation of CN should consider the use of other scales to assess knowledge and self-efficacy, as the ones tested seems to have ceiling effects. The scales used in CN were dated and it is difficult to find new scales, particularly nowadays, where HIV information is changing every day. New scales developed for Latino gay men are worth reviewing for future CN interventions (Zeglin, 2015; Zeglin et al., 2017). Second, there is a need to develop new evaluation methodologies that would allow the measurement of behavioral change and empowerment that are hard to measure by the current scales that do not represent the evolving knowledge of HIV prevention such as serosorting, PEP, PrEP, or undetectable viral load (U=U) (Baral et al., 2013; Grace et al., 2014; Grov et al., 2016). Moreover, it is important to test and develop new online apps for recruitment that would entice younger generations that are more likely to interact using the Internet and smart phones to connect and cruise with other gay men when compared to their older peers. The increasing incidence in North America and in Latin America of new HIV cases in young adults further supports this adaptation of CN. Other important aspects are: 1) adding a new objective to Chicos Net concerning HIV testing as we observed that CN participants re-tested again after the intervention. Addressing this aspect in CN will be key as HIV testing is known to be still low in Colombia. 2) Include a wider focus on sexuality that would enhance sexual HIV prevention behavior strategies such as, condom use, serosorting, viral load, sexual practices with low risk of infection, PrEP and PEP, etc. This means that new sessions and new educational materials should be added to CN.

One of the most important findings was the reduction of social isolation. Social isolation was operationalized by the Social Support scale. Social support appeared to be an important factor in the lives of gay Latino men in Toronto.

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Recognizing a theoretical framework that is non-judgmental, but rather sex-positive, such as *La Pasion* (2015), allows educators and peer educators to capture the sexualized contexts in which HIV/STI risk activities occur. CN participants seem to have been attracted to the intervention, in great part, due to the idea of getting to know other peers and establishing relevant friendly relationships with other individuals to whom they may share similar social contexts. *La Pasion* provides the theoretical lens that allows researchers, policymakers, and community educators to recognize sexualities as a core value, making gay sexualities the organizing center of those individuals' lives. For many gay individuals, their sexualities define how much they eat and exercise, the places they go to socialize, what kind of people they date, or who they have as sexual friends.

This study should be interpreted considering quite a few limitations. First, CN was adapted to two populations that could differ from other Latino populations and thus necessitates additional adaptation. Second, the study was limited in sample size to do paired testing as the inclusion criteria did not relate to engaging in unprotected anal sex. Future implementation of CN in a trial design needs to include a control group and further strict inclusion criteria to render a larger sample for paired testing. Trials in the context of HIV prevention strategies have been feasible in similar populations using randomized control trial.

In conclusion, CN is a promising prevention intervention for Latino populations in Canada and Colombia. Further refinements of instruments and outcomes are needed to expand the intervention's core elements and ability to reduce HIV infections and other sexual health transmittable disease, with other Latino groups in different geographical locations. CN represents a community effort that has been funded from 2008-2018. For that amount of time, CN employed evidence-based knowledge in the development of HIV interventions at the time. CN was rigorously evaluated and adapted from Toronto, Canada, to Cali, Colombia, becoming a global effort that is worth noting for more HIV prevention interventions located in other countries, and other groups who share similar cultural ethnic backgrounds.

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Finally, CN was replaced by Communities Without Borders (CWB) (2018-2020), using the same principles of CN, the only difference being that transgender, lesbian and other minorities were admitted to the intervention (Betancourt, 2020).

Table 1. Distribution of social characteristics in a sample of completers n=25.

	Completers	
Age (means-sd)*	29.9 ;2.07	
	n	**%**
Gender		
Male	24	96.0%
Other (queer)	1	4.0%
Sexual preference		
Bisexual	1	4.0%
MSM	22	88.0%
Other	2	8.0%
Marital status		
Married	2	8.0%
In union	2	8.0%
Single	17	68.0%
Divorced	3	12.0%
Widow	1	4.0%
Education level		

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Primary	0	
Secondary	8	33.3%
1-2 years of university/technical	8	33.3%
3-5 years of university/technical	3	12.5%
University/postgraduate	5	20.8%
Employment status		
Unemployed	9	36.0%
Student	5	30.0%
Work halftime	2	8.0%
Work fulltime	8	32.0%
Other	1	4.0%
Live with		
Partner	3	12.0%
Friends	5	20.0%
Parents/Family	14	56.0%
Alone	3	12.0%

Table 3. Distribution of psychosocial factors, pre and post intervention in the sample of completers.

	Baseline(reference)	**Post session**	**P Value compared to post session**	**Post-after three months (Compared to baseline)**	
	Mean (SD)	**Mean (SD)**		**Mean (SD)**	**p-value**
Self efficacy to reduce HIV risk	33.56(2.58)	32.4(3.7)	0.23	31.16(7.10)	0.2597
	18.04(2	17.7(2.9	0.46	17.68(3.91)	0.5482

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Self efficacy to negotiate condom	.23)	0)				
Social support	25.56(9 .21)	28.8(6.5 0)	0.06		27.36(8.66)	0.3426

Appendix 1. Distribution of sociodemographic characteristics between sites. Total sample.

	Group Canada		Group Colombia		Total groups	
Age (means;sd)*	33.5;10.8		25.8;7.9		29.4;10.0	
	n	**%**	**n**	**%**	**n**	**%**
Gender						
Male	17	100.0%	19	95.0%	36	97.3%
Other	0	0.0%	1	5.0%	1	27.0%
Sexual preference						
Bisexual	1	5.9%	0	0.0%	1	2.7%
MSM	15	88.2%	19	95.0%	34	91.9%
Other	1	5.9%	1	5.0%	2	5.4%
Marital status*						
Married	1	5.9%	1	5.0%	2	5.4%
In union	3	17.7%	0	0.0%	3	8.1%
Single	9	52.9%	18	90.0%	27	73.0%
Divorced	3	17.7%	1	5.0%	4	10.8%
Widow	1	5.9%	0	0.0%	1	2.7%
Education level*						
Primary	1	6.3%	1	5.0%	2	5.6%
Secondary	3	18.8%	8	40.0%	11	30.6%
1-2 years of university/technical	2	12.5%	7	35.0%	9	25.0%
3-5 years of university/technical	3	18.8%	4	20.0%	7	19.4%
University/postgraduate	7	43.8%	0	0.0%	7	19.4%
Employment status						
Unemployed	4	23.5%	8	40.0%	12	32.4%
Student	3	17.7%	5	25.0%	8	21.6%
Work halftime	1	5.9%	3	15.0%	4	10.8%
Work fulltime	8	47.1%	4	20.0%	12	32.4%

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Other	1	5.9%	0	0.0%	1	2.7%
Live with*						
Partner	4	23.5%	0	0.0%	4	10.8%
Friends	6	35.3%	1	5.0%	7	18.9%
Parents/Family	3	17.7%	18	90.0%	21	56.8%
Alone	4	23.5%	1	5.0%	5	13.5%

Significance calculated by nonparametric U Mann Whitney test for ordinal variables.

Appendix 1. Distribution of sociodemographic characteristics between sites. Total sample.

The pilot group of CN answered a questionnaire developed for the Phoenix intervention. Each participant evaluated the four sessions of CN; answering the same questions: (1) Gay Latino Men living in Canada, (2) Casual Sex, (3) Dating and Love in a Gay Context, (4) Graduation and moving forward.

Advisory committee (*n=6*) answered two questions on a Likert scale: (0) Very useless; (1) useless; (2) somehow useful; (3) very useful. Comments and suggestions. There also was a part for evaluating the vocabulary, rates examples, in general comments about how the intervention could have been approved, or curricular things change.

Conflict of Interest

The authors declare that this study does not present conflicts of interest and that, therefore, the processes adapted by this journal have been ethically followed, stating that this work has not been published in another journal in part or in whole.

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