

The community popular opinion leader HIV prevention programme: conceptual basis and intervention procedures

The NIMH Collaborative HIV/STD Prevention Trial Group*

Objective: To describe the community popular opinion leader (C-POL) intervention employed in the NIMH Collaborative HIV/STD Prevention Trial, including its theoretical, conceptual, and empirical basis, intervention procedures and methods, core elements, and how its content was culturally tailored to address the needs of varied populations.

Design: The programme is designed to identify, recruit, train, and intensively engage C-POLs of a target population to convey HIV risk reduction messages to people in their communities, with the intention of reducing high-risk behavior at a population level.

Methods: Based on the diffusion of innovation theory, the intervention identified, trained, and engaged C-POL within a high-risk community population to advocate, recommend, and endorse the importance of safer behavior to other members of the same population. Nine core elements of the intervention are discussed. Data collected during rapid ethnography were used to adapt the content of the intervention for food market owners and workers in China, male patrons of wine shops and at-risk women congregating nearby in India, young people in social gathering venues in Peruvian barrios, dormitory students in Russia, and people congregating in commercial areas of growth points in Zimbabwe.

Results: The C-POL intervention model taps into community strengths, altruism, and people's desire to do something to help fight against AIDS. With few exceptions, C-POLs participated enthusiastically in the training sessions and reported having conversations in the community.

Conclusion: Rapid ethnography can be used to tailor an intervention to diverse settings while maintaining fidelity to the core elements of the intervention.

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Introduction

The NIMH Collaborative HIV/STD Prevention Trial (hereafter the Trial) is a two-arm randomized outcome study evaluating the impact of a common community-level risk reduction intervention implemented in vulnerable target populations in five countries: China, India, Peru, Russia, and Zimbabwe. The community populations included in the Trial were: (i) food market stall owners and workers in China; (ii) male patrons of wine shops and at-risk women congregating near the shops in India; (iii) young men and women in social gathering points in barrios (neighborhoods) in Peru; (iv) trade and vocational school students living in slumlike dormitories in Russia; and (v) people congregating in

commercial areas of growth points in Zimbabwe. Intensive ethnographic and epidemiological formative studies established high levels of unprotected sex with non-spousal partners, frequent exchange of sex for valuables, high rates of sexually transmitted diseases (STDs), and high vulnerability to HIV infection in these target populations, and led to their selection for the Trial [1–3]. The Trial's objective was to determine the effects of a community-level HIV prevention intervention on two primary endpoints: STD incidence and the percentage of population members who report engaging in unprotected sexual acts with non-spousal partners [4].

The purpose of this article is to describe the intervention employed in the Trial, including its theoretical,

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conceptual, and empirical basis, intervention procedures and methods, core or essential elements of the intervention, and how certain aspects of the intervention were culturally tailored to address the needs of varied populations. Although the study spanned five countries on four continents, it was unique in that a common intervention model was tested across all sites. The intervention identified, recruited, trained, and intensively engaged cadres of community popular opinion leaders (C-POLs) of a target population to convey HIV risk reduction messages to people in their communities with the intention of reducing high-risk behavior at a population level.

Theoretical and conceptual basis of the community popular opinion leader intervention model

Initially, peer-based HIV prevention interventions focused on disseminating information rather than on using social influence to promote behavior change. Research suggests that information alone often does not result in behavior change. The principles of the C-POL intervention are grounded in the 'diffusion of innovation theory', a conceptual framework developed by Rogers [5] and used for more than 30 years as a model to explain how new technological and behavioral innovations are initiated and become adopted, accepted, and normative within community populations. In a variety of marketing, agricultural, social, community, and economic development contexts, Rogers [5] found that innovations often originate with the subset of population members who are its opinion leaders: trusted trendsetters whose actions, attitudes, and views influence those of other members through interactions in existing social relationships. In this sense, C-POLs are therefore models whose views are naturally observed and emulated. In the theory of Rogers [5], opinion leaders are considered to be effective innovators of behavioral trends because they are naturally and widely liked, are perceived as similar, and therefore are able to influence normative perceptions of the population. His studies established that new trends originally adopted by opinion leaders first influence those population members most open to innovation (termed 'early adopters') and then, over time, the innovation gradually diffuses to influence and shift the actions of larger proportions of the population. As this takes place, the formerly new and innovative behavior becomes widely normative.

Various factors can influence the speed and efficiency of innovation diffusion. These factors include whether the opinion leaders' adoption of the innovative behavior can be readily observed, whether the innovation becomes adopted across multiple population segments, the extent

and nature of social communication patterns among population members, and the expected consequences of adopting the innovation. The theory of Rogers [5] suggests that new behavioral trends are most efficiently established after a 'critical mass' of opinion leaders has adopted the innovation. Approximately 15% of a population are usually opinion leaders and early adopters, suggesting that this critical mass creates optimal circumstances for the adoption of an innovation by others.

Diffusion of innovation was first applied to HIV prevention in a series of community-level outcome trials conducted by Kelly and colleagues [6–8] and Sikkema *et al.* [9] in the United States over the past 15 years. Within a population vulnerable to HIV/AIDS that is presently characterized by high levels of unsafe sexual behavior, the behavioral innovations that one seeks to encourage are reductions in high-risk sexual practices and increases in protective behavior among those who are sexually active. On the basis of a diffusion theory model, this trend can become established and will become normative if enough opinion leaders in the presently at-risk population are known by others to endorse and support the value of risk reduction behavior change. Initial tests of this approach were first carried out in gay communities in three small southern cities [7,8], and the model was later rigorously evaluated in a randomized community-level intervention outcome trial undertaken in eight small US cities [6]. In each of these studies, the baseline prevalence of high-risk sexual behavior practices in large community samples of men who have sex with men was determined by surveying all men entering all gay bars in all of the study cities. These surveys revealed that risky practices initially were both common and frequent in the community target populations. The intervention implemented in those studies first identified which members of the target population of men in the clubs were its popular opinion leaders. Observations and nominations made by club bartenders and key informants directly knowledgeable about individuals frequenting the bars, ethnographic observations made by field staff, and the recommendations of known opinion leaders were used to identify popular opinion leaders. Study staff then recruited successive waves of popular opinion leaders to attend a series of five weekly group sessions that provided training, guidance, and inspiration to deliver sustained HIV prevention messages to friends, acquaintances, and others during everyday conversations.

Although diffusion theory provides a framework for conceptualizing the process by which population behavior and norm change can be instigated by the opinion leaders of a community population, it does not directly address the question of what the opinion leaders should say to influence others, especially about making changes in sexual behaviors that are private and are not directly observable. Both social cognitive theory [10] and the theory of reasoned action [11] have shown that constructs such as

knowledge, attitudes, beliefs, intentions, normative perceptions, skills, and perceived self-efficacy predict individuals' adoption of AIDS-preventive behavior changes. Consequently, popular opinion leaders in the gay bar studies were trained to deliver conversational messages that personally recommended and endorsed the value of making risk reduction behavior changes in their communications with others. Across this set of studies, follow-up surveys of all men patronizing intervention city bars revealed significant population-level increases in condom use, and reductions in both the prevalence and frequency of high-risk sexual behavior, usually at a magnitude of approximately 30% change from baseline. Evidence of these effects was present 12 months post-intervention [6] and continued to be observed even 3 years later [12].

Positive effects of HIV prevention interventions based on the popular opinion leader model have also been found in controlled trials with other populations in the United States. Sikkema *et al.* [9] conducted an outcome study with 690 impoverished inner-city women who lived in 18 low-income housing developments, nine of which received only standard HIV educational materials and nine of which received an intervention that, in addition to other components, identified and trained opinion leaders among its residents to deliver AIDS preventive messages in conversations with neighbors. At a 12-month follow-up, risk-assessment surveys of women living in all 18 of the housing developments showed, for women in intervention developments, large reductions in the proportion who had any unprotected intercourse and in their frequency of unprotected sex, and an increased use of condoms. These results, together with findings of a similar intervention among male commercial sex workers in New York [13], have collectively established the efficacy of HIV risk reduction interventions based on the popular opinion leader model with at-risk populations in the United States.

Rationale for the community popular opinion leader model for HIV prevention in developing and transitional countries

Ninety-six per cent of the world's HIV infections have occurred outside of north America, primarily in impoverished developing countries and in countries undergoing difficult social and structural transitions [14]. Large segments of the population in these regions are at imminent risk of contracting HIV, and intervention programmes that can reach vulnerable population segments are especially critical. HIV prevention and service resources in these areas are, however, often limited. A recent study of major HIV service provider non-governmental organizations (NGO) in the capitals or largest cities of countries in Africa, central/eastern

Europe, Latin America, and the Caribbean, including many countries hard hit by AIDS, revealed that the median budget for NGO HIV prevention programmes was less than US\$46 000 per year [15]. Although this underscores the need to provide better funding for international HIV prevention efforts, it also argues for the development of community-level interventions that are not only cost-effective but also feasible given the limited resources of NGO and other community service providers.

The C-POL intervention does not require technological resources or high levels of healthcare professional staffing, is capable of reaching, in their natural social settings, community members who may not be willing or motivated to seek out risk reduction counseling, does not require literacy, and is relatively inexpensive to conduct [16]. Moreover, the model is adaptable across cultures. Although countries and vulnerable communities differ markedly in their languages, risk patterns, behaviors, and values, the notion that certain people in any community population are its opinion leaders and that these individuals can influence the norms and behavior of others through their words and actions is culturally transcendent. The intervention being tested in the Trial mobilizes existing community social resources and 'people power' in efforts to prevent HIV/AIDS. An aim of the Trial is to evaluate an intervention model that: (i) can later be disseminated to NGO and other service providers on a global scale; (ii) will be feasible and practical for implementation with diverse communities at risk of HIV and other STDs; and (iii) adds breadth to the repertoire of HIV prevention approaches urgently needed in international public health efforts to prevent these diseases.

Core elements of the community popular opinion leader intervention model

The conceptual underpinnings of the C-POL intervention, and the premise that popular opinion leaders of a community can be engaged to communicate HIV prevention messages and thereby reduce the risk levels in their social circles, make common sense and have intuitive appeal. Successful implementation of the intervention, however, requires careful preparatory ethnographic fieldwork, the selection of contained community settings characterized by sustained social interaction, and sufficient resources to sustain intervention activities over a considerable period. The model's theoretical basis, research studies that have tested the approach, and practical experience gained in previous field implementations collectively indicate that certain core or essential elements must also be present for the C-POL intervention to have significant impact. HIV prevention interventions that have been implemented with fidelity to these core elements

Table 1. Core elements of the community popular opinion leader model.

Developing momentum, exposure, and repetition
The intervention is directed to an identifiable target population in well-defined community venues where the population's size can be estimated.
Ethnographic techniques are systematically used to identify segments of the target population and to identify those individuals who are most popular, well-liked, and trusted by others in each population segment.
Over the life of the programme, 15% of the target population in the intervention venues is trained as C-POL.
Delivering effective, theory-based HIV prevention messages
The programme teaches C-POL skills for initiating HIV risk reduction messages to friends and acquaintances during everyday conversations.
The training programme teaches C-POL the characteristics of effective behavior-change messages targeting risk-related attitudes, norms, intentions, and self-efficacy. In conversations, C-POL personally endorse the benefits of safer behavior and recommend practical steps needed to implement change.
Groups of C-POL meet weekly in sessions that use instruction, facilitator modeling, and extensive role play exercises to help them to refine their skills and gain confidence in delivering effective HIV prevention messages. Groups are small enough to provide extensive practice opportunities for all C-POL to shape their communication skills and create comfort in delivering conversational messages.
Initiating and sustaining risk reduction conversations
C-POL set goals to engage in risk reduction conversations with friends and acquaintances in the target population between weekly sessions.
The conversational outcomes of the C-POL are reviewed, discussed, and reinforced at subsequent training sessions.
Logos, symbols, or other devices are used as 'conversation starters' between C-POL and others.

C-POL, Community popular opinion leader.

have been successful; however, more generic and lower-intensity peer education programmes that incorporated some but not all of the core elements did not produce robust effects [17–19]. For this reason, the intervention for the Trial was designed to incorporate all C-POL core elements, which are shown in Table 1 and have been described elsewhere in greater detail [20].

Developing momentum, exposure, and repetition

The first three C-POL core elements shown in Table 1 reflect factors necessary to ensure broad and continued impact of the intervention: (i) achieving momentum; (ii) ensuring high intervention exposure; and (iii) delivering repeated prevention messages to a high proportion of population members. This intervention targets an identifiable, stable, and non-transient population that can be reached in well-defined community social venues. Because the intervention model requires that a 'critical mass' of the target population's opinion leaders be engaged to diffuse safer behavior innovation messages to others in the same target population, one must first be able to estimate the size of the target population in the community venues, and then recruit 15% of this total population size to function as behavior change advocates. The model attempts to create a community

social movement against AIDS that is led by cadres of opinion leaders. If too few leaders are enrolled, trained, and engaged, the intervention is unlikely to achieve critical momentum. To ensure that a sufficient number of C-POLs would be trained and that the 15% threshold would be reached, ethnographers at each site estimated the number of unique individuals present in a study venue over a one-week period, and used that number as the denominator term for determining the size of the required C-POL cadre.

Equally important with respect to model fidelity is selecting, as the 15% to be disseminators of behavior change messages, people who really are the natural community opinion leaders (C-POLs) within the population being targeted. Characteristics that can define individuals as C-POLs include their observed frequency of positive social interactions with other members of the target population (e.g. how often they greet or are greeted by others in a venue and are the 'center of positive attention' among others [21]), their reputation as sources of trusted advice to others, their informal social leadership roles with others, their sociometric standing among peers, and the extent to which others are likely to emulate their actions. Sites used up to four methods to identify C-POLs. Field observations made by project staff were used to observe individuals present in a venue who most often and most positively interacted with others and appeared to be sought out by them. Stakeholder or gatekeeper nominations of individuals they knew to be influential with others were sought from those directly familiar, firsthand, with the venue's population. Population member nominations were also used to identify C-POLs through surveys or questions directed by study staff to individuals present in the venue to determine who the population members considered to be most popular and influential. Finally, individuals could self-nominate to participate provided that field staff concurred that the self-nominated individual met the popularity criteria for being a C-POL.

Even in a single gathering point social venue, populations are likely to be composed of multiple social segments or strata that may be distinguished on the basis of sex, age, ethnicity, race, social affiliation patterns, sexual orientation, social class, and characteristics such as being purchasers of sex, sellers of sex, or other dimensions. Different social segments, groups, or strata often have different opinion leaders. Ethnography was used to identify the multiple social segments present in venues so that opinion leaders were identified and could be drawn proportionately from all segments of the target population. This was accomplished by training field staff to carry out observations in venues to characterize the different population segments present and to observe who the potential C-POLs in each segment were. This process ensured that each population segment was reached through the involvement of a sufficient number of its opinion leaders.

Opinion leaders of a target population are the individuals most liked, trusted, perceived as similar, and popular within their social circles. They are not necessarily safe in their own behavior and may not be viewed as 'exemplary responsible citizens' to traditional outsiders. The highest-risk social segments of a community population, those most in need of HIV prevention, would probably be missed by the intervention unless people who are popular and well-liked within very risky segments are fully engaged in the programme.

Delivering effective, theory-based HIV prevention messages

Core elements 4, 5, and 6 in Table 1 pertain to the training of C-POLs to communicate effective, theory-based HIV prevention messages. The 'active ingredient' responsible for the success of the C-POL model is not just changing the views, knowledge, or behavior of opinion leaders; rather, it is engaging those C-POLs to diffuse effective HIV prevention messages actively, frequently, and skillfully to other members of the target population in the course of everyday conversations. Unlike behavioral innovations that are public and readily observable, sexual risk reduction involves private activities, and opinion leaders can diffuse the endorsement of safer behavior such as the use of condoms and the avoidance of high-risk behaviors primarily by talking about these topics with friends and acquaintances.

Explicit discussion about HIV prevention topics does not necessarily arise during everyday conversation, and the topics may be uncomfortable to discuss. This presents two challenges: helping C-POLs gain motivation and comfort in initiating discussions about sexual risk reduction behavior changes, and the skills needed to communicate those prevention messages in an effective manner that will have a positive impact on the behavior of others.

In the C-POL intervention, groups of opinion leaders met in weekly sessions that were intended first to inspire participants to take on roles as AIDS prevention advocates in their community and then to train and guide the leaders in delivering ongoing, effective risk reduction messages. As in other forms of behavioral and social skills training, accomplishing these goals is best achieved by bringing participants together over multiple group sessions, using interaction, discussion, modeling, and role play interactive techniques to help participants practice and refine their behavioral skills for comfortably delivering HIV prevention messages, and guiding opinion leaders in having real-life conversations with friends, acquaintances, and others between group meetings. Repeated and multiple training sessions afford an opportunity for C-POLs to practice new skills and conversational approaches, discuss in the next group meeting the outcomes of real-life conversations that took place, problem-solve barriers encountered, and both plan and be reinforced for having still more conversations before the

next session. Such opportunities would be lost if training took place in a single session, or if ongoing training and follow-up sessions were not well spaced and regular. In order to ensure that all C-POLs have the opportunity for behavioral practice, role playing, skills development, and interactive discussion, sessions had at least two facilitators and not more than 20 C-POLs as attendees.

The potential impact of this intervention approach also rests on what opinion leaders are taught to communicate with others about AIDS-prevention steps and behavior change. In contrast to traditional peer education, in which the messages given are primarily factual and educational, C-POLs were trained during group sessions to introduce prevention endorsement messages into everyday conversations with friends and acquaintances and to convey messages that target the recipient's AIDS-related knowledge, skills, norms, attitudes, intentions, and self-efficacy. Table 2 lists examples of conversational statements that illustrate each of these domains.

Table 2. Examples of conversational statements made by community popular opinion leaders to target psychosocial determinants of risk behavior.

AIDS-related knowledge	'AIDS is a serious problem even here'.
	'No-one can tell by looking if someone has the virus that causes AIDS. Most people with the virus look completely healthy'.
	'The two ways to avoid AIDS are refraining from sex or using a condom when you have sex'.
Risk reduction skills	'It's OK to say no to sex when you aren't sure'.
	'I always carry condoms with me so they are right there if I need them'.
	'I always have a little talk with someone ahead of time to be sure they are willing to use condoms'.
Norms	'Everyone I know is taking AIDS more seriously and using condoms'.
	'I thought it would be hard to bring up using condoms with my partner, but when I did, my partner was relieved, so we used them'.
	'Everyone is saying that condoms are the new way to show someone that you care about them and that you care about yourself'.
	'Smart people are expecting even their boyfriends (girlfriends) to use condoms'.
Attitudes	'Condoms make sex better because they take away worry'.
	'Staying faithful to your one partner makes life a lot easier and protects against AIDS as long as your partner is faithful, too'.
	'People who use condoms are smart'.
Intentions	'Everyone's done a lot of foolish things in the past. Being safer in the future is what is important'.
	'I plan to use condoms from now on, even with a regular partner'.
	'I will try to stay away from sex if I am drinking too much'.
Self-efficacy	'At first, condoms seem unusual. But, they become the natural, normal thing when I used them regularly'.
	'It is possible to leave a situation when things seem to get too sexual'.
	'I thought it would be difficult to buy a condom. But when I went to the pharmacy to get one, they were right there on the shelf, and I could buy it without becoming embarrassed'.

Opinion leaders were also taught to adopt an interaction style in which they offered practical advice to friends about how to make risk reduction behavior changes, to endorse the benefits of safer behavior personally, and to use 'I' statements (rather than 'you should ...') to reinforce their personal endorsement of behavior change further when communicating with others. Although C-POL were taught about the characteristics of effective health communication messages, they were encouraged to talk with others in their own natural style, using language with which they were comfortable, framing messages in their own words.

Initiating and sustaining risk reduction conversations

Core elements 7, 8, and 9 shown in Table 1 all pertain to strategies for helping C-POLs carry out risk reduction conversations with others, especially with members of the community target population with whom C-POL are popular and influential. After C-POLs gained proficiency and comfort in delivering theory-based HIV prevention messages during role play practice in the group training sessions, each was asked to establish the goal of talking with a specified number of friends or acquaintances before the next group meeting. (The number of assigned risk reduction conversations increased over the course of C-POL training.) Group facilitators encouraged each C-POL to make these goals concrete by specifying with whom conversations would take place, how they would be initiated, and when or where they would occur. C-POLs monitored their risk reduction endorsement conversations and discussed the outcomes of these conversations during the next group meeting. Facilitators reinforced the successful efforts of C-POLs and problem solved any difficulties encountered. During each subsequent session, C-POLs set goals for talking with more of their friends, acquaintances, and even strangers, reviewed conversational outcomes, and were encouraged to think of themselves as being in the vanguard of HIV prevention efforts in their community.

Even popular and socially skilled individuals may find it difficult or awkward to initiate explicit conversations about AIDS, sexual behavior, risk reduction, and safer sex. Beyond extensive training and guidance in how to do this, the C-POL model used poster logos placed noticeably in venues where the intervention took place. Logos consisted of memorable but ambiguous visual images without text or reference to AIDS, and were meant to create population curiosity about its meaning. As C-POLs began to have conversations, they were asked to wear buttons, t-shirts, or other items with the same ambiguous logo that appeared earlier on the posters in the venues. These items usually stimulated many questions to the C-POL about the logo's meaning, and the C-POL used the questions as openings for initiating risk reduction endorsement conversations. As the meaning of the logo gradually became known, the

C-POL, who were themselves selected because they were the most popular members of the target population, became visibly identified as endorsers or proponents of safer behavior.

In summary, the C-POL intervention model identified, trained, and engaged popular opinion leaders within a high-risk community population to advocate, recommend, and endorse the importance of safer behavior to other members of the same population. C-POLs did this by learning how to deliver theory-based risk reduction communications during their day-to-day conversations with others, and by being guided to have specified and increasing numbers of conversations between group meetings. The intervention's 'active ingredient' was the repeated, sustained exposure of population members to HIV prevention endorsement messages coming from C-POLs who were popular, well liked, and personally known. High levels of sustained population member exposure were produced by holding frequent reunion sessions with cadres of already-trained C-POLs to maintain their ongoing efforts and also by enrolling multiple or successive waves of C-POLs who proceeded through the same training and reinforced the messages of earlier waves. The intervention enhanced the social identities of C-POLs as HIV prevention advocates, and diffused behavior change through natural social roles among members of the community. By training at least 15% of the target population, the intervention could achieve the momentum necessary to ensure that most target population members would hear multiple, sustained risk reduction messages from individuals known and credible to them.

Implementation of the community popular opinion leader intervention with high-risk populations in five countries

Implementation of the C-POL intervention at research sites in five countries posed considerable challenges because of the coexisting needs to implement the same intervention at all sites, ensure that all sites' intervention activities adhered to core elements of the model, but also to tailor intervention content to different cultures and to the different risk circumstances characterizing multiple target populations. This section briefly discusses how those issues were addressed in the development of the intervention protocol for the Trial.

Venue selection

Table 3 identifies the target population at each country site and describes venues where the population was accessed and intervention activities occurred. Because the Trial design required the identification, location, and randomization of 20–40 similar venues within each

Table 3. Intervention parameters in the NIMH Collaborative HIV/STD Prevention Trial.

Parameter	China	India	Peru	Russia	Zimbabwe
Venues	Retail food markets in Fuzhou	Wine shops and adjacent areas in Chennai	Cantinas, sports fields, and other gathering points in barrios in Lima, Trujillo, and Chiclayo	Dormitories attended by trade and vocational school students in St Petersburg	Social meeting places in growth points throughout the country
No. of venues	40	24	20	24	30
C-POL identification strategies:					
Field observations					×
Population member nominations	×	×	×	×	×
Stakeholder/gatekeeper nominations	×	×	×	×	×
Self-nomination with field staff approval	×	×	×	×	×
Number of C-POL training sessions	4	5	4	5	4
Duration of C-POL training sessions (hours)	2.0–2.5	1.5	2.0–2.5	1.5–2.0	1.5–2.5
Number of reunion sessions per year	6	6–9	9	6–9	6
Reimbursement for C-POL attendance at training and reunion sessions (US\$ equivalent)	6.00	7.00	1.45	15.00	6.00

C-POL, Community popular opinion leader.

country to intervention or comparison condition, we needed to locate relatively large numbers of separate venues in each country. Several considerations influenced population and venue selection [3]. Preliminary epidemiological studies conducted with samples of population members present in potential venues had to ensure the high prevalence of HIV risk behavior or the high prevalence of STD. We also took into account structural and social characteristics of the potential venues. Because a critical determinant of intervention impact is a high level of population member exposure to C-POL messages, each country site used extensive preparatory ethnography to select venues that were compact, geographically well defined, and social in nature, provided opportunities for C-POL conversations, and had relatively stable and non-transient populations regularly present.

Venues within a country were randomly assigned to the intervention or comparison condition, so it was necessary to ensure the independence of venues. The potential for contamination was reduced by selecting venues widely separated from one another. An individual venue in the Trial generally consisted of a well-defined place (or places) where a stable group of between 50 and 500 target population members regularly congregated. Determining the population size present in a venue provided a critical denominator for ascertaining the number of C-POLs who needed to be recruited and trained to reach the 15% minimum threshold. For example, a Chinese market consisting of 100 workers would require a cadre of at least 15 trained C-POLs; a Russian dormitory with 400 residents would require engaging at least 60 of those residents as C-POLs.

Identifying community popular opinion leaders within experimental condition venues

Ethnography field teams spent a considerable time in each of the venues identifying different social segments in the

population and planning strategies for identifying the opinion leaders within each segment. In Russian dormitories, for example, identifiable segments were differentiated on the basis of sex and on the floor or wing of residence in the dormitory building. C-POLs needed to be recruited from among men, women, and people on different floors within each intervention dormitory. In Peru, the social gathering points within venues were attended by at least three distinct population segments: heterosexual and primarily unemployed young men, young women who were open to, and usually compensated for, having sex with men in their barrio and sometimes with men from outside the barrio, and men who were self-identified and locally regarded as gay or homosexual, including transvestites. These different social segments often had different opinion leaders, and cadres of C-POLs had to be identified from within each segment.

To identify C-POLs, all study sites relied on direct observations made by the field staff and ethnographers in the venues and the nominations or reports of population members themselves when asked to identify who, among other individuals present in a venue, they most liked or trusted for advice. Some sites also used nominations made by gatekeepers familiar with crowds in the venue to identify who was most popular, whereas other sites accepted population members who volunteered for the training after their status as opinion leaders was verified by study field staff. Once identified, C-POLs were approached, informed that they were known to be liked and trusted by others with whom they socialized, and told that their help was needed to implement a new HIV/AIDS prevention programme that had the potential to save lives in their own community. These approaches emphasized the important and special role that each identified individual could play in helping to protect and educate others, stressed that the individual was being invited specifically because she or he was well-liked and trusted

among friends, and framed the programme as one that would emphasize positive approaches regarding how to help others. More than 80% of C-POLs who were approached agreed to participate and attended intervention sessions.

Community popular opinion leader training sessions

The C-POL intervention in each country site was delivered in a series of four or five group training sessions, each lasting between 1.5 and 2.5 h, with sessions occurring approximately weekly. This 4–5-week main training phase was followed by reunion or booster sessions that brought C-POL groups back together to reinforce and sustain their efforts on an ongoing basis. Between six and nine reunion sessions were held per year for the 2 years after the main training phase. C-POL training sessions were held in meeting areas convenient to the venues, and each group consisted of two to four facilitators and between 10 and 20 C-POLs. Participants received payments valued at between US\$1.45 and 15, depending on local economic circumstances, to reimburse their transportation and childcare costs, and to compensate for time attending training or reunion sessions. They did not receive any reimbursements for time spent having conversations in the community.

C-POL training sessions followed a standard intervention protocol manual, and intervention supervisors from all sites were centrally trained to conduct the training sessions using the same procedures. On-site facilitator training, monitoring, and supervision were conducted regularly, and annual quality assurance/quality control visits ensured that the intervention was carried out with procedural fidelity to the core elements of the C-POL model and to the procedures specified in the common intervention manual [22].

As implemented at all sites in the Trial, the first training session introduced C-POLs to the programme and explained how and why participants were selected to attend; it urged all members of the group to think of themselves as being in the vanguard of important efforts to prevent HIV/AIDS and STD in their community by talking with others about prevention. The threat of AIDS, national and local HIV epidemiology, risk behaviors, and prevention steps were discussed.

In the second training session, C-POLs were taught how to correct myths and misconceptions held by others about the disease and the characteristics of effective health communication messages applied to HIV risk reduction. Because risk-behavior reduction is a function not only of one's knowledge about AIDS but also of one's attitudes, beliefs, intentions, skills, and peer norm perceptions, C-POLs were taught to compose and practice communication messages that focused on these determinants (see Table 2).

In subsequent training sessions, C-POLs continued refining the types of prevention messages they would deliver. They also discussed and planned how, when, and where they would initiate these conversations, especially with other members of the target population present in the study venues, and set goals at the end of each meeting to talk with a specified number of friends, acquaintances, and strangers before the next meeting. Beginning with the third group session, considerable time was spent reviewing the outcomes of each member's conversations during the preceding week, reinforcing those efforts, problem-solving any difficulties, role playing new conversational skill styles, and planning still more conversations for the week ahead. All sessions employed a range of interactive techniques for teaching behavioral skills, including group discussion, interactive exercises, facilitator modeling of effective conversation examples, role play practice, and goal setting. With no more than 20 participants, C-POL groups were small enough to allow the group to be divided into pairs or triads for role playing so that each participant had an opportunity to practice examples of conversations that incorporated elements such as those shown in Table 2, receive feedback from the group's facilitators, practice further, and refine his or her communication skills.

Some Trial sites with larger venues trained multiple C-POL groups concurrently (such as on different meeting days of each week), whereas other sites trained first one group followed by subsequent waves until they achieved the 15% minimum number of C-POLs trained from an intervention venue. Reunion sessions were held monthly to bimonthly after the main C-POL training phase to reinforce, support, and maintain ongoing conversations by the entire cadre of C-POLs. Some Trial sites reunited only the group of C-POLs trained together from a single venue; other sites brought together groups of C-POLs from multiple venues to strengthen the feeling that a widespread social movement against AIDS was being created.

Tailoring of the community popular opinion leader intervention across sites and populations

The conduct of a common behavioral intervention across diverse countries, populations, and cultures requires not only standardization but also tailoring. If completely different intervention procedures were used in each country, the overall project would consist of five independent and separate studies rather than a unified trial. On the other hand, important cultural differences in initial AIDS awareness, styles of communication, and situations or relationships that confer risk must be recognized. If the same intervention content were used across all sites, the content or examples relevant in one country site might be culturally inappropriate in another. To balance the need for commonality with the need to tailor, the intervention used the same C-POL training procedures across sites, but adapted and tailored certain aspects of the

intervention content, training examples, risk situations being targeted, and communication style taught to C-POLs. This created across-site procedural commonality and also allowed tailoring to ensure cultural appropriateness.

Although the intervention's framework and procedures were implemented consistently across country sites, C-POL messages and communication approaches had to be tailored to the needs, issues, and culture of the population. In Zimbabwe, AIDS is well known, and most opinion leaders are knowledgeable about it. By contrast, knowledge about AIDS is lower in China and misconceptions about the disease were widespread. Consequently, more time was spent during C-POL training sessions to ensure that C-POLs had a foundation of accurate information to share with others.

The balance of attention across topics covered in the C-POL training differed across sites depending upon the initial levels of knowledge, misconceptions, beliefs, and attitudes of the target population found in preparatory ethnography at the site. The Trial's preparatory ethnography also identified the type and context of risk behavior among members of the target population in each country, the language and terms that would or would not be acceptable to use in messages, and the types of sexual relationships in which risky behavior took place [2,23]. For example, Russian dormitory residents were primarily unmarried, and most risk behavior occurred in the context of either casual or serial dating relationships. In India, men visiting wine shops often had sex with casual or commercial sex partners. In both countries, risky behavior was often associated with heavy alcohol use. At other sites, men were often married but also had sex with casual, commercial, or side partners. The primary goals of the intervention and prevention messages were to reduce unprotected sex behavior and to encourage condom use during sex with any non-spousal partner. The types and content of messages delivered by C-POLs were, however, tailored across sites and informed by each site's earlier ethnography study, the nature of relationships and practices that conferred risk in the site's population, and social HIV epidemiology.

We observed differences across site populations in how individuals discussed sex and aspects of behavior that confer risk of HIV and STD. Men were more explicit in their talk than women. Particularly in China, there was a general reluctance to discuss sexual practices, and intervention content was tailored to remain culturally consistent with participant values and language preferences. There was also variability across sites in the availability of low-cost condoms and community medical services for STD treatment. Because population-level behavior change requires access to the means needed to act on change, all sites ensured that population members had access to free or inexpensive condoms and STD treatment.

Lessons learned

The outcomes of the Trial will be known when final follow-up assessments are conducted with large, longitudinally followed cohorts in intervention and comparison venues in each country site. In addition to behavioral and biological outcomes at a population level, intervention process data were collected to analyse key aspects of intervention delivery at each site, including fidelity to the protocol, the number of C-POLs trained, the number of conversations C-POLs had with others, population exposure to the intervention, and other dimensions.

Some conclusions about participant reaction to the intervention can, however, already be drawn. First, because more than 80% of C-POLs who were approached in the community agreed to attend the training, it is evident that the intervention model used in the Trial tapped into community strengths, altruism, and people's desire to do something to help in the fight against AIDS. Second, although adverse event monitoring protocols were in place at all sites, no serious adverse events related to the intervention have been reported to date in any country. Third, we were not certain in advance about the willingness of intervention participants to discuss sensitive aspects of sexual behavior openly, especially in cultures in which these topics are not typically discussed. With few exceptions, attendees at C-POL training sessions became eager and comfortable talking openly about sexual health issues, and a challenge to facilitators was keeping session durations to the parameters planned in the protocol, given the participant enthusiasm and the amount of material to be covered during each session. We believe this phenomenon occurred because many cultures offer few opportunities for individuals to discuss AIDS-related concerns, sexual health, and the role that ordinary people can play in protecting their community from AIDS openly. Finally, although process data are not yet analysed, feedback from the sites has confirmed that most C-POLs took on the challenge of disseminating HIV prevention messages with enthusiasm, energy, and dedication. The outcomes of the Trial will determine the effects of these efforts.

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