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Reducing STD/HIV Stigmatizing Attitudes Through Community Popular Opinion Leaders in Chinese Markets

Ronald E. Rice[1], Zunyou Wu[2], Li Li[3], Roger Detels[4], & Mary J. Rotheram-Borus[3]

1 Department of Communication, University of California, Santa Barbara, CA 93106-4020, USA
2 National Center for AIDS/STD Control and Prevention, Chinese Center for Disease Control and Prevention, Beijing, China
3 Department of Psychiatry and Biobehavioral Sciences, Neuropsychiatric Institute, Center for Community Health, University of California, Los Angeles, CA, USA
4 Department of Epidemiology, School of Public Health, University of California, Los Angeles, CA, USA

Reducing STDs and HIV/AIDS incidence requires campaigns designed to change knowledge, attitudes, and practices of risky sexual behavior. In China, a significant obstacle to such changes is the stigma associated with these diseases. Thus 1 campaign intervention strategy is to train credible community leaders to discuss these issues in everyday social venues. This study tested the effectiveness of such an approach on reducing HIV/AIDS stigma, across 2 years, from a sample of over 4,500 market vendors, in 3 conditions. Results showed an increasing growth in market communication about intervention messages, and concomitant declines in stigmatizing attitudes, across time, with the greatest changes in community popular opinion leaders, significant changes in intervention nonopinion leaders, and little change in the control markets.

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Worldwide, 448 million new infections of curable sexually transmitted infections were reported in 2005 (WHO, 2011), and over 33 million people are living with HIV (UNAIDS, 2010). This study analyzes how one small campaign component (community popular opinion leaders communicating messages to reduce risky sex and increase HIV/AIDS knowledge) in one specific venue (food market vendors in a Chinese city) might help to reduce one possible barrier (stigmatizing attitudes toward STD/HIV) toward improving this dire situation.

STDs and HIV/AIDS in China

STDs and prostitution in China were reduced through mass campaigns in the 1950s. However, with the opening up of Chinese society came migrations to urban areas,

Corresponding author: Ronald E. Rice; e-mail: rrice@comm.ucsb.edu

increased sexual activity (including commercial sex as well as pre- and extramarital sex) and visiting entertainment venues, and more liberal attitudes, leading to high and growing STD rates (Detels et al., 2003; Gill, Huang, & Lu, 2007; Li, Wu et al., 2009; Liao, Schensul & Wolffers, 2003; Smith, 2005; Wu et al., 2007).

The estimated number of people living with HIV in China rose from 350,000 in 2001 to 770,000 in 2009. AIDS-related deaths at least doubled from an estimated 26,000 to 54,000 during the same time period. There were an estimated 48,000 newly infected people in 2009, when AIDs became the leading cause of death among infectious diseases in China (UNAIDS, 2010; UNGASS 2010). Overall, prevalence is low, and the rate of growth appears to be decreasing, but there are significant epidemics in some areas. Gill et al. (2007) report considerably higher figures, such as approximately 650,000 people living with HIV/AIDS in 2005, with the highest prevalence among intravenous drug users, then commercial sex workers, and migrant laborers. Sexual transmission became the most frequent source in 2005. Primary causes include infected plasma in the early 2000s, growing sex trade, sex outside of marriage, and risky behavior by migrant workers (Gill et al., 2007).

Some communication campaigns in China have sought changes in knowledge, attitudes, and behavior concerning risky sexual behavior. The presumed link is that greater STD/HIV awareness and knowledge fosters safer sex behavior, thus lower incidence of STDs and HIV. For a summary of the integration of HIV/AIDS projects in China, see Wu et al. (2011). However, as with health campaigns in general (Rice & Atkin, 2012), these efforts have produced mixed results (Lau et al., 2007). One obstacle to general campaign success is that stigmatizing attitudes, especially in the Chinese markets studied here, may be substantial barriers to providing, discussing, and acting on information concerning STDs/HIV. It may be possible, however, to alter these attitudes through opinion leaders who interact with and are respected by their community, and who both model conversational behavior and diffuse awareness and knowledge.

Stigmatizing attitudes about STDs/HIV

The nature of stigma, especially about STDs/HIV

Stigma is "the identification that a social group creates of a person (or group of people) based on some physical, behavioral, or social trait perceived as being divergent from group norms" (Castro & Farmer, 2005, p. 54, referring to Goffman, 1963). Goffman saw stigma as an attribute, behavior, or reputation associated with a socially discredited stereotype, and thus deviant, essentially separating one's virtual social identity from their actual social identity, leading to prejudice and discrimination (see also Link & Phelan, 2006). Deacon (2006) developed an integrated theory of stigma (consisting primarily of "othering, blaming, and shaming") in the context of HIV/AIDs illness management, which includes the psychological and social aspects. Central to this theory is a definition of stigma as a social process involving: "1. Illness is constructed as preventable or controllable; 2. 'Immoral' behaviors causing the

illness are identified; 3. These behaviors are associated with 'carriers' of the illness in other groups, drawing on existing social constructions of the 'other'; 4. Certain people are thus blamed for their own infection; and 5. Status loss is projected onto the 'other', which may (or may not) result in disadvantage to them'' (p. 421).

Stigma involves attributions about character, is more general than prejudice, is generated from both individual responses to perceptions of deviance as well as group membership categorizations, and varies across cultures and contexts (Dovidio, Major, & Crocker, 2000; Genberg et al., 2009; Lieber et al., 2006). Primary attribution dimensions have included perceived danger (such as consequences for others), visibility, and controllability (Dovidio et al., 2000). A rigorously developed measure of stigma included three dimensions (shame, blame, and social isolation; perceived discrimination; and equity) (Genberg et al., 2008) (although Deacon, 2006, explicitly distinguishes discrimination from stigma).

Cultural taboos and norms against immoral or deviant behavior, as well as poor knowledge and social myths about the risk, heighten stigmatization, especially in a collectivist culture such as China (Yoshioka & Schustack, 2001). For example, STDs and HIV/AIDS are also stigmatized because of their association with other taboo issues such as drugs, sex, homosexuality, and death (Aoki, Ngin, Mo, & Ja, 1989; Lieber et al., 2009). Thus, those fearful of stigma may attempt to reduce the visibility of their condition, internalize their stigma, and may be held responsible for the cause of the stigma (see Heatherton, Klecik, Hebl, & Hull, 2000).

Being associated with STDs and HIV/AIDS can generate considerable stigma. Themes emerging from semistructured interviews about stigma with 106 people (commercial sex workers, migrant and local market workers, and STD clinic patients) from an urban center in Eastern China included: fear, embarrassment, discrimination, health-seeking behavior, shame, isolation, moral judgments, and/or exposure (Lieber et al., 2006). Chinese rural-to-urban migrants' stigmatizing attitudes (during 2002–2003) included denial, indifference, labeling, separation, rejection, status loss, shame, hopelessness, and fear (Hong et al., 2008). An assessment of stigma based on 209 market employees and stall owners in five Chinese markets found substantial stigmatizing attitudes towards those with HIV (from 50% to 85% depending on the question; Lee, Wu, Rotheram-Borus, Detels, Guan, & Li, 2005). Similarly high rates of stigmatizing attitudes were found in a survey of female migrants in Shanghai (Cao et al., 2010).

Stigmatizing attitudes are not static or necessarily permanently bound by social norms or culture, however. Influences on negative attitudes include never having discussed HIV/AIDS or being tested for HIV, and low knowledge of antiretroviral therapies (ARVs) (Genberg et al., 2009). A study of over 1,000 health service providers found that those who were younger, and had personal contact with other people living with HIV/AIDS, had more liberal attitudes than what they thought most people in their society believed (Li, Liang et al., 2009). These attitudinal differences were greater for those working in places with lower discrimination intent, perceived interpersonal discrimination, and general prejudicial attitudes towards those with HIV/AIDS.

Broader factors also influence HIV/AIDS stigma, such as higher HIV/AIDS-related risk behavior, and lower development, in one's community (Chen, Choe, Chen, & Zhang, 2005).

Consequences of stigma

People living with HIV (PLHIVs) who expect stigma and discrimination may fail to take advantage of healthcare and economic opportunities available to them, including counselling, healthcare, or public assistance (Deacon, 2006, p. 424; Liu, Li, & Ma, 2002; Liu, Ma, Yu, Xie, & Detels, 2001; Reece, Tanner, Karpiak, & Coffey, 2007). Because of stigma fears and inaccurate knowledge, many self-treat, use Chinese folk remedies, obtain inappropriate treatments from local pharmacies, or go to local unlicensed private physicians with little evaluation or follow-up (Guan et al., 2009). A meta-analysis of 24 studies between 2000 and 2007 showed that high HIV stigma was related to low social support, poor physical health, poor mental health, older age, and lower income (Logie & Gadalla, 2009). Even health service providers may become stigmatized through their association with AIDs/HIV patients (Li, Liang et al., 2009; Li et al., 2010).

Because of these deep taboos, most people have very little access to HIV knowledge. Even most of the mass media coverage involves general HIV/AIDS news, rather than knowledge or stigma reduction education, which accounts for less than 4% of all coverage (Bu & Liu, 2004). There are positive signs, however. Li, Rotheram-Borus et al. (2009) found that exposure to multiple sources of HIV information (with mass media being at least one of the sources) was significantly related to more accurate HIV knowledge and a less stigmatizing attitude toward people living with HIV/AIDS.

Opinion leaders

Opinion leaders as diffusion channels

Diffusion takes place within a system that includes social relationships based upon power, community and cultural norms, and public acceptability. So, in order to reduce their uncertainty about an innovation, people turn to those in their network who are credible and trustworthy (Rogers, 2003). The classic *two-step flow model* proposes that the meaning and salience of information from the mass media (or institutions) are to some extent mediated, evaluated, and made available by interactions with others, especially opinion leaders (Katz & Lazarsfeld, 1955; Lazarsfeld, Berelson, & Gaudet, 1944; Rosario, 1971).

Opinion leaders are not the earliest adopters, but are likely to promote an innovation or social norm before the majority, by staying aware of community discussion and opinion (Rogers, 2003). People occupying the network role of opinion leader tend to be similar to other network members, but with slightly higher education, exposure to ideas that are new but still normative, and nominations by others as sources of advice and knowledge. Typically, opinion leaders exhibit prestige, higher social status, cosmopolitanism, and mass media exposure (Rosario, 1971). These characteristics

provide the basis for how and why opinion leaders occupy and maintain their role, and have influence within their social network. Thompson, Estabrooks, and Degner (2006) reviewed roles similar to opinion leaders, including facilitators, champions, linking agents, and change agents. They identified two similarities across each of these roles: the assumption that interpersonal contact increases the availability of knowledge, which in turn leads to behavior change, and that all these roles function as change agents. Several techniques exist for identifying opinion leaders for campaigns, each with advantages and disadvantages (Fisher, 1975; Valente & Pumpuang, 2007). Diffusion occurs faster when opinion leaders are optimally matched with their intended networks (Valente & Davis, 1999).

Opinion leaders serve a variety of functions such as providing access and legitimation to outside programs and innovations, feedback to the programs from their communities, role models for desired behaviors and attitudes, channels for interventions, and ongoing program institutionalization. Opinion leaders influence others through increased awareness, persuasion, developing or reinforcing norms, and applying community resources (Valente & Pumpuang, 2007).

Diffusion of innovation theory identifies five primary perceived innovation attributes that influence adoption decisions. One of them is *observability* (including both perception and communication) of the innovation or practice. Observability of an innovation's use and benefits in solving a problem is generally necessary for increased adoption and diffusion, but practices and ideas such as safer sexual behavior and knowledge are not readily observable (Bertrand, 2004). Thus these messages are more likely to be accepted within a social context when communicated and modeled by opinion leaders. However, as opinion leaders generally serve to legitimize social norms, innovations that are taboo or significantly counternormative are not likely to be endorsed by opinion leaders (Becker, 1970; Rogers, 2003). Indeed, when proposed changes contradict social norms (including stigmas), opinion leaders can be effective obstacles to further diffusion. So it is crucial that the opinion leaders agree with, and support, the proposed changes in attitudes, norms, or behaviors.

Opinion leaders and their immediate and indirect networks

The *two-step flow* process of course is a special instance of a more general *multistep flow* (see Valente & Fosados, 2006). Depending on the type and network pattern of the opinion leader, the information may be diffused to a small or large number and diverse or homogenous set of people in the next phase, and so on in subsequent phases (Rogers, 2003). Weak ties to others from an opinion leader or the next person allows diffusion into new, and more diverse networks, further spreading the information beyond the opinion leader's boundaries (Weimann, 1982). Studies have shown that conversation about a health campaign within social networks is a both a direct and mediating influence between media activity and effects (e.g., normative perceptions and behaviors) through secondary diffusion and social influence (Hornik & Yanovitzky, 2003; Hwang, 2012). Many campaigns, therefore, have included a general social influence component (e.g., subjective norms in the

Theory of Planned Behavior; Ajzen, 1991) or specifically targeted or included opinion leaders (see Valente & Davis, 1999). Under favorable conditions, the percent of the social community aware of the innovation reaches a *critical mass* or *tipping point*, after which the information spreads much more quickly, as there are increasingly more people interacting with each other, spreading and accepting the idea, and individual network adoption thresholds are met (Rogers, 2003; Valente, 1995).

Opinion leaders, because they must understand, internalize, and elaborate the message and its implications for their community or network (at least if they intend to be persuasive and successful), are themselves more likely to accurately learn, recall, and agree with the campaign message, and change their own attitudes and behaviors accordingly.

Community popular opinion leaders

Kelly and colleagues developed and applied the opinion leadership concept to interventions attempting to reduce HIV-related risks, by training *popular opinion leaders* (POLs) within their *communities* (thus CPOLs) to diffuse relevant social norms messages (Kelly, 2004; Kelly et al., 1991, 1992, 1997).

This is quite distinct from the older and more general *peer educator* approach. Peer education, as an approach, was initially developed as way to help young people develop peer resistance skills (Tobler, 1992). Shiner (1999) explicates three major aspects of peer education. One is the nature of "peerness"—a wide range from close friends to other participants in an activity, but foundation is in shared identity and homophily, especially similar age, ethnicity, social class, etc. The second is an intervention's aims and methods—emphasizing peer attitudes and experience, interactive and participative learning, and both role modeling and credible cognitive orientations, as well as the larger agenda of the program. The third is the nature of peer involvement with both the project—ownership, commitment, empowerment, skills acquisition, and so on—and with the intended community members—educating one's peers, generally in a natural social setting.

Turner and Shepherd's (1999) assessment of 10 peer education program claims showed little expressed theoretical foundations, although Shepherd identifies a variety of theories that have components that could be applied. However, even those with some limited basis were not associated with much empirical evidence. On the other hand, some projects (such as in Zambia; Hughes-d'Aeth, 2002) have shown positive outcomes, such as increased community awareness and accuracy of HIV/AIDS, and modification of common practices that fostered spread of the virus. For the peer educators, themselves, even just completing training has been associated with more leadership (though not self-esteem), health knowledge, and active involvement in changing personal health behaviors (Badura, Millard, Peluso, & Ortman, 2000). For reviews of using peer leaders in health communication campaigns, see Valente and Davis (1999), and Valente and Fosados (2006).

Kelly (2004) argued that "'peer education' is an ill-defined, generic concept. . . . vague" (p. 141), generally referring to the notion that messages from people who are

more similar to (homophilous with) the intended receiver will be more credible and thus effective. Instead, Kelly insisted that a comprehensive POL approach requires adherence to nine very specific practices (2004, Table 1, p. 141), and is likely affected by the local context. These include developing targeted psychosocial persuasive (not just educational or informational) messages, and identifying, extensively training, and regularly convening representative popular opinion leaders to engage (repeatedly) in naturally occurring personal conversations related to psychosocial factors (e.g., risk, intentions, self-efficacy, norms, etc.), while being clearly identified with the project logo, with members of the intended small well-defined social communities, in their social venues, about more appropriate norms and behaviors; and achieving a critical mass to self-sustain those new norms and behaviors. The Centers for Disease Control and Prevention (2009) provides very detailed procedures and guidelines for the CPOL approach.

The guiding principle of this study, then, is that CPOL intervention may diffuse HIV knowledge in a nonstigmatized way by regular, daily conversations. A NIMH (2007) formative evaluation study across five countries found consistent characteristics of community popular opinion leaders: respectable, credible, having sexual and general life experience, trustworthy, empathetic, well-spoken, and self-confident. ''When spoken words of advice concerning HIV prevention and personal examples come from persons who one already knows and likes, the impact of the messages will be stronger'' (Kelly, 2004, p. 143). Amirkhanian, Kelly, Kabakchieva, McAuliffe, and Vassileva (2003) used ethnographic and network studies to identify leaders of groups of young men who have sex with men, and trained them to communicate HIV prevention messages. The intervention resulted in increased condom use, safer sex social norms, knowledge of risk reduction factors, and, especially relevant to the present study, comfort in speaking about AIDS with other group members. A review of studies applying the CPOL approach to reducing HIV-related risks among gay men, adolescents, and women in low-income housing indicated that achieving behavioral change requires a sufficient percentage of community POLs, and a sufficient length of campaign (in some cases, at least 15% of POLs, for at least a year) (Elford, Bolding, & Sherr, 2001; Kelly, 2004, p. 143).

Research question and hypotheses

Based upon this brief review of literature on STDs and HIV/AIDS in China, stigmatizing attitudes, opinion leaders, and popular (community) opinion leaders, we propose a research question and two sets of hypotheses. As a process evaluation of the intended mediating mechanisms of CPOL and market communication designed to reduce stigma, we need first to verify implementation and awareness of project message communication (Rice & Foote, 2001; Valente, 2002; Weiss, 1972).

RQ1: Is communication about the intervention messages, with CPOLs and other market members, (a) higher in the intervention conditions, and (b) does it increase over time? More generally, (c) Is awareness of the project greater in the intervention conditions?

H1: Stigmatizing attitudes about HIV/AIDS decline: (a) across time, (b) the most for CPOLs, less for non-CPOLs (both groups being in the intervention condition), and least for the control condition.

H2: The decline in stigmatizing attitudes is influenced by: (a) using community popular opinion leaders as STD/HIV communication sources in the intervention sites, (b) being a CPOL, and (c) relevant control variables (gender, education, marital status, discretionary money, and leisure/entertainment places visited; for the association of discretionary money and entertainment venues in China with risky sexual behavior; see Li, Liang et al., 2009).

Method

Broader project

The current study is part of the comprehensive NIMH Collaborative HIV/STD Prevention Trial, including an ethnographic study, pilot studies, epidemiological study, and a randomized controlled trial (Detels et al., 2003; NIMH, 2007) in five countries (China, India, Peru, Russia, and Zimbabwe). The NIMH trial was designed explicitly to identify, recruit, train and engage community popular opinion leaders to communicate HIV risk-reduction messages, as an intervening process intended to foster changes in the larger behavioral issues of risky sex and the physiological outcomes of STDs. Based on the Kelly POL model, and related ethnographic research (Lieber et al., 2009), the social norms goals for the Community Popular Opinion Leader (CPOL) component of the NIMH program included increasing seeking treatment at STD clinics, engaging in conversations about sexual behavior among partners, using condoms in extramarital relationships, and developing nonstigmatizing attitudes about those with STDs (Li et al., 2010). For more details and analyses from this project, also see Caceres et al. (2007); Detels et al. (2003); Guan et al. (2009); Li, Liang et al. (2009); Li et al. (2010); Lieber et al. (2006); NIMH (2007, 2010); Rotheram-Borus, Li, Liang, Wen, Qu, and NIMH Collaborative HIV Prevention Trial Group (2011); and Wu et al. (2007). This study analyses only the popular opinion leader, intervention messages, and stigmatizing attitudes portion of the China data.

Sample

The broader project conducted an ethnographic research study to identify appropriate venues and populations. The final factors included: "the willingness of stakeholders and gatekeepers of the venues to cooperate; geographical boundaries defining each venue; population stability within venues; the independence of venues and nonoverlap of population members across multiple venues; population size within each venue; social interaction opportunities; and either a high level of sexual risk behavior or a high prevalence of sexually transmitted diseases (STDs) or HIV" (Caceres et al., 2007, p. S19).

In China, the venue selected was food markets and their vendors in Fuzhou City, eastern China, relatively representative of Chinese urban center populations.

The full sampling frame initially included 4,510 market vendors from 40 local food markets (selected from 95 candidate possible markets, and with sufficient distance to minimize communication between them). Food markets in this region typically have 50–150 stalls, each with 2–3 owners and employees. Market vendors socialize within a few blocks of the market; that is, the market represents an identifiable, viable community. Market vendors are officially ''migrants,'' even if they arrived 10 or 20 years ago to the city from rural areas. Thus they typically do not have the same social norms/constraints as they held in their villages, and they are also relatively affluent enough to purchase sex. So they and their markets represented an appropriate target audience and venues (Detels et al., 2003). For markets with fewer than 100 stalls, all stalls were approached; for those with more, 100 stalls were randomly selected. The stalls' vendors (owner and/or employee, between the ages of 18–40 years) were asked to participate; 92% agreed. The 40 markets were matched in 20 pairs on baseline STD rates and randomly assigned to either the intervention or control conditions.

The initial baseline sample was the 4,510 market stall vendors. To be eligible for the ongoing project, respondents had to have indicated that they had engaged in sexual relations in the past 6 months and were between 18 and 49 years old ($N = 3912$). Survey participants providing informed consent in both control and intervention markets were driven to the local Institute of Health Education for interviews and a physical exam, collection of biologic specimens, and risk assessment, and provided treatment, counseling, further assessment, and/or antiretroviral treatment when appropriate, and were also paid a small amount for their time (20 Yuan, or about $2.50 USD).

Identifying and training community popular opinion leaders

In the intervention sites, salient social networks (mahjong players, gamblers, etc.) and their popular opinion leaders were identified based on ethnographic observations in the markets, opinion leadership nominations by market managers and key informants, nominations at the baseline interview by 30 employees in each market (who identified those who were most popular, and who frequently and positively interacted with others), and self-nomination (Li et al., 2010; NIMH, 2007, 2010). The local Centers for Disease Control & Prevention team in each market considered as potential CPOLs those who were identified by at least two of those methods.

In light of Kelly's recommendation, and to help insure sufficient CPOLS in the case of potential loss of CPOLs in the sample over time, approximately 25% of these CPOLs were then recruited to take on roles as AIDS prevention advocates in their market. These recruits are referred to as CPOLs, while all other market vendors in the sample are referred to as non-CPOLs. In accord with the Kelly and CDC POL procedures, the CPOLs received four weekly training sessions with 11 bi-monthly support sessions over the 2-year period and learned, via interaction, discussion, modeling, role-play, and other techniques, how to communicate five HIV risk-reduction messages in regular everyday conversations with friends, other market employees, neighbors and

acquaintances within the market. At the end of each session, conversational goals were set, and at the next meeting, participants reviewed, discussed, and reinforced the goals. The messages were tailored by country and population, based on prior ethnographic, epidemiological and survey studies, but always involved conveying ''messages to others that provided AIDS-related knowledge and information on risk reduction steps; suggested skills or strategies that the message recipient could use to reduce risk; instilled positive attitudes and confidence for using condoms or avoiding unprotected sex; and personally endorsed the benefits and importance of making or attempting to make risk reduction behavior change'' (NIMH, 2010). The five messages used in this China project were that people (a) should have regular annual physical check-ups, (b) should have open conversations about sexual health w/partners, (c) should use condoms to prevent sexual transmission of disease out of or before marriage, and that (d) HIV is a serious health problem, and (5) STDs is a serious health problem in the community. CPOLs regularly attended the training sessions; gained local community status for being part of the project; wore logos on t-shirts, hats, or other apparel to stimulate conversations with friends and neighbors; gained some market social status for occupying this role; and continued their intervention conversations during the 2 years. The active everyday conversations with market members across the five topics provided a much more interactive and personal approach than typical public health lectures, and are here considered as the proximal mechanism for reducing stigma. The project applied explicit program implementation quality and assessment procedures, by external monitors, at each site (NIMH, 2010).

Time periods and conditions

Three panel surveys were conducted: at Baseline (T1; in 2005), 12 months (T2), and 24 months (T3). An additional Exit survey was also provided immediately after administration of the T3 survey. This was developed to obtain additional measures of interest not included in the four other countries, especially communication with media, CPOLs, and others in the market about the intervention messages. Relevant variables, and eligible respondents, from each survey were merged into one dataset, matched by individual ID. Three conditions are compared in this study: control markets, non-CPOLs in intervention markets, and CPOLs in intervention markets.

Measures

Table 1 provides the measures, constituent items and wording, response choices, scale alphas, and descriptive statistics first for the Baseline, T2, and T3 surveys. Table 2 provides the same information for the Exit survey.

Baseline (T1) survey measures

Demographics. Gender; number of years of education; marital status; discretionary money; and times per month visited any of four leisure/entertainment places.

Table 1 Baseline, 12 Months (T2) and 24 Months (T3) Measures, Definitions, Descriptive Statistics and Scale Reliabilities, Overall, and By Condition; Eligible Participants Only

				Intervention					
	Control			non-CPOL			CPOL		
Variables and Descriptions	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Baseline: Demographics									
• *Gender*: (0M 1F)	1931	0.55	0.50	1459	0.55	0.50	522	0.53	0.50
• *Education*: Number of years in school	1931	6.41	3.50	1459	6.49	3.55	522	7.08	3.26
• *Marital Status*:	1931			1459			522		
1 Married/live w partner %		92.3			91.9			96.7	
2 Never married/single %		.7			7.4			3.1	
3 Widowed/sep/divorced %		.6			.7			.2	
• *Discretionary money*: Self-reported discretionary yuan income per month (1 < 200 35.4%, 2 201–500 38.0%, 3 501–1000 2.1%, 4 > 1000 6.5%) (10 yuan = about US$1.33 at time of study)	1931	1.96	0.91	1459	2.00	0.92	521	2.01	0.91
• *Leisure places*: Number of times/month visited each of four places (bars, night clubs, discos, massage parlors) (converted to 0 none or 1 for each, then counted across the 4)	1931	1.73	1.18	1459	1.90	1.19	522	1.85	1.09
Baseline: Messages and stigma									
• *People messages baseline*: Mean, across the 5 intervention messages, of: In the past 3 months, how many people have you talked with about each of the five intervention messages: people should have regular annual physical checkups, open conversations about sexual health with partners, use condoms to prevent sexual transmission of diseases outside or before marriage, HIV is a serious health problem, and STDs are a serious health problem in your community ($\alpha = .86$)	1931	0.27	0.82	1459	0.28	0.73	522	0.37	2.28

Table 1 *Continued*

Variables and Descriptions	Control			Intervention					
				non-CPOL			CPOL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
• *Stigma baseline*: Mean of: HIV person done wrong and deserves to be punished, people w/HIV should be isolated, do not want be friends w/someone w/AIDS, and safe for someone w/HIV to care for other's children (reversed) (1 strdis 5 stragree; α = .69 for both Intervention and Control)	1928	3.98	0.91	1458	3.94	0.91	522	3.88	0.98
T2 (12 months)									
• *People Messages T2*: See People Messages Baseline (α = .82)	1558	0.23	0.90	1146	0.64	2.03	516	8.08	15.76
• *Stigma T2*: See Stigma Baseline (α = .83 for Intervention, α = .78 for Control)	1557	3.92	1.01	1145	3.76	1.09	516	2.81	1.33
T3 (24 months)									
• *Logo T3*: Seen symbol project logo last 3 months (0n 1y)	1612	0.05	0.21	1174	0.81	0.39	520	0.99	0.08
• *People Messages T3*: See People Messages Baseline (α = .98)	1612	0.23	0.81	1174	1.48	2.90	520	11.1	12.19
• *Stigma T3*: See Stigma Baseline (1strdis 5stragree; α = .86 for Intervention, α = .81 for Control)	1611	3.81	1.10	1174	3.13	1.28	520	1.91	0.95
• *Stigma Baseline-T3 Difference*: Stigma Baseline minus Stigma T3: decrease in negative stigmatizing attitudes over time (1strdis 5stragree)	1608	0.19	1.05	1173	0.84	1.27	520	1.98	1.23

Market messages. Respondents were asked the number of people in the marketplace they talked with about each of five intervention messages, and the mean score for the number of people across the five messages was computed (*People Messages Baseline*).

Stigmatizing attitudes. Each time period, respondents were asked four items concerning stigma association with HIV/AIDS (from USAID, 2004), and the mean of these was computed (*Stigma Baseline*).

12-month (T2) survey measures

These include the same messages and stigma questions as at Baseline: *People Messages T2* and *Stigma T2*.

24-month (T3) survey measures

These include the same message and stigma questions as at Baseline and T2: *People Messages T3*, and *Stigma T3*, as well as the difference between the stigma mean at Baseline and at T3 (*Stigma Baseline-T3 Difference*). Also included was: Seen project logo in last 3 months? (*Logo T3*).

Exit survey measures

Table 2 describes the measures from the Exit survey in four categories.

(1) *CPOLs and Messages* includes: are you a CPOL? (*CPOL Exit*); how many CPOLs do you know (*CPOLs Know Exit*); the mean number of CPOLs talked to you about each of the five intervention messages (*CPOLs Messages Exit*); and the mean number of CPOLs talked to you about each of the five intervention messages (*CPOLs Messages Times Exit*).

(2) *People in Market and Messages* includes: In the Intervention markets, the mean number of other market people talked to you about each of the five intervention messages (*People Messages Intervention Exit*) and the mean number of times other market people talked to you about each of the five intervention messages (*People Messages Intervention Times Exit*); and in the Control markets, the same two measures: *People Messages Control Exit* and *People Messages Control Times Exit*.

(3) *HIV/STD Knowledge and Seriousness* includes: correct knowledge of HIV transmission mechanisms (*HIV Correct Exit*); and disagreement that STDs and HIV are serious problems in the community (*HIVSTD Serious Exit*).

(4) Finally, *Sources and Media Awareness* includes: seen project logo in last 24 months (*Logo Exit*); source of information about STDs or HIV from CPOLs (*Information Source CPOLs Exit*); and identification of two correct out of four listed media spokespersons about STD/HIV (*Media Correct Exit*).

Table 2 Exit (24 months) Measures, Definitions, Descriptive Statistics and Scale Reliabilities, Overall, and By Condition; Eligible Participants Only

	Control			Intervention					
				non-CPOL			CPOL		
Variables and Descriptions	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
CPOLS and messages									
• *CPOL Exit*: Are you a CPOL? (intervention markets only) (0n 1y)	10	0.00	0.00	889	0.00	0.00	522	1.00	0.00
• *CPOLs Know Exit*: How many CPOLs do you know? (intervention markets only, includes both non-CPOLs and CPOLs)	7	2.43	2.76	883	2.83	1.97	488	2.62	1.74
• *CPOLs Messages Exit*: Mean of: In the past 3 months, have CPOLs talked to you about: use condoms outside of marriage, regular health check-up, open sexual conversation with husband/wife, STDs/HIV? (0n 1y; $\alpha = .92$) (intervention, non-CPOLs only)	8	0.38	0.52	882	0.61	0.43	2	0.50	0.71
• *CPOLs Messages Times Exit*: Mean of: In the past 3 months, approximately how many times have CPOLs talked to you about: use condoms outside of marriage, regular health check-up, open sexual conversation with husband/wife, STDs/HIV? (if yes, number of times; $\alpha = .95$) (intervention markets only, non-CPOLs only)	8	4.38	7.17	882	9.50	14.6	2	16.0	22.63
People in market and messages									
Intervention markets only									
• *People Messages Intervention Exit*: Mean of: In the past 3 months, Have other market people talked to you about: using condoms outside of marriage, regular health check-up, open sexual conversation with husband/wife, STDs/HIV? (0n 1y; $\alpha = .92$)	0	—	—	905	0.35	0.43	518	0.70	0.41
• *People Messages Times Intervention Exit*: Mean of: In the past 3 months, approximately how many times have other market people talked to you about: use condoms outside of marriage, regular health check-up, open sexual conversation with husband/wife, STDs/HIV ($\alpha = .98$)	0	—	—	905	1.22	2.72	518	6.45	12.09

Table 2 *Continued*

Variables and Descriptions	Control			Intervention					
				non-CPOL			CPOL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Control markets only									
• *People Messages Control Exit*: See People Messages Intervention Exit (0n 1y; α = .74) (control markets only)	1601	0.08	0.20	0	—	—	0	—	—
• *People Messages Times Control Exit*: See People Messages Times Intervention Exit (α = .77) (control markets only)	1601	0.21	0.73	0	—	—	0	—	—
HIV/STD knowledge and seriousness									
• *HIV Correct Exit*: (A measure of correct knowledge about HIV) Choose all possible ways of HIV transmission: handshakes, casual contact at workplace, unprotected sexual contacts, mosquito bites, kisses, sharing needles, and sharing meals. (Accurate knowledge of HIV transmission was choosing both the third and sixth and none of the others; 0 inaccurate, 1 accurate)	1931	0.15	0.36	1459	0.37	0.48	522	0.86	0.35
• *HIVSTD Serious Exit*: Mean of: HIV is a serious health problem in your community, and STDs are a serious health problem in your community (1stragree 5strdis; α = .94)	1614	2.89	0.79	1175	2.92	0.85	522	2.82	1.01
Sources and media awareness									
• *Logo Exit:* Seen project logo past 24 months? (intervention and control markets) (0n 1y)	1614	0.01	0.10	1175	0.78	0.41	522	0.99	0.08
• *Information Source CPOLs Exit*: Where do you get information about sexually transmitted diseases or HIV (for transmission, epidemic, treatment and care, HIV/STD social events)? (Many mass media and interpersonal sources provided; but here only counting from CPOLs at market) (0n 1y)	1614	0.01	0.11	1175	0.56	0.50	522	0.78	0.42
• *Media Correct Exit*: (An implied measure of mass media exposure/awareness about HIV/AIDS) Choose from a list of four people all those you believe were spokesperson for HIV/AIDS issues in China (two of the four were correct; choosing at least one of those two was counted as exposure/awareness; 0 not correct, 1 correct)	1614	0.16	0.36	1175	0.24	0.43	522	0.51	0.50

Results

Comparing conditions

Comparing the sample in the control condition to the samples in the two intervention conditions (non-CPOLs and CPOLs) at *Baseline*, Table 1 shows essentially the same figures throughout. There was a very small difference in marital status, which was statistically significant due to the large sample size ($\chi^2 = 14.6$, $p < .01$). Based on an overall MANOVA (multiple analysis of variance) analysis, $F(42, 8277421) = 42.3$, $p < .001$, partial $\eta^2 = .005$, years of education was very slightly higher for intervention market CPOLs (compared to the other two, partial $\eta^2 = .004$), as is typical for opinion leaders; and intervention market non-CPOLs attended very slightly more leisure places, compared to the Control ($p < .05$, with a partial η^2 of only .005). Obviously, these partial η^2 value are very tiny, with the statistical significance primarily due to the large sample sizes. Essentially, as we would expect from the random assignment and pairing of control with intervention markets, the samples in the three conditions are equivalent.

RQ1: Project implementation indicators

Comparing project messages across conditions

The mean number of people in the markets that one talked with across the five intervention messages rose over time in the two intervention conditions (People Messages Baseline, People Messages T2, People Messages T3). Considering the T2 and T3 measures in Table 1 and Figure 1a, MANOVA showed significant overall differences in means across the three conditions (control and the two intervention conditions) in People Messages T2 (partial $\eta^2 = .16$) and People Messages T3 (partial $\eta^2 = .35$). On People Messages T2, the mean in the intervention market CPOLs condition was significantly higher than for the other two groups (as would be expected) (8.1 vs. .23 for control market and .64 for intervention non-CPOLs) ($p < .001$, Bonferroni corrected). On People Messages T3, the means in all conditions were significantly different ($p < .001$) from each other (.23 for control market vs. 1.5 for intervention market non-CPOLs vs. 11.2 for intervention market CPOLs).

Based on the Exit survey, a MANOVA (six variables × three conditions) showed that there were significant differences across the three conditions (CPOLs in intervention markets, non-CPOLs in intervention markets, and control markets) for (a) mean number of other market people talked to you about each of the five intervention messages (*People Messages Intervention Exit)* (partial $\eta^2 = .34$), (b) the mean number of times of other market people talked to you about each of those messages (*People Messages Intervention Times Exit*) (partial $\eta^2 = .16$), (c) the percent of people providing accurate HIV transmission answers (*HIV Correct Exit*) (partial $\eta^2 = .28$), (d) the percent indicating market CPOLs were a source of STD/HIV information (*Information Source CPOLS Exit*) (partial $\eta^2 = .58$), and (e) the percent correctly identifying the two STD/HIV spokespersons (*Media Correct Exit*) (partial $\eta^2 = .09$) (overall Wilks = .32, partial $\eta^2 = .44$). There was no difference in (e) the mean

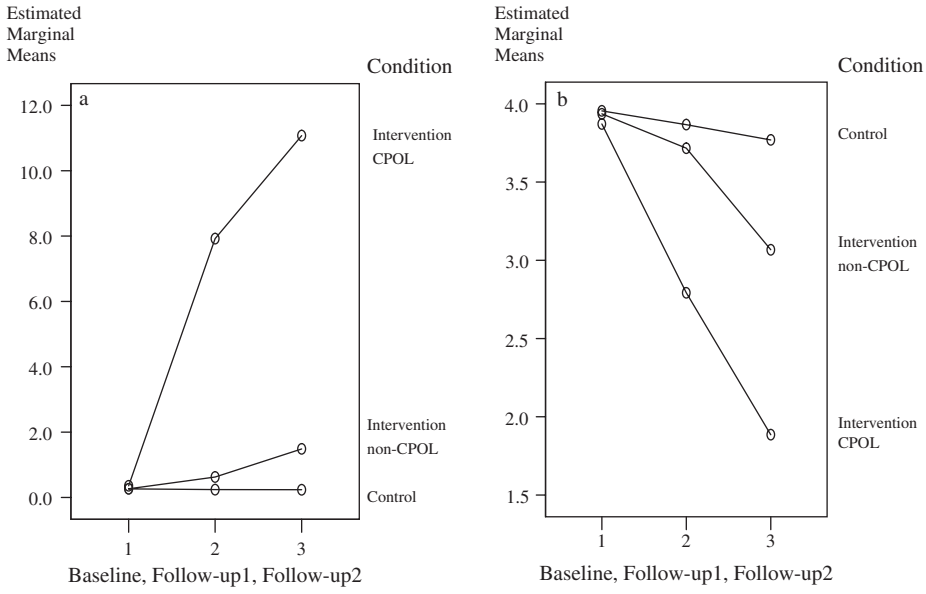

Figure 1 Repeated measures ANOVA of messages, and stigmatizing attitudes, by condition: (a) messages over time by condition and (b) stigmatizing attitudes over time by condition.

of considering STD/HIV as serious issues in one's community, however (*HIVSTD Serious Exit*).

The post-hoc differences in these means among the three conditions were significant (Bonferroni-corrected, $p < .001$) for all the measures except STD/HIV as serious issues. Across the differences, the means for the intervention market CPOLs were higher than those for the intervention market non-CPOLs, and the means for the non-CPOLs were higher than for the control condition respondents.

Comparing number of people communicating project messages over time

A repeated measures ANOVA showed an overall significant effect for both number of people communicating the messages (*People Messages Baseline*, *People Messages T2*, *People Messages T3*) and condition (partial $\eta^2 = .34$ for an increase in messages, .21 for the messages by condition effect, and .34 for the between-subjects effect of condition). The simple linear contrasts show nearly three times more explained variance by messages at T3 compared to Baseline (partial $\eta^2 = .33$) than T2 compared to Baseline (partial $\eta^2 = .12$), and over two times more for the messages by condition effect across the two comparisons (partial $\eta^2 = .35$ for Baseline-T3 vs. .15 for Baseline-T2). So both the means and the variance explained indicate from a doubling to a tripling of messages, first among the intervention CPOLs and then among the intervention non-CPOLs.

Because the CPOLs are the conveyors of the intervention messages, and because we would not expect any increase in intervention mentions in the Control condition,

we would like to know if number of people one talked to about the messages increased over time just for the intervention non-CPOLs. A repeated measures ANOVA ($n = 1,145$) showed a significant increase over time (mean = .28 Baseline vs. .64 T2 vs. 1.5 T3) (Wilks = .85, partial $\eta^2 = .15$; within-subjects effects partial $\eta^2 = .10$). A simple linear contrast (hypothesizing equal increases between Baseline, T2 and T3) explains the data well (partial $\eta^2 = .15$). However, a power increase (a doubling of the increase between periods, with contrasts of $-.8$, $-.2$, and $+1$) does as well (partial $\eta^2 = .15$). Thus, it can be argued that as the CPOLs communicate the messages throughout their networks, more other non-CPOLs in the intervention markets become exposed and spread the messages even further.

Comparing project awareness

Another indicator of project implementation is general awareness of the project. This was measured by asking in the Exit survey whether one had seen the project logo in the past 24 months (*Logo Exit*). Only 1% in the control sites reported seeing the project logo, while 77% of intervention market non-CPOLs did and 99% of intervention market CPOLs did.

H1: Decline in stigmatizing attitudes across time, and CPOLs/non-CPOLs

Comparing across time

Did stigmatizing attitudes decline over time in the intervention conditions? Figure 1b provides results from a repeated measures ANOVA of the stigma scale, showing a substantial significant decrease in stigmatizing attitudes from baseline (*Stigma Baseline, Stigma T2, Stigma T3*) (partial $\eta^2 = .38$ overall, partial $\eta^2 = .13$ for the stigma by condition effect, and partial $\eta^2 = .14$ for the between-subject effect of condition; the overall Wilks' exact λ was .62 for time and .76 for stigma by condition. N for Control = 1,552; intervention market non-CPOLs = 1,143; intervention market CPOLs = 514), $F(12, 12225829) = 29.6$, $p < .001$. The simple linear contrast shows three times more explained variance at T3 than at T2 (partial $\eta^2 = .38$ vs. .13), and two times more for the stigma by condition effect (partial $\eta^2 = .23$ vs. .10).

Comparing across CPOLs and non-CPOLs

As part of the same baseline MANOVA reported above (RQ1a), there was no significant difference across the three conditions in *Stigma Baseline*, as would be expected. There were significant overall and pairwise differences across the three conditions in *Stigma T2* (partial $\eta^2 = .10$), and *Stigma T3* (partial $\eta^2 = .25$), as well as the *difference* between Stigma at baseline and at T3 (*Stigma Baseline-T3 Difference*) (partial $\eta^2 = .23$). Comparing across all three conditions, the means of the *difference* were .20 for control, .86 for intervention market non-CPOLs, and 1.98 for intervention market CPOLs, $F(2, 3701) = 525.9$, $p < .001$, with all three significantly different from each other.

The difference in mean Stigma for intervention market non-CPOLs between baseline and T2 was a decline of .18. Between T2 and T3 there was a decline of .63 (over three times more for the second time period). For intervention market CPOLs,

the values were 1.07 and .9 (about equal declines between T2 and T3). That is, the decline in Stigma was greatest for CPOLs in both comparison time periods, though the rate of decrease was much greater for the intervention market non-CPOLs.

H2: Influences on declines in stigmatizing attitudes across time

An additional repeated measures ANOVA with the stigma measure as the within-subjects dependent variable, and the three conditions as the between-subjects factor, was run using as covariances all the measures with significant effects in the separate MANOVAs (*N*: Control = 1540; intervention market non-CPOLs = 891; intervention market CPOLs = 510), $F(12, 12315000.6) = 31.0$, $p < .001$.

The over-time Stigma decline persisted, along with significant overall, within-subjects, and between-subjects effects of education, the number of other people talked to about the five messages at T2 (*People Messages T2)*, the number of other people talked to about the five messages at T3 (*People Messages T3)*, accurate STD/HIV transmission knowledge, CPOL as STD/HIV information source, and condition. (Being a CPOL source [*CPOL Exit*] is a nonsignificant direct between-subjects effect, because this measure is relevant only to the intervention market non-CPOLs condition.) The variance explained by these factors is generally very low, with partial η^2 ranging from .002 for the within-subjects effect of number of people providing intervention messages at Exit (but that includes the control condition) to .132 for the between-subjects effects of education.

Note that several indicators of the proposed underlying mechanism were significant: messages, CPOL as information source (*Information Source CPOLs Exit*), and, more indirectly, knowledge accuracy (*HIV Correct Exit*). Controlling for these influences, simple linear contrasts showed a nonsignificant difference between Stigma T2 vs. Stigma Baseline, but a significant difference between Stigma T3 vs. Stigma Baseline (with a low partial $\eta^2 = .015$). However, the contrasts of repeated-measures Stigma by Condition showed significant differences for both comparisons (with partial $\eta^2 = .035$ and .052, respectively).

Thus we find evidence of (weak) influence on the decline in stigmatizing attitudes by (a) both intervention conditions, (b) being a CPOL, and (c) some control variables.

Discussion

The effects of CPOL communication

The decline in stigmatizing attitudes, and the rise in communication about the intervention messages, in the intervention Chinese markets were at first moderate (after 12 months) and then substantial (after 24 months). These increasing changes support the notion of the effective initiating of messages by Community Popular Opinion Leaders (a two-step flow), and an increasing rate of market network interactions (at least for the intervention market non-CPOLs) following the CPOL initiation (a multistep flow with increasing rate).

Ideally, from a design and methodological perspectives, such projects would include at least ego-centered network data, such as, for each non-CPOL in the intervention markets, which CPOLs they had talked to, and, for each CPOL, which non-CPOLs they had talked to (in both cases, perhaps the three most frequent). Then, both particular two-step flows, and network interdependencies, could be accounted for. However, such data were not collected in this project. Rather, the measures used were the number of intervention topics and of times people communicated with CPOLs about those intervention topics (exposure to the general role of opinion leader), and did separate out CPOLs from non-CPOLs in the intervention condition.

Central components of the CPOL intervention helped explain the significant decline over 2 years in STD/HIV stigmatizing attitudes among vendors (both non-CPOLs and, more strongly, CPOLs) in markets in a Chinese urban center. Significant influences of talking with market people about the intervention messages at T2, getting HIV/STD information from the CPOLs as respected and knowledgeable communication sources, talking with other market members about the intervention messages, being in the intervention condition, and an interaction between the intervention condition and talking with market people about the intervention messages at T2, all support the project's theoretical foundations (see the prior sections) of the important role of opinion leaders in changing negative stigmatizing attitudes in this highly social and culturally bound context. One noteworthy result is that the number of people (especially CPOLs) one talked with about the intervention messages—not the total number of messages—was the primary communication influence. One interpretation is that the CPOL influence comes from presenting multiple representative and model sources—including other non-CPOLs—which would be more supportive of a social influence effect than of a simple educational/informational effect (see the note about normative influence in the section on Opinion Leaders).

Furthermore, the intervention effect was more powerful for CPOLs themselves than for non-CPOLs. Indeed, training the CPOLs, and having them communicate the messages, can be seen as a substantive intervention itself, with substantial effects on those particular participants. So there seems to be a direct effect on the CPOLs, a two-step effect on the non-CPOLs, and a multistep effect of increasing number of people communicating about the campaign messages over time, on reducing negative STD/HIV stigma.

The larger campaign picture

As discussed earlier, these results are presented as a process evaluation of the CPOL communication component in one country from the larger NIMH project. These results show that the communication strategy of the program was successfully implemented, via the CPOL process, to disseminate intervention messages and reduce stigmatizing attitudes over time.

Many of the referenced studies from the larger project speak to the results of the extensive NIMH project, which, however, did *not* show much significant difference in overall decline in risky sexual behaviors or prevalence between the

control and treatment sites. For example, the log-odds ratio of having unprotected sex acts outside of marriage in past 3 months decreased significantly for both control (.82) *and* intervention sites (.66) (which still shows a greater, but not statistically significant, overall decrease for intervention sites); in intervention sites, the estimated odds for CPOLs at 24 months having unprotected sex was .55, compared to .69 for non-CPOLs . There was also an equal decrease in new STDs (estimated odds .49 and .50 compared to baseline) for both conditions, although the log-odds of decrease in new STDs in the intervention condition over the 2 years was greater for CPOLs (.44) than for non-CPOLs (.52) (Rotheram-Borus et al., 2011).

The various project publications (listed in the Broader Project section) provide four explanations for the combination of an overall improvement but no significant cross-condition effects in reported risky sexual behavior and biological indicators. First, China had increased its response to and coverage of HIV prevention through newspapers and mass media during this time (Li, Wu et al., 2009), so that all respondents had been influenced by this broad coverage. Second, for this and other reasons, there was also a declining secular trend in risky sexual behaviors in China from at least as early as 2007 to 2009, including light to noticeable increases in sex workers using condoms, HIV testing, drug users applying sterile injection equipment, pregnant women being screened for HIV, and people receiving antiretroviral treatment (UNAIDS, 2010). As with the media coverage, this effect may have been large enough to swamp any specific effect of this intervention, thus making any differences undetectable. Third, for ethical reasons, the campaign provided the considerable testing, diagnosis, and counseling; free educational materials and condoms; training for local pharmacists; and community activities to all who participated, but in the process made it impossible to find significant differences across the conditions in most measures. This represented a massive and successful intervention itself—one which the project team noted is unsustainable, which raises its own ethical questions (NIMH, 2010). Fourth, there are many other design factors and validity threats associated with the duration and biological nature of such projects, such as attention by local, regional, and national media; naturally occurring disease remission; and multiple conditions required for strict comparisons (such as low migration).

However, the intervention conditions *did* differ from the control condition in the project message communication by CPOLs and for non-CPOLs over time. And, as reported here, this particular campaign process aspect *was* associated with declines in stigmatizing attitudes. This study did not make any predictions about, nor test for, any of the behavioral changes analyzed in some of the other project studies listed above.

Alternative causal relations

Nonetheless, it may be that while reducing STD/HIV stigma is critical to changing behaviors such as discussing and changing risky sexual behavior, discriminating against those having or associating with people having STD/HIV, and seeking

and obtaining diagnosis and treatment, their cumulative influence is likely to take considerable time, if at all, to change behavior and related health status.

AIDS-related stigma is, of course, a much more complex social phenomenon than just the indicators in the individual-level scales used here. It is embedded in a deeper causal and more socialized relation: complex and powerful discrimination and access problems rooted in poverty, sexism, racism, class, dominance, and other inequalities (Abadia-Barrero & Castro, 2009; Bond, 2006; Castro & Farmer, 2005, who term this *structural violence*). Thus, attempts to reduce stigma that focus primarily on perceptions and attitudes are insufficient. For example, improved HIV care, especially when the positive outcomes are perceivable by community members (see Table 1, p. 57), can reduce stigma, and thus barriers to obtaining subsequent services, as well as broader social interest in and support for such care and services—a "virtuous social cycle" (Castro & Farmer, 2005, p. 56). Genberg et al. (2008) also conclude that HIV/AIDS testing, discussion, education, and access to antiretroviruses (ARVs) should reduce stigma.

In this study, however, equal treatment *was* provided, for free, to both the control and intervention markets; stigma levels did *not* change among the participants in the control markets within the 2-year time frame (see also Li et al., 2010); and stigma levels *did* decrease in the intervention markets, especially among the CPOLs themselves.[1] Thus, this study supports the general role of opinion leaders, the specific implementation of community popular opinion leaders via their communicating project messages in reducing stigmatizing attitudes, and the implied increasing rate and influence of such message communication throughout the communities over time.

Notes

1 An additional analysis also speaks to this issue of alternative causality. The Exit survey did ask five questions about the extent to which several sexual norms were a sign of high social status, first for the individual's opinion, and then the individual's opinion of what other people in their market thought (perceived social norms): (a) Asking for "girls" in an entertainment establishment; for men, (b) having a "second wife" or (c) having multiple sex partners; and for women, (d) having a "second husband" or (e) having multiple sex partners. For comparing means across each of the two sets of five questions, a Bonferroni correction was used, with alpha at .01. For all measures, the means were slightly above the mid-point between "neutral" and "disagree" (around 3.6). Although CPOLs reported slightly more disagreement that these were signs of high status, and in their perceptions of what their market people thought, the only significant difference (one-way ANOVAs) was that CPOLs disagreed slightly more that women having multiple sex partners is a sign of high status. However, for all five measures, respondents' personal opinion disagreed slightly more than did their perception of their market norms (pairwise t-tests, all $p < .001$) (about .1 lower on the 1–5 scale). So, though we do not have comparisons with baseline individual and perceived social norms, we do not find much difference in these across the conditions at Exit, implying no effect of the CPOL

communication on these particular social norms (at least within this time frame), indicating that such norms are more enduring and difficult to change than, and possibly not much attitudinally linked to, stigmatizing attitudes.

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