Improving Outcomes for Men Along the HIV Treatment Continuum in Côte d'Ivoire

Summary of the Engaging Men Brothers for Life Program Evaluation

September 2018

Contact:
Health Communication Capacity Collaborative
Johns Hopkins Center for Communication Programs
111 Market Place, Suite 310
Baltimore, MD 21202 USA
Telephone: +1-410-659-6300
Fax: +1-410-659-6266
www.healthcommcapacity.org

Suggested Citation:
Health Communication Capacity Collaborative. (2018). *Improving Outcomes for Men Along the HIV Treatment Continuum in Côte d'Ivoire: Summary of the Engaging Men Brothers for Life Program Evaluation*. Baltimore: Johns Hopkins Center for Communication Programs.

ACKNOWLEDGMENTS

Danielle Naugle, Natalie Tibbels, Zoé Hendrickson, Lynn Van Lith, Abdul Dosso, and Chris Hoffman (Principal Investigator) wrote this report. First and foremost, the authors are grateful for the partnership of the Ivorian men and peer navigators who allowed us to follow their journey through the Brothers for Life program. We extend our gratitude to the entire data collection team. The authors also extend their appreciation to Kim Ahanda, Marguerite Thiam Nianguoin, and Willibrord Shasha from the United States Agency for International Development (USAID) for their input and guidance.

This report was made possible by the support of the American People through USAID. The Health Communication Capacity Collaborative (HC3) is supported by USAID's Office of Population and Reproductive Health, Bureau for Global Health, under Cooperative Agreement #AID-OAA-A-12-00058, and is based at the Johns Hopkins Center for Communication Programs. The information provided in this report is not official U.S. Government information and does not necessarily represent the views or positions of USAID, the United States Government, or The Johns Hopkins University.

CONTENTS

BACKGROUND

A significant number of men do not seek or have access to HIV testing services (HTS) or treatment in sub-Saharan Africa. Several studies have shown that women have higher rates of testing, more engagement in pre-antiretroviral therapy (ART) care, earlier treatment initiation, and are more likely to stay on treatment than men.[1] [2] [3] [4] [5] [6] Men continue to access care at later stages of HIV infection.[7] A global review based on 36 studies found that being a heterosexual male was a consistent risk factor for presenting with low CD4 counts, resulting in worse outcomes for men once enrolled in treatment.[8] Additional evidence demonstrates that once men initiate ART, they often have lower retention rates and lower treatment adherence compared to women.[9]

Numerous barriers prevent men from seeking services along the treatment continuum. Gender norms are important determinants of decisions to undergo HTS and subsequent progression through the HIV care pathway.[10] Men avoid health facilities due to the belief that going to them displays weakness, causes embarrassment, and compromises their leadership position—all potentially degrading internal perceptions of masculinity. Social norms regarding care-seeking and disclosure of HIV status present significant barriers to access and adherence for men.[11] A formative study conducted by the Johns Hopkins Center for Communication Programs (CCP) in Côte d'Ivoire found fear of HTS is closely linked to partner disclosure of HIV status, which is considered synonymous to rejection, marginalization, or even a virtual death sentence.[12]

According to the latest Côte d'Ivoire Demographic and Health Survey (DHS) data (2011–2012), 7.8% of new HIV infections occurred among men over the age of 35, and this number has been increasing.[13] The majority of these men do not believe they are at risk, are unaware of their HIV status (60%), and engage in unsafe sexual practices.

As Test and Start policies expand with the change in World Health Organization (WHO) guidance, more men who test positive while asymptomatic will be encouraged to initiate treatment. In several studies, men demonstrate worse engagement in the care continuum if they are asymptomatic or if they doubt disease severity.[14] [15] [16] The additional challenges of reaching men who may not be immediately ready to start treatment are likely to persist and may be further amplified.

OBJECTIVE

The overall objective of the activity is to engage high-risk men more effectively in the treatment continuum, beginning with HIV prevention and testing, and continuing through treatment initiation and adherence outcomes. The process of moving from an initial HIV diagnosis to accepting one's result, preparing for disclosure, finding familial or community support, initiating and maintaining treatment adherence, and ultimately obtaining viral suppression is a complex process and one that is not linear for many people. Given that identifying high-risk men and

encouraging them to test for HIV has been a challenge in Côte d'Ivoire, the 5-year global Health Communication Capacity Collaborative (HC3) project used the Brothers for Life© (BFL) platform (described below) to address this gap and other critical barriers identified through rigorous research.

ACTIVITY DESCRIPTION

Brothers for Life (BFL) is a USAID-sponsored program designed to increase engagement in the HIV care continuum for men in Côte d'Ivoire. BFL Côte d'Ivoire is being implemented by the JHU Center for Communication Programs (CCP)–Côte d'Ivoire Office in partnership with local service delivery non-governmental organizations (NGOs). The primary audience for BFL was men who engage in HIV risk behaviors, aged 25 years and above, married or unmarried, in both urban and peri-urban areas. The program aims to support men as they progress through the HIV treatment continuum, from HIV testing and entry-into-care, through antiretroviral therapy (ART) initiation and retention. The program is comprised of a series of five facilitated community dialogues with groups of men. Discussion guides cover topics such as family budgets, sexual and reproductive health, men as sex partners, men's roles in families and society, and HIV/AIDS. BFL was implemented in three sites: Yopougon, Bouaké, and San Pédro. These areas correspond with PEPFAR-designated "scale-up" districts, or priority areas, where PEPFAR is intensifying evidence-based approaches for case identification of people living with HIV.

The BFL intervention

- Five facilitated and interactive sessions on topics of interest to men, including HIV
- Each session had 20-25 men
- HIV testing services offered on-site
- Men testing positive were offered support from a peer navigator to link to care

HIV testing was offered on-site during the final BFL session when possible. In cases where testing was not possible on the day of the fifth session, clients were invited to a follow-up session for testing or were referred to a nearby testing center.

After men participated in BFL sessions and were tested for HIV, those men diagnosed with HIV were connected with peer navigators (PNs). PNs are men who have been hired by the program to provide support to newly-diagnosed men. The PNs are trained, using a strengths-based counseling approach, to help men identify their personal strengths and previous victories that demonstrate their ability to accept their diagnosis, link to care, start treatment, and overcome barriers to retention (such as side effects). PNs were given men's contact information to reach out and organize in-person meetings, at a location of the man's choosing where they felt comfortable to discuss their HIV status and treatment options. The role of the peer navigator was to continue the work begun in the BFL workshops to support men in seeking treatment as necessary. PNs were trained to aim for at least two contacts a week with their clients for the first 3 months and at least one contact a month for months 4-6.

Before adapting the Brothers for Life curriculum to include a module on HIV treatment, the team conducted qualitative formative research to better understand how male clients 1) decide

to get tested; 2) enroll in treatment if positive; 3) understand their HIV diagnosis (including the importance of having an undetectable viral load); 4) stay motivated to adhere to treatment; and 5) address barriers that hinder adherence. This research also helped identify factors that may encourage a successful treatment journey within the context of existing gender norms.[17] Based on those findings, HC3 further refined the most relevant messages and approaches specific to men's needs throughout the intervention.

Building on experiences in other settings as well as the formative research, BFL actively promoted messages focused on understanding one's risk, the benefits of testing, immediate engagement in treatment, and the importance of viral load testing. BFL aimed to reframe service-seeking in an empowering way, building on the male client's strengths without blame, shame, or fear.

The intervention included the following components:

- The program expanded the BFL curriculum to include additional information about Test and Start, gender issues, and additional information on the benefits of treatment leading to viral suppression. It also added or adapted content related to financial literacy and other men's health and wellness topics from the earlier BFL curriculum. The curriculum included a total of five modules.
- Recruitment was done in a variety of ways, primarily from recommendations of peers from existing BFL groups and recommendations from community leaders or chiefs. Recruitment efforts also involved PMTCT index case tracing; TB case tracing; male-only community structures, including grin networks (community-based male social networks); professional networks of both formal and informal laborers such as transporter unions; private sector companies (industry, factories etc.); and private health facilities.
- HC3 NGO partners led BFL activities through workshops consisting of small group discussions with about 20–25 men using a facilitation process to build cohesion within the groups and provide a safe space to discuss difficult issues. HIV testing was provided on-site during the fifth and final BFL session by HTS partners whenever possible, with referrals for testing given otherwise. Each workshop consisted of five sessions that were held over the course of 1–2 weeks. Each BFL group determined the schedule (days, times, and number of sessions per week) of the workshops.
- Video testimonials of men living with HIV (MLHIV) were shared during the BFL sessions to ensure men heard the voices of other men who have tested, are living with HIV, and are managing their treatment journey well. MLHIV shared their stories in the videos and modeled the key behaviors of seeking testing, initiating treatment, and adhering to treatment.
- Print materials were used in the BFL workshops to reinforce messages about Test and Start as well as men's health and wellness.
- Membership cards and referral cards were given out to recognize men who participated in BFL and remind them of their commitment to test if they did not test on-site at the final BFL session.

- Interactive SMS text messages were sent for part of the intervention period (June through December 2017) to encourage men who did not test on-site to seek testing. The strategy was discontinued due to low response rates.
- Peer navigators were assigned to individual men who tested positive to provide counseling and ongoing support to maximize the likelihood of them starting treatment as soon as possible. Peer navigators built treatment literacy with messages focused on viral load testing, the importance of adherence, preparing for clinic appointments, developing questions to ask providers, as well as tips on how best to navigate the health system. Peer navigators used a strengths-based counseling approach to drill down into what would motivate each client to initiate and adhere to treatment. The navigators also used counseling guides to administer the strengths-based counseling in a systematic way and to encourage clients to share their status with spouses and partners so that they might also be tested for HIV.

Two critical program adaptations took place in response to challenges faced during implementation—one related to identifying at-risk men and one related to testing rates. In order to improve the yield (proportion of eligible HTS recipients who are diagnosed HIV positive), in August 2017 the recruitment strategy shifted to include the use of a risk-assessment tool to better focus recruitment for BFL on the most at-risk men. The risk assessment contained questions related to prior testing experience, sexual history, and symptoms. The second adaptation also took place in August 2017 in response to low testing rates. Initially, BFL participants were counseled as a group and then, those interested in testing were invited to additional individual counseling and testing. A human-centered design activity conducted in July 2017 shifted the process to an individual-based counseling strategy (called "everyone to counseling"), giving each man the opportunity to ask questions of an HTS counselor in private before deciding whether or not to test.

PROGRAM EVALUATION

Evaluation of the modified BFL program implemented by HC3 involved assessing the effect of participation on HIV testing and treatment among previously undiagnosed HIV-positive men. Specific objectives included measuring relevant process indicators, implementation measures, client outcomes, behavioral determinants, and overall program effectiveness.

Methods

The BFL evaluation was conducted in each of the sites where BFL was implemented. The study design involved observational, quantitative, and qualitative components. The observational component consisted of quality and fidelity assessments of a random sample of 35 BFL workshops (all five sessions for selected workshops) to assess whether the BFL facilitators were faithfully delivering the BFL content.

The quantitative component consisted of three parts: the cohort, a clinic chart review for HIV-positive men, and a pretest/posttest. All of the men who enrolled in BFL workshops in

Yopougon, Bouaké, and San Pédro between April 2017 and January 2018 were informed about the study and invited to participate. The inclusion criteria for the cohort were the same as the inclusion criteria for the intervention: men age 25 and older. Demographic data were collected from men who consented to participate in the study. In addition, data were collected on whether or not each man chose to test for HIV as part of the BFL workshop and his test results (as reported by the HTS NGO partner). For men who tested HIV positive, a clinic chart review was conducted to obtain data on linkage to care (date of visit), treatment initiation (date of initiation, CD4 count at ART initiation), and retention in treatment at 6 months (defined as a patient who is recorded as adherent to the ART regimen at the 6-month clinic visit). All of the data were linked to a unique personal identification code.

Among the men who agreed to participate in the cohort, 400 were randomly selected to participate in a pretest/posttest questionnaire.[*] The goal of the pretest/posttest was to assess short-term change in knowledge, beliefs, and reported behavior related to BFL content. The pretest/posttest consisted of approximately 100 questions that were administered individually by trained data collectors immediately prior to the beginning of the BFL workshop (usually at a BFL information session). The same men were asked to respond to an identical set of questions within 2 weeks after completing the fifth session of the BFL workshop (between 3 and 7 weeks after the pretest).

The qualitative component consisted of semi-structured interviews with BFL participants and peer navigators. Men were randomly selected from among BFL participants who attended workshops in the eighth month of implementation (November 2017). The sample included:

- men who chose not to test for HIV during the BFL workshops
- men who tested HIV negative
- men who tested HIV positive and did not initiate treatment
- men who tested HIV positive and initiated treatment

In addition, the study included semi-structured interviews with all of the peer navigators who supported BFL participants who tested positive for HIV. It also included examination of reports from the implementing NGOs that reflect peer navigator interactions with MLHIV.

Findings

[*] To select the 400 pretest/posttest participants, BFL workshops were randomly selected for each implementing NGO based on the total number of workshops they were contracted to complete within a timeframe of 6 months (April through September, 2017). The workshops were randomly selected by month so as to be spread evenly across the 6-month period. From each of the randomly selected workshops, five participants were randomly selected to participate in the pretest/posttest.

Quantitative Results

In this section we describe the cohort of men enrolled in the evaluation and the outcomes of their testing and treatment. Then we present process measures to evaluate the role of the intervention in achieving the outcomes.

Main Results

Overall, 7,410 men participated in the BFL workshops between April 2017 and January 2018. Ninety-five percent of these men participated in all five sessions of the workshops.

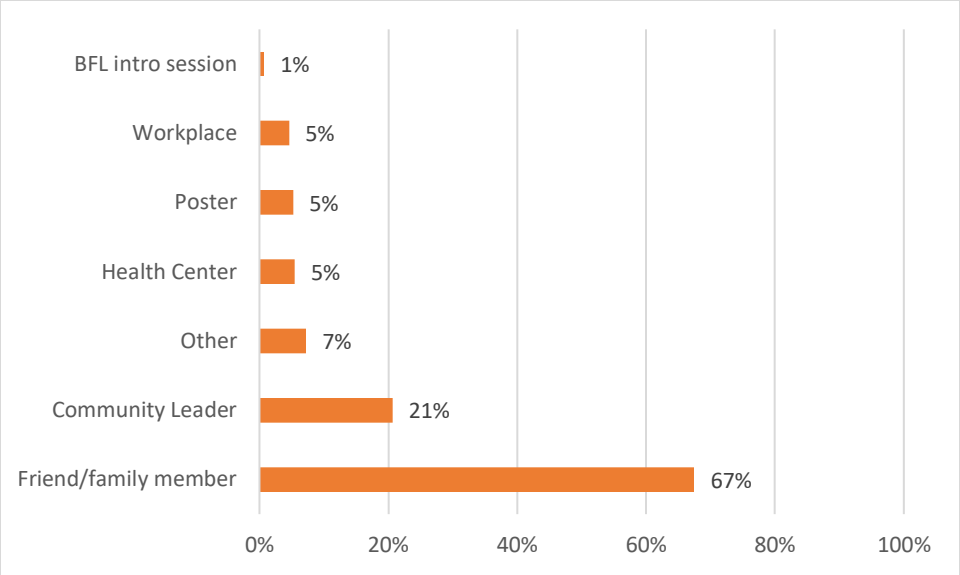
Of the 7,410 men who participated in the BFL workshops, 7,187 (97%) agreed to participate in the evaluation cohort. Table 1 summarizes the number of participants by site and by implementing NGO. Each implementing NGO had a pre-established target number of men to reach with the BFL program.

Table 1. Cohort Participants by Site and by NGO

SITE	Participants by Site	NGO	Participants by NGO
Yopougon	2,384	Oasis	946
		Amepouh	1,438
Bouaké	2,604	Bouaké Éveil	1,243
		Délégation Fondation Akwaba	1,361
San Pédro	2,199	R.E.E.L. Santé	1,287
		Élan d'Amour	912
TOTAL	**7,187**	**TOTAL**	**7,187**

When asked how they heard about the BFL program, the majority of participants (67.5%) responded they heard about BFL from friends and family members, while 20.7% reported hearing about it from community leaders (see Figure 1).

Figure 1. Self-reported sources of information about BFL[†]



†Note: Multiple responses were possible.

The median age was 32 years with an interquartile range of 28 through 40. Most of the men were in a relationship (66.9%) and had children (63.1%). Most of the men identified themselves as Christians (55.1%), followed by Muslims (25.9%). A total of 19.7% of the men had no formal education, and 82.6% engaged in some income-generating activity, most commonly agriculture (31.9%) or the informal sector (29.2%). Demographic characteristics of the cohort are summarized in Annex A.

HIV Testing and Treatment

Of the 7,187 men who consented to participate in the cohort, 5,835 (81.2%) chose to test for HIV as part of the BFL program. There were no significant differences in uptake of testing based on age, marital status, children, religion, education, engaging or not in an income generating activity, or profession.

In 89 (26.5%) of the 336 BFL workshops conducted during the intervention period, HIV testing was not offered at the fifth session. In these cases, on-site testing was either scheduled for a later date or participants were referred to a local HTS center. The primary reason that HIV testing was not always offered at the fifth BFL session was due to stock-outs at the testing NGO or the health district. Additional reasons include scheduling conflicts, miscommunication, and transportation problems (lack of funds for transportation of the HIV testing team, or roads made impassable due to weather). However, whether or not a man got tested was not associated significantly with whether or not testing was offered at the fifth session.

Of the 5,835 men who tested, 135 (2.3%) tested HIV positive compared to a national prevalence rate of 1.9% among men aged 15–49. Between April and July 2017, 1.3% of the men who tested were HIV positive. However, after the program began using the risk assessment tool

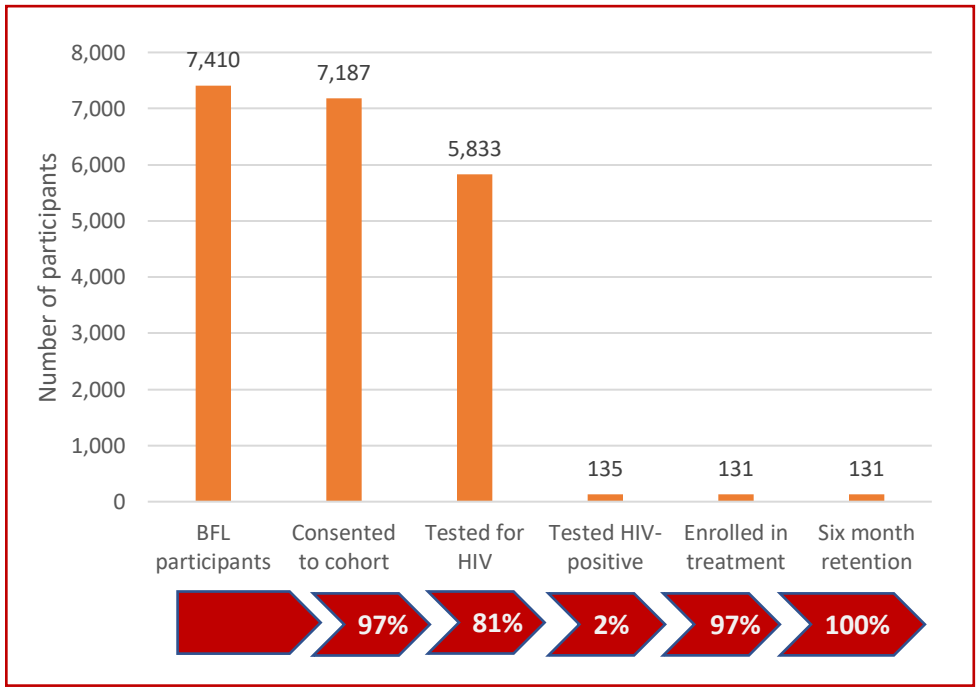
to better focus recruitment for BFL on the most at-risk men, the percent of men testing HIV positive in the program increased to 3.6% (August–December 2017).

Among men who tested for HIV, bivariate logistic regressions suggest that age, parenthood status, level of education, and type of profession were significantly associated with HIV testing outcome, in that older men, men with children, men with no formal education, and men who engage in driving or transportation as their profession were significantly more likely to test HIV positive than men in the group without these statuses. In multivariate modeling, only age and education remain significant predictors in that older men were more likely to test HIV positive than younger men and those with a primary school education were less likely to test HIV positive than men with no formal education. Men with more than primary school education did not differ significantly in HIV testing outcomes than men with no formal education.

Of the 135 men who tested positive, only four (3%) did not initiate treatment within the 6 months of testing. Ninety-three percent of the 131 men who initiated treatment did so within 4 days after testing HIV positive. The remaining nine men had initiated treatment by a maximum of 66 days after testing. The men's CD4 count was usually tested the same day they initiated treatment (57.7%) per the standard protocol at the time of the study, or within 3 days (95.3%). At the time of the first CD4 count, 38% had a CD4 count of $\leq$ 500 cells/mm^3 and 15% had a CD4 count of $\leq$ 200 cells/mm^3 (range: 22 cells/mm^3 – 1,475 cells/mm^3; mean: 706 cells/mm^3).

According to clinic records, after 6 months, 100% of the 131 men who initiated treatment were still adherent to their treatment regimen at their most recent appointment. Figure 2 summarizes the BFL HIV testing and treatment cascade.

Figure 2. BFL HIV testing and treatment cascade



*Each percentage is calculated as the proportion of men in the previous column who completed the next step in the HIV testing and treatment cascade.

Supporting Results

This section provides the results of process indicators to explore the role of the BFL intervention in achieving the reported outcomes.

Observational Component: Quality and Fidelity Assessments

Quality and fidelity observations were conducted on a random sample of 35 BFL workshops. For each group, all five sessions were observed for a total of 175 observations: 65 observations in Yopougon, 60 in Bouaké and 50 in San Pédro (Table 2). The quality and fidelity observations were conducted by data collectors external to the implementation of the BFL workshops and were trained on how to conduct the assessments.

The average number of participants in the observed BFL workshops was 21. Ninety-five percent of the observed sessions had two BFL facilitators, a recommendation by CCP to the prevention NGOs.

Table 2. Summary of Quality and fFidelity Observations by NGO and Site

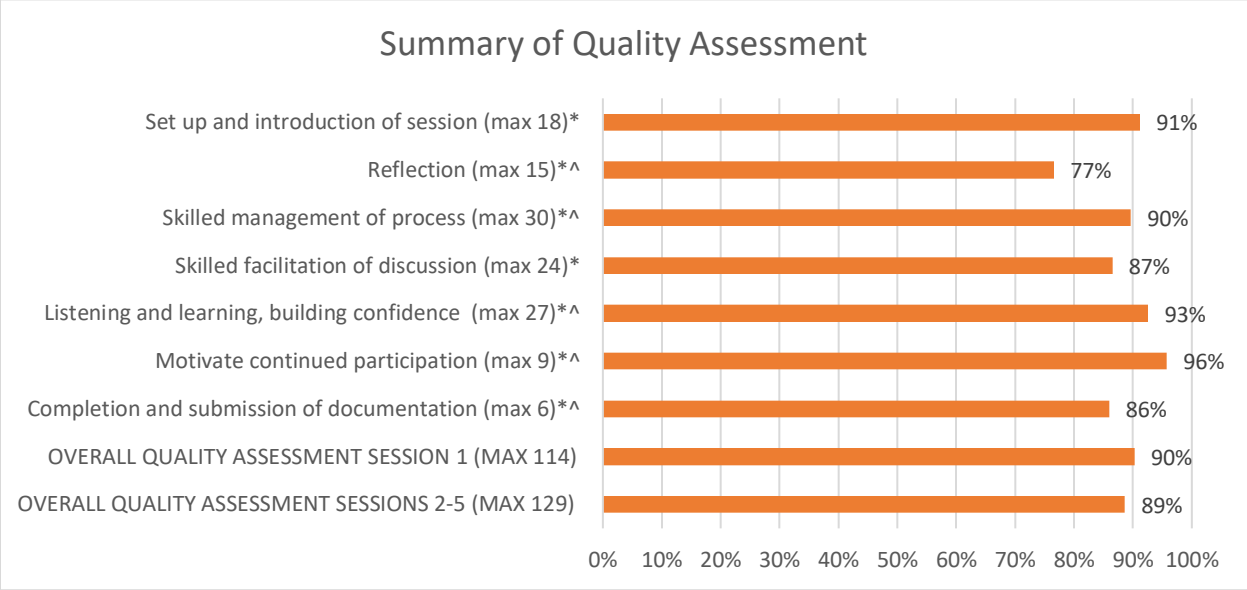
Site	NGO	BFL Groups Observed	Number of sessions observed for quality/fidelity	
Yopougon	Oasis	5	25	65
	Amepouh	8	40	
Bouaké	Bouaké Éveil	6	30	60
	Délégation Fondation Akwaba	6	30	
San Pédro	R.E.E.L.-Santé	5	25	50
	Élan d'Amour	5	25	
			Total	175

Quality Assessment

The quality assessment was completed for each observed BFL session by the hired research firm and included seven categories: 1) Set up and introduction of session; 2) Reflection; 3) Skilled management of process; 4) Skilled facilitation of discussion; 5) Using listening and learning, building confidence, and giving support skills; 6) Motivating continued participation; and 7) Completion and submission of documentation. Each category had between two and ten sub-items that were scored on a scale of 1–3 based on the data collector's evaluation of whether BFL facilitators satisfactorily completed each item: 1 – not at all satisfactory, 2 – somewhat satisfactory, 3 – completely satisfactory. Three levels were used to simplify assessment and to reduce inter-rater variability. No inter-rater reliability testing was done.

The quality assessment for each of the seven categories is summarized in Figure 3. The scores (percent of total possible points) ranged from a low of 76.6% for Reflection (review and reflection of prior BFL sessions) to a high of 95.8% for the three items that make up the category "Motivate continued participation." The overall quality assessment for Session 1 was 90.3% and for Sessions 2 through 5 it was 88.6%.[*]

Figure 3. Summary of quality assessment



***Significant differences between NGOs**
^Significant association between number of participants and average score

Additional analyses suggest that the average scores for each category varied significantly by NGO and, in some cases, by the number of participants present at the session, but not by the BFL session (1, 2, 3, 4, or 5).

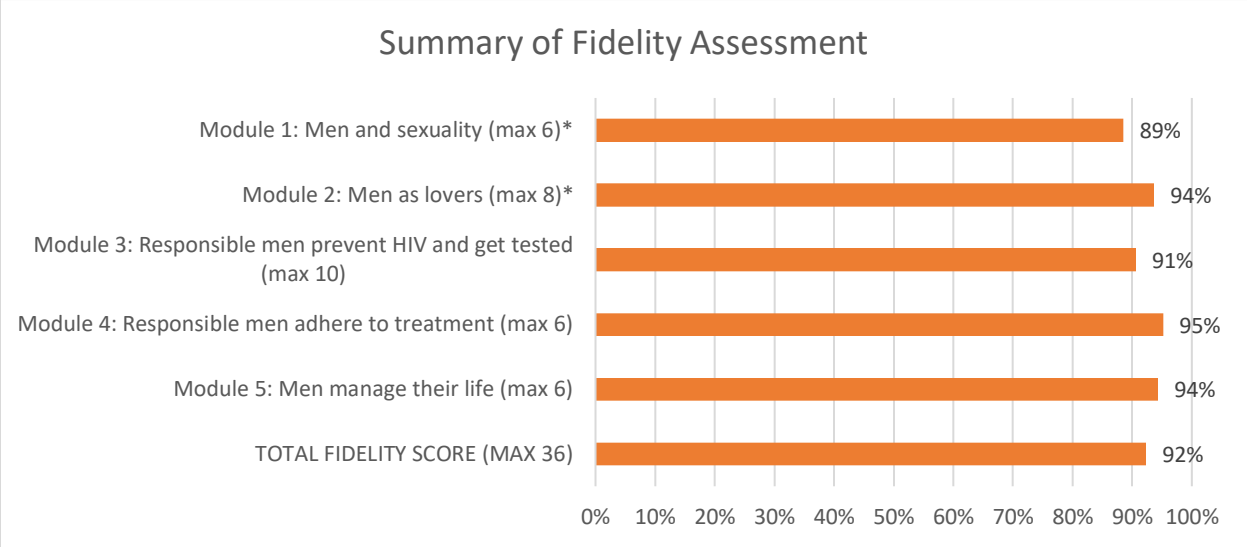
Fidelity Assessment

The fidelity assessment was completed for each observed session and reflected whether or not the facilitators actually discussed each of the topics covered in the BFL Facilitators' Manual for that particular module. For example, for the first session, called Module 1: Men and Sexuality, one point was awarded for discussing each of the following topics: 1) the difference between sex and sexuality, 2) the dimensions of sexuality, 3) gender roles, 4) the intersections between gender roles and health, 5) genital organs, and 6) family planning.

Figure 4 summarizes the findings from the fidelity assessment. The scores (percent of total possible points) ranged from a low of 88.5% for Module 1: Men and Sexuality to a high of 95.2% for Module 4: Responsible Men Adhere to Treatment.

[*] Session 1 and sessions 2 through 5 are evaluated separately because sessions 2–5 included an additional module for reflection on the prior sessions, making 129 total possible points for each of those sessions, and 114 being the total possible points for session 1.

Figure 4. Summary of fidelity assessment



***Significant differences between NGOs**

Scores on the fidelity assessment for Modules 1 and 2 varied significantly by NGO, but overall there were no significant differences by number of participants, which ranged from 2 to 25, with an average of 21 participants per observed session.

Pretest/Posttest

Of the 7,185 men who agreed to participate in the cohort, 400 were asked to participate in a pretest and a posttest survey to assess for changes in knowledge and attitudes. The pretest was administered one-on-one by trained data collectors from the contracted research firm immediately before the man participated in the BFL workshop and the posttest was administered within 2 weeks of completion of the BFL workshop.

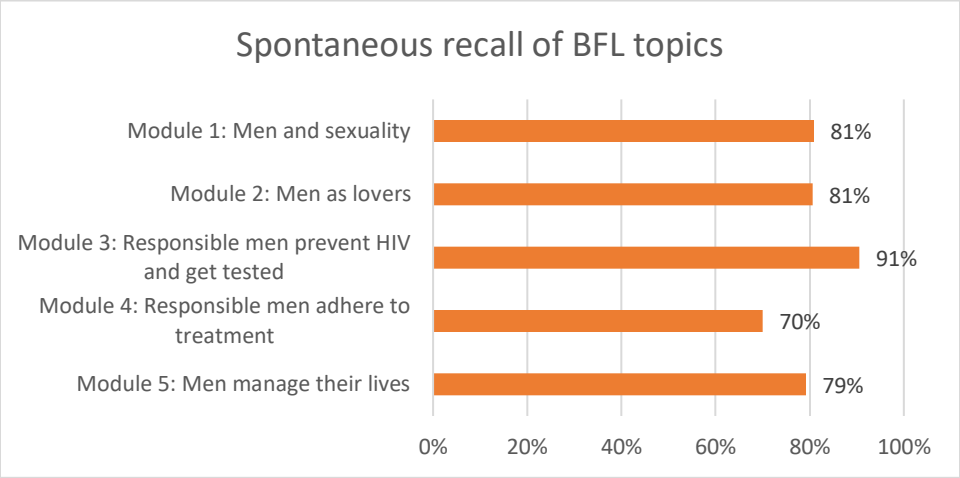
The survey consisted of approximately 100 questions on HIV-related knowledge, gender norm and gender equity beliefs, self-efficacy beliefs, risk perception, couple's communication, stigma, intentions, and behavior. The knowledge items were evaluated based on a true/false response set; the belief and intention items were evaluated on a Likert scale (beliefs: 1 – strongly disagree, 2 – somewhat disagree, 3 – somewhat agree, 4 – strongly agree; intentions: 1 – very unlikely, 2 – somewhat unlikely, 3 – somewhat likely, 4 – very likely), and the behaviors were evaluated as simply yes or no.

Four hundred men participated in both the pretest and the posttest. The participants were equally divided among the three sites. They were primarily between the ages of 25 and 34 (65.75%), had secondary school education (64.25%), were single (42%) or living together as a couple but not married (29.25%), and had children (57.75%). Over half were Christian (63.2%) and a fifth were Muslim (21.5%). Seventy-three percent engaged in some form of income-generating activity, primarily the informal sector (40.96%), followed by agriculture (15.02%),

and commerce (14.33%). Demographic characteristics of the pretest/posttest participants are summarized in Annex B.

At the time of the posttest, 84.4% of the men reported participating in all five BFL sessions. Spontaneous recall of topics corresponding to the five BFL modules was relatively high in the posttest, ranging between 70% and 90% (see Figure 5).

Figure 5. Summary of spontaneous recall of BFL topics



To explore changes in knowledge, beliefs, intentions, and behaviors between pretest and posttest, we conducted paired *t*-tests. The results for each individual item are reproduced in Annex C and summarized here.

Knowledge. Men improved significantly on knowledge items between the pretest and the posttest, from an average total number of correct true/false responses of 83.1% at the pretest to 86.7% at the posttest, out of 34 possible correct answers (see Table 3).

Table 3. Summary of Average Knowledge Scores at Pretest and Posttest

Categories of knowledge items	Percent correct at pretest	Percent correct at post-test	Two-tailed sig.
Modes of HIV transmission (9 items)	77.6%	80.9%	0.0000
Testing knowledge (6 items)	92%	94.2%	0.0024
Treatment literacy (11 items)	83.3%	86.8%	0.0000
Myths and misconceptions (7 items)	81.6%	86.9%	0.0000
All knowledge items (34 items)	83.1%	86.7%	0.0000

Beliefs. Between the pretest and posttest, men improved significantly on all of the categories of belief items except risk perception and treatment self-efficacy (see Table 4). This includes

general HIV beliefs, stigmatizing beliefs, prevention self-efficacy, testing self-efficacy, partner communication self-efficacy, beliefs about communication within a couple, gender equity beliefs, and gender norm beliefs. For example, HIV prevention self-efficacy, a sum of four belief items, increased significantly from an average of 15.17 at pretest to an average of 15.54 at posttest (out of 16 possible points).

Table 4. Summary of Average Belief Scores at Pretest and Posttest

Categories of belief items	Average at pretest	Average at posttest	Two-tailed sig.
HIV beliefs (6 items, scale of 6-24)	20.07	20.74	0.0001
Risk perception (7 items, scale of 7-28)	24.86	25.18	0.1379
Stigmatizing beliefs (5 items, scale of 5-20)	17.57	17.86	0.0471
Prevention self-efficacy (4 items, scale of 4-16)	15.17	15.54	0.0001
Testing self-efficacy (3 items, scale of 3-12)	11.34	11.60	0.0013
Treatment self-efficacy (2 items, scale of 2-8)	7.76	7.77	0.7496
Partner communication self-efficacy (5 items, scale of 5-20)	18.64	18.98	0.0054
Beliefs about communication within a couple (4 items, scale of 4-14)	14.85	15.09	0.0259
Gender equity beliefs (14 items, scale of 14-56)	47.68	48.39	0.0021
Gender norm beliefs (5 items, scale of 5-20)	13.87	13.49	0.0091

Intentions and Behaviors. Between pretest and posttest, most of the intentions measured did not change significantly (see Annex C); however, reported behavior did change significantly. At pretest, only 150 (37.50%) of the participants reported having gone to a health clinic for advice or consultation in the past 12 months, and only 138 (34.50%) reported having had an HIV test in the past 12 months. At posttest, 239 (59.75%) reported having gone to a health clinic in the past 12 months, and 278 (69.50%) reported having been tested for HIV in the past 12 months. Both changes were statistically significant. This suggests that even though the measures of treatment self-efficacy did not change significantly, acceptance and use of care facilities did improve.

Peer Navigator Component

All the men who tested HIV positive during the BFL workshops were connected with a peer navigator to support linkage to care and treatment initiation. A total of 75.6% of the HIV-positive men accepted peer navigator support for at least 1 month after being diagnosed HIV positive (see Table 5). Depending on the NGO, peer navigators were assigned between four and

10 men to support. Peer navigators were expected to engage in two contacts a week for the first 3 months after diagnosis and one contact a month for the following 3 months. However, many peer navigators continued to support their clients for the duration of the intervention (up to a maximum of 10 months). In addition, men could contact the PNs for additional support. The support provided by the PNs included help with treatment initiation and adherence, disclosing status to a partner or spouse, and reminders of clinic visits.

Of the 135 HIV-positive men, 109 (80.7%) reported disclosing their status to a partner or spouse (81), a friend (20), or someone else (8).

Notably, 29 out of the 33 HIV-positive men who did not accept peer navigator support still linked to care, compared to 102 of the 102 HIV-positive men who did accept peer navigator support.

Table 5. Summary of Peer Navigator Support

SITE	NGO (Number of Peer Navigators)	HIV+ men	On treatment	Accepted PN support*	Average number of visits per month
Yopougon	Oasis (4)	18	15	10	5
	Amepouh (5)	23	23	16	4
Bouaké	Bouaké Éveil (3)	21	20	17	2
	Délégation Fondation Akwaba (3)	24	24	20	2
San Pédro	R.E.E.L. Santé (3)	28	28	23	3
	Élan d'Amour (2)	21	21	16	4
	Total	**135**	**131**	**102**	
	Percentage		**97%**	**75.6%**	

*Accepted peer navigator support for at least 1 month

Qualitative Results

Trained qualitative researchers conducted in-depth interviews (IDIs) in person with men who chose not to test for HIV during the BFL workshops, men who tested HIV negative, men who tested HIV positive and did not initiate treatment, and men who tested HIV positive and initiated treatment. Table 6 summarizes the number of interviews that were conducted with each group of men. The number of IDIs conducted with HIV-positive men who did not initiate treatment is low (three instead of the 15 desired) because almost all (97%) of the men who tested HIV positive during the BFL workshops initiated treatment.

Table 6. Distribution of Participants in In-depth Interviews, by Group and Age

Group	25–34 years	35–49 years	50+ years	Total

Men who chose not to test for HIV during the BFL workshops	6	6	3	15
Men who tested HIV negative	6	6	3	15
Men who tested HIV positive and initiated treatment	6	6	3	15
Men who tested HIV positive and did not initiate treatment	2	1	–	3
Peer navigators		14		
Total number of people interviewed		62		

Quotations to support the qualitative findings are in Annex D.

1. *Perceptions and experiences in BFL*

Participants were uniformly positive about their experience in the BFL program, expressing that the program gave them new knowledge and positively influenced their attitudes and behaviors. They spoke of the program giving them courage. For some, it was simply the courage to take control of their lives in terms of their sexual behavior, finances, and life in the family. For many, however, the program gave them courage to get tested for HIV and to take action based on the test results. They appreciated the format, mentioning specifically the NGOs coming to their communities and incorporating dialogue and conversation rather than one-way teaching. Men felt a sense of completion and accomplishment after the program and were proud of their diploma and showed it off.

1.1 *Group experiences*

Men commonly defined the BFL program in terms of having unity and lifelong friendships with other men, supporting one another in addressing health concerns, and sharing information. There was a spectrum of social cohesion within groups. Men expressed a sense of closeness to other members of the group and to the facilitators, even after the program ended. Trust in the facilitators was strong regarding sharing health information, which men attributed to the training facilitators received (particularly around protecting confidentiality). Men tended to perceive the facilitators more as health providers than peers. Many men also said they could approach other group members for advice. Though men mentioned the relational side of the BFL program, they placed more emphasis on advice and counsel, that is, knowing people who could give advice and guidance about HIV or health in general. The social cohesion many men experienced allowed them to shift from hiding health issues, including HIV, to sharing them. A minority of MLHIV preferred secrecy about certain health problems, including their HIV status, with respect to their peers in the group. Those who expressed this preference said they were more likely to talk to health providers, who are expected to keep health information confidential. A minority reported benefiting only from the content without building relationships with other group members.

1.2 *Content of workshops*

Men remembered and summarized specific content related to each of the broad BFL curriculum topics. Men characterized the content as helping them take control of their lives, particularly in ways they previously felt little control over, such as their sexual behavior, finances, or knowing their HIV status. In a minority of cases, despite positive feelings toward the program in general, men were unable to remember details about the content without prompting.

Workshop activities that discussed men's power over women and modeled couple communication were some of the most memorable components of the BFL workshop for participants. Men emphasized their newfound consideration of power dynamics within the household, particularly between intimate partners, and described how they wanted to work on such dynamics in their relationships. Several participants cited the "Men as Lovers" section (particularly a role play about gender relationships in which an individual is forced to follow the orders of his boss) as their favorite session in the workshop, since it allowed them to understand firsthand and concretely the effects of limited agency on their ability to make decisions and act freely.

1.3 *New knowledge and key messages retained*

Much of the new knowledge retained from the BFL program was related to HIV:

- *Treatment.* Treatment literacy was a key theme for men, even more than other non-HIV-related topics. Key themes included:
    - Medication is for life
    - Treatment is free
    - With treatment, one can live normally
    - With treatment, one can have uninfected children
    - Viral load is related to treatment and viral suppression is a goal
    - Treatment regimen has improved (fewer pills to take now than before)
- *Modes of transmission.* Men described specific myths that the program corrected for them, such as the belief that mosquitoes can transmit HIV.

1.4 *Key attitudinal changes*

Men described several shifts in attitudes following participation in the BFL program:

- ***Couple communication****:* Men described a desire for more closeness and communication in their relationship with their primary partner or spouse. Other men talked about going home and discussing new topics with their wives, such as family planning or sex, or simply what they learned in the workshop.
- ***Views of people living with HIV*** **(PLHIV)**: Men expressed a strong shift from stigmatizing PLHIV as sexually promiscuous, unapproachable, and disrespected, to acknowledging the importance of supporting PLHIV. They repeated specific messages from the BFL curriculum in describing how they would counsel or support a friend who was diagnosed with HIV. Increased knowledge of the modes of transmission appeared to influence men's perceptions of PLHIV and the willingness to be supportive. Specifically, the testimonial video was cited by some men as a key experience for showing an MLHIV who was not afraid to share his status publicly.

- ***Perceived severity of HIV****:* Participants experienced a shift in their perceptions of HIV, from viewing it as a devastating diagnosis to something that can be faced. This shift included an increased conviction that an HIV diagnosis is not a death sentence and the knowledge that one can live a normal life on treatment.
- ***HIV testing****:* Men described changes with respect to their views on testing, describing a greater openness to testing and reduced fear, even among men who chose not to test during the BFL workshop.

1.5 *Key behavioral changes*

Men reported specific intentions and behavior changes related to the BFL content:

- ***Condom use****:* Men described using condoms more frequently as a result of the program, related both to knowing how to use them and feeling condom use is important.
- ***Limiting sex partnerships****:* Men described a shift in both attitudes and behaviors with respect to their ideal or actual number of sex partners. They expressed a desire to be faithful to one or two partners, often their wife and one other girlfriend. For some, the shift was attitudinal, meaning that the ideal or acceptable number of sex partners for a man declined. Men also described changing their behavior immediately after the program to reduce their number of partners.
- ***HIV testing****:* Some participants listed the BFL program as the reason they chose HIV testing. Other men who chose not to test during the BFL workshop felt that marriage was a milestone and intended to get tested before they were married. The men who did test during the program talked about how the act of testing was "liberating" for them. Though some men chose not to test during the BFL workshop because they had tested previously, others expressed an intention to retest. Nevertheless, social status and fear of being stigmatized if diagnosed positive continued to be a barrier to testing for some men.
- ***ART initiation and retention****:* Men who tested positive during the BFL workshop felt that their own treatment literacy improved because of the BFL curriculum and that the support from peer navigators facilitated their entry into treatment and their ability to remain in care. Men who did not specifically mention PN support still cited the BFL content as important to their desire and ability to initiate treatment.
- ***Individual advocacy****:* Participants in the program described advocating for others to get tested for HIV. Some men advocated for HIV testing within their families (particularly with partners), while others talked to neighbors about HIV testing. Beyond HIV testing specifically, men felt that the program gave them special knowledge to share with others and many spoke of taking on a new role as teachers or advisors in their families and neighborhoods.

In summary, participants felt that the BFL program improved their knowledge of HIV, had a positive influence on their attitudes toward PLHIV, and facilitated testing and treatment initiation.

2. Factors influencing male decision-making across the care continuum

2.1 *HIV testing*

Men who decided to test during the BFL workshop described the following specific factors that influenced their decision:

- **Treatment awareness**: Men described a conviction, as a result of the BFL program, that an early diagnosis allows one to start treatment, leading to physical benefits (remaining "en forme" or in shape/healthy) and long-term benefits (living a long life). In addition, the new knowledge that treatment was free and available to all appeared to make men more willing to face a possible HIV-positive diagnosis.
- **Lowered perceived severity:** The sense that HIV was similar or less severe than malaria or stroke (diseases that were familiar and not stigmatized) gave men courage to face an HIV-positive diagnosis.
- **Perceived risk:** This factor worked both to promote and hinder HIV testing. For some men who tested, BFL clarified modes of transmission and also raised the salience of HIV simply through the discussions and invitation to test, leading to increased willingness to test. In other cases, however, men reported that the information heightened perceived risk and led them to avoid testing.
- **Social support/pressure:** Though some men appeared not to be influenced by others' decisions to test, the participatory and social nature of the BFL workshop and on-site availability of testing was a factor for many. Influence ranged from simple awareness of whether others were testing or not, to social support (a participant and his friend encouraging one another and deciding to do it together), to strong social pressure from fellow group members to test.
- **Psychological factors**: Men talked about their willingness to test in terms of freedom and courage. They felt that knowing one's status offered a sense of freedom (regardless of the outcome). Several men felt that BFL gave them courage to test.
- **Symptoms:** Feeling sick was, in a minority of cases, a contributing factor in a man's willingness to get tested.

Men who did not get tested for HIV during the BFL workshop provided several types of reasons for not testing. For some, logistical issues interfered; for example, they did not attend the session where testing was offered. Some had already tested recently and were not convinced they needed to retest. More commonly, however, men were ambivalent toward testing. Some did not feel "prepared" that day and some described their decision not to test during the workshop as a lack of courage, at times due to heightened risk perception. Fear was the predominant barrier to testing. Fear was described in two interrelated ways: perceived risk and awareness of consequences. Men feared how their lives would change, especially changes caused by disclosing to their family and concerns about what would happen to them physically. Many men who opted not to test described an increased intention to test eventually, which they attributed to the BFL program. A minority of men delayed testing in order to test simultaneously with their wife or partner, to facilitate disclosure later if applicable.

2.2 *Treatment initiation*

Most of the men who tested HIV positive visited a health provider within several days of diagnosis and were willing to go alone (though some went with a family member or peer navigator). Delays were related to factors such as indecision about which hospital or clinic to attend, fear of side effects, or logistics of finding money for transportation. Peer navigators were reported as a supportive element of the BFL program.

Service side concerns
Men described generally positive experiences with providers when they arrived at the facility for treatment. Men interviewed explained that providers offered a warm welcome, engaged in lengthy discussions about what time would work to take medications each day, counseled men in order to preempt possible issues (e.g., side effects, the schedule for taking medications, disclosure), and were resourceful in helping to ensure adherence.

Confidentiality was a concern among men as it related to infrastructure and the possibility of seeing others when going to the facility. Since those seeking HIV services were directed to one particular provider, there was concern this might put them at risk of being identified. No examples were given where confidentiality was actually breached. Further, one example of an ART stockout for 2 weeks was reported which delayed, but did not stop, initiation.

Findings from HIV-negative men
HIV-negative men who were asked to reflect on treatment initiation if diagnosed with HIV felt positive toward treatment as a result of increased treatment literacy through BFL and now understood that treatment is provided for free and can allow for a normal life. Most of them reported they would begin treatment if diagnosed HIV positive in order to maintain health and avoid death. However, some felt they would find it tiring to take pills long term.

2.3 *Treatment retention*
MLHIV in the study who initiated treatment faced challenges such as timing medications around their work schedules, managing side effects, confidentiality concerns around clinic visits to pick up medicines, and social barriers including concerns of people they know seeing them take their ART. Most were comfortable having strangers see them in the waiting room. Confidentiality and social status concerns were more common when men talked about receiving care in the villages, or more rural areas, as compared to the cities.

There were three factors associated with overcoming challenges to retention:

- **Psychosocial support and active treatment support**: Having easy access to peer navigators and health providers was mentioned as the main facilitator for retention, particularly with respect to side effects. Men described frequent conversations and encouragement to continue on treatment, which allowed them to withstand the first few difficult months.
- **Felt health benefits**: After starting treatment, one man was frustrated by the constraints to his schedule associated with taking ART but was extremely relieved to regain his physical health. He felt that treatment allowed him to gain weight and work in the field again.

- **Anticipated health benefits**: This was linked to improved treatment awareness. Men cited examples provided during the BFL program when describing anticipated health benefits from ART.

3. Peer navigators' experiences in BFL

3.1 *Peer navigators' interactions with men in BFL*

PNs described communicating with men by phone more often than in person (especially when the men lived in rural areas or far away from the PNs) and that they interacted multiple times per week, sometimes daily, when men first began treatment. The number of contacts was higher at the beginning of men's treatment journeys (within the first 2 weeks) and diminished over time as men grew more confident and comfortable with treatment. According to PNs, conversations covered a range of topics including:

- Acceptance of the testing and of the testing results;
- Treatment initiation, encouraging men to go to health facilities;
- Side effects and how to deal with them;
- Disclosure;
- Support, advice, and recommendations;
- Self-stigmatization;
- Severity of HIV; and
- Logistical issues (e.g., setting up meetings; scheduling appointments, calling to check up, offer rides, keep motivated, or provide support).

Several PNs highlighted how their conversations with men focused on men's strengths, rather than the risks of HIV, to motivate men to initiate and stay in treatment. PNs talked with men about previous challenges they faced to help men realize they have natural strengths that can allow them to overcome their HIV-related fears or other obstacles when seeking treatment. This strengths-based counseling approach, a central part of their training, was echoed by several PNs, who highlighted how men's moral character and determination facilitated their engagement in care.

Most PNs accompanied men in the program to health facilities to begin treatment or for follow-up visits to refill medications. This happened most frequently during the first few visits. PNs perceived these visits as key to ensuring that men initiated treatment and remained in care, and emphasized the importance of not only accompanying men to their appointments but also facilitating the appointment itself. The PNs were introduced to the local HTS partner institutions at the beginning of the intervention and some PNs would use their status as PNs upon arrival at the facility to communicate with providers to ensure that men were seen promptly and received the necessary medications with minimal delays.

Identified Challenges by MLHIV: According to PNs, the following topics were challenging for the men and were often the focus of conversations:

- ***Accepting one's status and internalized stigma***: PNs described the difficulty some men had in accepting their status and the exchanges they often had with men to address

internalized stigma. PNs highlighted how they would address men's fears about HIV by comparing it to diseases like malaria in order to 1) mitigate concerns about the severity of HIV and 2) emphasize how treatment will allow them to maintain an outward appearance of good health.

- ***Disclosure***: Fear of disclosure or how best to disclose to one's partner were often topics that PNs discussed with the men.
- ***Treatment initiation***: PNs were committed to getting men on treatment by encouraging them to go to a facility. Often, this included arranging the appointment, accompanying them to the visit, and sometimes even providing transportation to minimize any potential barriers or delays.
- ***Retention in care and treatment adherence***: PNs discussed side effects and often called to check on whether men were taking their ART properly. PNs sometimes asked how many pills they had taken as a proxy to ensure adherence.

Gaining men's confidence and trust: Most PNs considered confidentiality to be the most important way to gain men's trust. PNs thought that ensuring men's confidentiality—and perhaps telling men about the existing laws that protect their confidentiality or whom to contact if any unintentional disclosure were to occur—is an important way to encourage men to talk more freely about their experiences.

Several PNs emphasized how they engaged in compassionate dialogue with men to understand their experiences. Often, the first interaction (either on the phone or in person) was pivotal to gaining men's trust and confidence. Having the ability to listen to each individual man and to find the right words to put him at ease was an important skill. In-person connections were considered vital to gaining men's trust. Some PNs highlighted how learning details about men's lives (e.g., over a meal, or learning about their families or where they worked) made them better PNs and allowed them to provide better support and counseling, with the aim of ensuring that all men remained in care and adherent over time.

3.2 *Reflections on men's experiences in BFL*

PNs were asked to reflect on men's experiences in BFL and whether they thought men's knowledge of HIV or motivations to engage in HIV-related care were influenced by the program.

Changes in knowledge or motivation: Most PNs emphasized that men showed improved understanding of HIV overall, including HIV stigma, the severity of HIV, and ART, after participating in BFL. Others provided more nuanced perspectives. There remained, according to some PNs, opportunities to improve men's understanding of HIV. For example, men learn about viral load and CD4 count during BFL, but they could still fail to retain knowledge about how ART works and how it affects one's viral load and CD4 count. It was, according to one peer navigator, the role of the PN to fill the gaps in understanding that continued after participation in the BFL workshops.

PN perspectives on the most influential aspect of the BFL program: Most PNs considered their interactions with men to be the most influential aspect of the BFL program. They often

described the most important components to be the communication, counseling, advice, dialogue, and exchanges that take place with PNs. Others emphasized the importance of the accompaniment of MLHIV to appointments, which provided participants with the logistical as well as social support necessary to overcome important barriers to care seeking. Still others emphasized the community connections fortified during the workshops and between the peer navigators and men. Finally, one PN highlighted how the workshop modules on HIV treatment specifically had the greatest effect on men's behaviors.

DISCUSSION

The BFL program was highly successful in reaching HIV care continuum outcomes of HIV testing, ART initiation, and ART retention. Furthermore, member recruitment achieved a programmatic goal of involving men at higher risk for HIV. After improvements in the recruitment strategy, 3.6% of men tested HIV positive among the 80% of participants who underwent HIV testing. When compared to the national HIV prevalence among men aged 15–49 in Côte d'Ivoire of 1.9%,[18] the program yield indicates success with recruiting men at higher HIV risk. Of the men testing positive, 97% initiated ART. This is considerably higher than reports from other programs, especially among men. ART initiation after testing HIV positive in sub-Saharan Africa ranges from 23–93%.[19] The rate of retention in care of the BFL program was also superior to other retention-in-care data from Côte d'Ivoire. We observed 100% 6-month retention in HIV care among those initiating ART in the BFL program. This is substantially higher than the 12-month retention reported from PEPFAR data for men ages 15 and over, which was 78% in Yopougon, 82% in San Pédro, and 86% in Bouaké for 2017.

We believe these achievements in identifying men at higher risk for HIV and engaging and retaining them on ART are a result of specific BFL program elements. We base this assumption on the historical data from Côte d'Ivoire and elsewhere in sub-Saharan Africa along with our success in program implementation. Ninety-five percent of BFL participants attended all five sessions and the BFL components were delivered with high fidelity as indicated by our fidelity and quality assessments. Participants gained knowledge as evidenced by changes in responses between the pretest and posttest scores, and the BFL sessions and strengths-based peer navigation components appeared to adhere to the underlying behavior change models based on the findings from the in-depth interviews. Specifically, the BFL program appeared to build social cohesion, increase testing self-efficacy, improve treatment awareness, and provide emotional and instrumental support to engage in HIV care and remain on ART.

Testing and Treatment Cascade

One specific factor we identified through in-depth interviews that appeared to contribute to the program success was on-site testing. Men who seemed open to testing as a result of BFL reported not being tested if they missed the BFL session where it was offered. This suggests that for some men, the intention to test generated by BFL content must be met by on-site

testing for them to follow through. The support and guidance of peer navigators also was also credited with supporting treatment initiation and retention.

We found that the accessibility and eligibility for treatment appeared to be a considerable factor in the high treatment initiation rate. Test and Start began in Côte d'Ivoire in January 2017 and by April 2017, when the intervention started, Test and Start was active in the three intervention sites. Ninety-three percent of the 131 men who initiated treatment did so within 4 days after testing HIV positive. Prior to Test and Start, 72% of the men would not have been eligible to start treatment immediately based on their initial CD4 count of >500 cells/mm^3. As part of the formative qualitative research conducted before this evaluation began, the team conducted interviews with MLHIV who were not on treatment and found that many of them were eager to begin ART but were not eligible. As Test and Start rolled out in tandem with the BFL program, the accessibility barrier was removed and treatment initiation was almost uniformly immediate following testing.

The high testing and treatment initiation rates appeared to be linked to improved knowledge and attitudes about treatment. Men felt empowered to test because they no longer felt that HIV was a death sentence, and they were motivated to start treatment quickly because they were aware of the multifaceted benefits of early initiation. However, neither the pre-data nor post-data suggested a link between treatment literacy as defined in the questionnaire (such as knowledge of the term viral load or a detailed understanding of when to start or stop treatment) and getting tested during BFL. The pieces of knowledge that were consistently cited as significant for men during interviews were awareness that an HIV treatment exists that can make daily life almost normal, that treatment is free and available to all, that the medication regimen is manageable, and that delaying treatment is risky to one's long-term health.

Limitations

There are several limitations to the study. First, the results may not be generalizable beyond the population of adult men who participated in the BFL intervention. Men who participated in BFL may be different from men who refused to participate or dropped out after one or two sessions. However, the BFL recruitment and program evaluation were unlikely to bias findings as the BFL recruitment was largely by word-of-mouth to reach men at high risk for HIV (and not specifically interested in the HIV care continuum), and nearly all BFL members agreed to be a part of the program evaluation (97%). Another limitation is that this was a single-arm study without a contemporaneous counterfactual. We cannot know whether the BFL activities were responsible for the high HIV testing, linkage to care, and retention that we observed. While historical data have substantial limitations due to a change to universal Test and Start we believe, as described above, that BFL components very likely contributed to the care continuum outcomes we observed. A related limitation regarding knowledge of HIV status is that we did not have complete prior testing data on all participants; as a result, the reported testing rate of 81.2% represents a minimum of men who knew their status. It is possible that a greater proportion of BFL participants had recent testing or already had an HIV-positive or HIV-negative diagnosis.

CONCLUSIONS AND RECOMMENDATIONS

The implementation of BFL in Côte d'Ivoire successfully achieved goals of participation of men at high risk of HIV, encouraging HIV testing, and achieving linkage to care and retention in care. We believe that continued or expanded implementation of BFL in Côte d'Ivoire would be an effective approach to continued testing and ART initiation among men. The BFL approach may also be effective in other settings to reach a mostly heterosexual male population with HIV testing and ART initiation and retention. We note that formative work prior to starting BFL sessions and adaptations during implementation of the program were important for designing and optimizing delivery of the program. Context-specific adaptations contributed to the success of this BFL program in Côte d'Ivoire and need to be considered where and when BFL is applied to other settings.

More specifically, evaluation findings suggest several next steps:

- **Retain new recruitment and testing strategies while increasing volume.** The yield improved after introducing a risk-screening form and after giving all men the opportunity for individual counseling after the session. These strategies should be incorporated in future implementations of the program in order to reach the most high-risk men and remove barriers to testing.
- **Revise BFL curriculum**. The pretest results suggested that before participation in the BFL program, knowledge was high but belief scores were low. The program can reduce time on HIV knowledge items while strengthening the content on risk perception and treatment self-efficacy. The "Men as Lovers" session was particularly valued and could be expanded. Some of the gender equity items in the pretest/posttest that reflect the "Men as Lovers" module saw significant movement between pretest and posttest (see Annex C). For treatment literacy, knowledge can be simplified and peer navigators can teach and reinforce more complex topics during counseling sessions.
- **Develop communication messages around themes identified by men.** Messages should leverage images and concepts around courage and control. Men described the BFL program in terms of giving them courage and helping them take control of their sexual behavior, finances, and family life, as well as HIV prevention, testing, and treatment.
- **Position BFL graduates as advocates.** Participants described sharing content with their neighbors, mobilizing to bring BFL back to their communities, inviting others to be tested for HIV, and supporting PLHIV to start treatment. Men who felt they benefitted from participating in the program can be supported to mobilize and advocate for the program and for HIV testing among their peers.
- **Incorporate HIV self-testing into the curriculum.** Some men who chose not to test at BFL would be good candidates for HIV self-testing, such as men who delayed in order to test with their partner, or men who did not feel ready to test or feared confidentiality breaches. Self-test kits could be available as part of post-BFL counseling.

- **Equip participants to overcome confidentiality concerns during treatment initiation.** Addressing fears about confidentiality breaches, perhaps through role plays or discussions during BFL, may help in overcoming initiation barriers.
- **Continue to assist MLHIV through psychosocial support** from peer navigators as an important facilitator for treatment retention and ongoing adherence. Encouragement and troubleshooting to address barriers men face is essential, particularly related to issues of disclosure and planning for clinical visits early in their treatment journey.
- **Retain the strengths-based counseling approach.** Men described their own knowledge of treatment as a factor in initiation, as well as a variety of ways they were able to overcome obstacles to retention. Peer navigators were positive about the strengths-based approach that appears to have had a supportive effect.

Further, the evaluation findings may be used to inform other programs reaching men through a variety of ways:

- Social and behavior change programs have an essential role to play in supporting men in testing and treatment initiation, helping them appreciate the urgency of immediate enrollment in treatment while still feeling healthy, and ensuring ongoing adherence.
- Support immediately after testing through peer navigation can be an impactful investment to ensure each man begins his treatment journey on solid footing with an understanding of what to expect and how to manage challenges along the way.
- These findings may also strengthen service-side interventions in enabling providers to improve counselling with men about the issues most relevant to male clients to encourage greater retention in care. For example, this study may inform counseling strategies with MLHIV as providers address treatment fatigue and side effects, both of which continue to pose a challenge for men and impact ongoing adherence and retention. Ensuring confidentiality remains an important aspect as well.
- Social support and group cohesion were also important factors in the BFL approach. As mentioned above, men learned from one another and felt they could approach other members of the group for advice. The social cohesion experienced by men allowed them to shift from hiding health issues, including HIV, to sharing them. This type of group approach may prove useful in other settings.
- In deeply understanding male values and perceptions, a comprehensive package of social and behavior change approaches built on those insights, like BFL, can be effective in ensuring a client-centered approach and improving male engagement across the HIV continuum.

ANNEX A. DEMOGRAPHIC CHARACTERISTICS OF COHORT PARTICIPANTS

Demographic Characteristics	N = 7,187	Percent
Marital Status		
Married	1,077	15.0%
Living together as a couple, but not married	2,389	33.2%
In a relationship, but not living together	1,342	18.7%
Divorced/separated/widowed	265	3.7%
Single	2,114	29.4%
Age		
25–29	2,039	28.4%
30–34	2,030	28.3%
35–49	2,180	30.3%
50+	938	13.1%
Children		
Yes	4,536	63.1%
Religion		
Catholic	1,794	25.0%
Other Christian	2,168	30.2%
Muslim	1,859	25.9%
Animist	243	3.4%
No religion	931	13.0%
Other	192	2.7%
Education		
None	1,414	19.7%
Primary	1,689	23.5%
Secondary	2,593	36.1%
More than secondary	1,491	20.78%
Income Generating Activity		
Yes	5,933	82.6%
Professions		
Agriculture (including animal husbandry and fishing)	1,890	31.9%
Informal sector	1,730	29.2%
Commerce	766	12.9%
Trades (e.g., mechanics, plumbers, electricians, carpenters, artists, etc.)	414	7.0%
Teachers, healthcare workers, office workers	397	6.7%
Industry	382	6.4%
Driving/transportation	303	5.1%
Other	51	0.9%

ANNEX B. DEMOGRAPHIC CHARACTERISTICS OF PRETEST/POSTTEST PARTICIPANTS

Demographic Characteristics	N = 400	Percent
Site		
Yopougon	129	32.3%
Bouaké	135	33.8%
San Pédro	136	34.0%
Marital Status		
Married	56	14.0%
Living together as a couple, but not married	117	29.3%
In a relationship, but not living together	54	13.5%
Divorced/separated/widowed	5	1.3%
Single	168	42.0%
Age		
25–29	136	34.0%
30–34	127	31.8%
35–49	99	24.8%
50+	38	9.5%
Children		
Yes	231	57.8%
Religion		
Catholic	108	27.0%
Other Christian	144	36.0%
Muslim	86	21.5%
Animist	9	2.3%
No religion	39	9.8%
Other	14	3.5%
Education		
None	38	9.5%
Primary	93	23.5%
Secondary	257	64.3%
More than secondary	12	3.0%
Income Generating Activity		
Yes	293	73.3%
Sectors		
Agriculture (including animal husbandry and fishing)	44	15.0%
Informal sector	120	41.0%
Commerce	42	14.3%

Trades (e.g., mechanics, plumbers, electricians, carpenters, artists, etc.)	22	7.5%
Teachers, healthcare workers, office workers	31	10.6%
Industry	18	6.1%
Driving/transportation	13	4.4%
Other	3	1.0%

ANNEX C. RESULTS OF PRETEST/POSTTEST

Items	Average at pretest	Average at posttest	Two-tailed sig.
Sum of all thirty-four knowledge items	28.255	29.4725	0.0000
HIV is a virus that destroys the body's natural immunity against infection.	0.8875	0.9075	0.3023
Sum of seven myth items	5.7075	6.0800	0.0000
People can tell if they have HIV because they will feel weak.^	0.8025	0.8225	0.4049
Only people who have many sex partners get HIV.^	0.6750	0.7625	0.0005
HIV is an illness that affects only homosexuals.^	0.8500	0.9250	0.0001
A sorcerer can transmit HIV by cursing someone.^	0.8075	0.8675	0.0015
You will prevent HIV if you take a shower after sexual intercourse.^	0.8800	0.9075	0.1728
Having sex with a virgin cures AIDS.^	0.9625	0.9825	0.0881
There are traditional healers who can cure HIV and AIDS.^	0.7300	0.8125	0.0002
Sum of nine transmission knowledge items	6.9800	7.2825	0.0000
All babies whose mothers are infected by HIV are born with the virus if the mother does not take medicines to prevent transmission.^	0.1625	0.1350	0.2221
Having sexual intercourse with someone who has HIV is one way of getting the virus.	0.8600	0.9125	0.0101
If a person shakes hands with someone who has HIV, they can get the virus.^	0.9650	0.9800	0.2012
HIV can be transmitted by sharing a plate of food with someone who has HIV.^	0.9550	0.9750	0.1025
A man can contract HIV if he withdraws before ejaculation when having sex with an HIV-infected woman.	0.7050	0.6975	0.7951
A person who already has a sexually transmitted infection (STI) is more likely to catch HIV than a person who does not have an STI.	0.7075	0.8225	0.0000
A person who had unprotected sex only once with a partner who is infected can catch HIV.	0.9525	0.9550	0.8577
Using a condom during sexual intercourse can prevent the spread of HIV.	0.9225	0.9525	0.0577
Antiretrovirals can decrease the risk of transmitting HIV to sex partners.	0.7500	0.8525	0.0001

Sum of six testing knowledge items	5.5175	5.6525	0.0024
It is possible for a husband and his wife to have different HIV testing results: one positive, the other negative.	0.8375	0.8950	0.0095
If a person tests HIV positive, it means that the person's life will end soon.^	0.8500	0.9175	0.0006
Everyone should get tested for HIV, even married couples.	0.9925	0.9875	0.4802
If a person thinks they were exposed to HIV, they should get tested right away and then get tested a second time within 3 months to be sure of their status.	0.9850	0.9850	1.0000
If a person has tested HIV negative in the past, they should not test again.^	0.9175	0.9300	0.4929
If a person tests for HIV, everyone in the community will know the results.^	0.9350	0.9375	0.8697
Sum of 11 treatment literacy items	9.1625	9.5500	0.0000
An undetectable viral load means that a person is no longer HIV positive.^	0.7275	0.7950	0.0156
Once the HIV viral load results are 'undetectable,' HIV medications can be stopped.^	0.7325	0.8500	0.0000
Immediately starting treatment for HIV after receiving a positive test will help prevent transmission to others.	0.7850	0.8600	0.0023
When HIV medications work well, the viral load increases.^	0.7725	0.8225	0.0587
Antiretrovirals cure HIV.^	0.7075	0.6675	0.1477
A person who tests positive for HIV should wait to start antiretroviral therapy until the person feels ill.^	0.9125	0.9575	0.0078
A person with HIV taking antiretrovirals can stop taking medications once the person feels better.^	0.9025	0.9325	0.0961
Antiretrovirals help someone who is sick gain weight and get better.	0.9025	0.9075	0.7932
Antiretrovirals help someone who is already healthy remain strong.	0.8000	0.8075	0.7536
Antiretrovirals help people with HIV live longer.	0.9725	0.9725	1.0000
The results of a viral load test will help someone understand if the person's HIV treatment is working.	0.9475	0.9775	0.0184
Sum of 14 gender equity items.	47.6775	48.3925	0.0021
Having sexual relations with young girls without a condom rejuvenates men.^	3.3750	3.6225	0.0000
It is normal for a man to have several women as sex partners.^	3.6000	3.7600	0.0012
I would feel offended if my wife/girlfriend wanted to use a condom because a real man does not use condoms.^	3.3250	3.4625	0.0365
A woman can suggest using condoms just like a man can.	3.6225	3.6700	0.4181
A woman who likes sex cannot be trusted.^	2.2375	2.2050	0.6783

It is okay for a man to hit his wife if she won't have sex with him.^	3.9075	3.9300	0.4020
It is okay for a man to force his wife or girlfriend to have sex with him even if she does not want to. ^	3.9600	3.9350	0.2257
It is okay for a man to hit his wife if she is not taking care of her duties in the home. ^	3.5175	3.6700	0.0053
Sometimes men need to show women that they are in charge by being violent.^	3.6375	3.5975	0.4075
A woman's most important role is to take care of her home and cook for her family.^	1.3600	1.5300	0.0013
It is important that a father be present in the lives of his children, even if he is no longer with their mother.	3.9750	3.9175	0.0206
A couple should decide together if they want to have children.	3.9300	3.9250	0.8463
If a man gets a woman pregnant, the child is the responsibility of both.	3.8950	3.9200	0.4210
If I stayed at home to take care of children while my wife went to work and my friends knew, I would feel ashamed.^	3.3350	3.2475	0.2079
Sum of six HIV belief items	20.0700	20.7350	0.0001
Someone with HIV will be too weak to do heavy work.^	2.3225	2.5975	0.0003
I can tell by looking at someone if they have HIV.^	3.5650	3.7525	0.0002
Being diagnosed with HIV means one's life is no longer worth living.^	3.8000	3.8450	0.2458
I would be afraid of finding out my HIV status if I got tested.^	3.2575	3.3100	0.4659
A person infected with HIV can live a normal life.	3.6900	3.7275	0.4200
Antiretrovirals/HIV treatment are for weak people.^	3.4350	3.5025	0.3028
Sum of five stigma items	17.5675	17.8625	0.0471
Going to an HIV clinic will make people think I am a weak man.^	3.6325	3.6600	0.5925
HIV should be considered like any other illness.	3.3175	3.3000	0.7839
If I knew someone with AIDS, it would be hard for me to continue that relationship.^	3.2100	3.3850	0.0205
If I learn that a vegetable seller has HIV, I will not buy vegetables from that seller.^	3.6250	3.7400	0.0291
If a teacher has HIV, that teacher should not be allowed to be around students.	3.7750	3.7775	0.9460
Sum of five gender norm items	11.135	11.515	0.0088
Being able to perform well sexually is important to me as a man.^	1.3175	1.4325	0.0187
Having sex is part of being a successful man.^	2.8375	2.8325	0.9452

I worry about being unable to become sexually aroused when I want, like a real man should.^	2.14	2.4625	0.0002
It is important to me to know I can drink as much or more than others.^	3.7625	3.685	0.1161
Real men should provide financially for their family.^	1.0775	1.1025	0.3274
Sum of four prevention self-efficacy items	15.1650	15.5350	0.0001
I feel confident I can make thoughtful, good decisions about my sexual behaviors.	3.8575	3.8975	0.2487
I feel confident I can limit my number of sex partners.	3.7725	3.8750	0.0026
I feel confident using a condom every time I have sex.	3.7250	3.8475	0.0019
I feel confident I can use a condom correctly.	3.8100	3.9150	0.0020
Sum of 5 partner communication self-efficacy items	18.6375	18.9825	0.0054
I feel confident talking with a prospective sex partner about our sexual histories.	3.1475	3.4200	0.0000
I feel confident talking with a sex partner about HIV.	3.7625	3.8625	0.0207
I feel confident I can talk with my partner about protecting our sexual health together.	3.9350	3.9200	0.5781
I feel confident I can tell my partner we should use a condom.	3.8600	3.8400	0.5851
I feel confident talking with a health care worker about HIV.	3.9325	3.9400	0.7611
Sum of three testing self-efficacy items	11.3425	11.6025	0.0013
I feel confident I can find out how to get tested for HIV.	3.7675	3.9050	0.0001
I am mentally prepared to get tested for HIV.	3.8175	3.9000	0.0060
I am not afraid of getting tested for HIV.	3.7575	3.7975	0.3198
Sum of two treatment self-efficacy items	7.7550	7.7700	0.7496
I am confident I can seek treatment for HIV if I need it.	3.8625	3.8700	0.8111
I am confident if I need HIV medication, I can take it daily to prevent my health from getting worse.	3.8925	3.9000	0.7701
Sum of seven risk perception items	24.8600	25.1775	0.1379
Only certain types of people should go for HIV testing.^	3.3750	3.5000	0.0462
Men with families don't need to test for HIV.^	3.8800	3.8525	0.4362
It is important for people like me to get tested for HIV.	3.9400	3.9450	0.8477
HIV/AIDS is not a problem that is relevant to me.^	3.6200	3.6800	0.3162
HIV is not a threat to me.^	3.3750	3.4775	0.1512
I am not the kind of person who is likely to get HIV.^	3.4875	3.5600	0.2179
I am less likely than most people to get HIV.^	3.1825	3.1625	0.7844
Sum of four communication items about couples.	14.8475	15.0875	0.0259
Men and women don't really need to discuss HIV with each other.^	3.7675	3.8450	0.0894
If a man's partner asks him to go to the health facility to get tested for HIV, he should go.	3.8975	3.9200	0.4704

Someone who is HIV positive, should share that status with his or her partner.	3.8075	3.8800	0.0458
It is more important to keep my wife/girlfriend than to share my HIV status with her, even if it puts her at risk for HIV.^	3.3750	3.4425	0.3696
Other item			
The HIV test is accurate.	3.7750	3.8850	0.0012
Intention and behavior			
Have you gone to a health clinic for any advice or consultation in the past 12 months?	0.3750	0.5975	0.0000
Have you gone for HIV testing anytime in the past 12 months?	0.3450	0.6950	0.0000
How likely are you to go to a health clinic for advice or consultation within the next month?	3.3800	3.4925	0.0741
How likely are you, personally, to go for HIV testing within the next month?	3.4225	3.4950	0.2103
How likely are you to talk about your health with friends or family in the next 6 months?	3.3975	3.5925	0.0003
How likely are you to talk about HIV with friends or family in the next 6 months?	3.6150	3.6725	0.2500
How likely are you to talk about HIV or STDs with a sex partner in the next 6 months?	3.6150	3.6875	0.1302

Items shaded grey when significant difference between pretest and posttest

^ Item was reverse coded

ANNEX D. SUPPORTING QUOTATIONS FROM INTERVIEWS

1. Overall experience in the program
"Brothers for Life, well, it is to help those who are sick. Me, at first, frankly, I did not feel well. I started to lose weight, then I got nervous. And then, there was a group of young people in our neighborhood who taught for a time until they said that there would be, um, an [HIV] test. I said okay, I'll do it. Frankly, when I did it, when the guy told me, I was discouraged about life. And he told me, no, you shouldn't . . .it is a virus, it hasn't arrived at the point of illness yet. I said okay, but what do I do now? He said, no, that they'll give me . . . they'll take me somewhere and a man will call me and that man, it was him that was there, right away with us . . . he called me. He said that we'd see each other. We saw each other near "lavage" and he told me that I was already cured. I said, oh, good. When he told me that, I went home. I was sitting there until I said, okay, well, that's life eh, there are people who have an accident one day who die. There are people who have malaria one day who die. If someone comes to help me get treated by people, okay, I accept. And that is why I went to their center. When I arrived there, they gave me medications and they talked about all that, okay. And then, the medication, in any case, the medication is good. The first day I took the medication, I . . . I almost fell down. Yes, I almost fell down because the power of the medication was really strong. Because it is a thing, a new product that had entered my body, well it wore me out a bit. And then, well, as time went on he himself told me that little by little, little by little, it would get better. So, as time went on, well . . . right now it's okay. There's no problem, I've even gained some weight (laughs). I was there and when people see me they say, ah, you're no longer sick, eh." (MLHIV, Yopougon)
"The first 2 weeks weren't easy for her. It was me who encouraged her because, it's what I already said, I said that the program that we did, in any case, it taught us many things. For people who haven't done it, it isn't easy to learn about it like that in any case. So I, it is that program that made it so that, I mean, I had a little bit of strength in me. So, it was me now who encouraged her until, and well, now, today, it is okay." (MLHIV, San Pédro)
1.1 Group experiences
"From my perspective, Brothers for Life . . . what I got out of it or even advice for others, if you are sick, you shouldn't hide, you should get treated." (Did not test during BFL, Yopougon)
"The Brothers for Life program showed us that you should share your problem with someone who will give you ideas to better solve the problem. Above all, today we have certain illnesses and we are ashamed to stop in front of others and talk about them because we tell ourselves that we will be mocked or things like that. We are scared to inform. Meanwhile, today, Brothers for Life has come to show us that we should talk about it so that others give us ideas. With respect to the program, there are many, myself included . . . I was ignorant. I was ignorant about this subject. But I learned even more and today I'm really proud of it." (Tested negative during BFL, Yopougon)
"I already have the phone numbers of some Brothers for Life. We go together to contact them and introduce them and then, together, we'll find a solution on how to maintain his

health, how to lift his spirits so that he is not weakened." (Tested negative during BFL, Yopougon)
1.2 Content and new knowledge from BFL
"It informed me and opened my mind about, concerning HIV. It's not that I wasn't aware of certain things, but it enriched me further with respect to knowledge about the virus." (Did not test during BFL, Bouaké)
"They are the military in our bodies so when you follow the treatment they eliminate the virus, but that doesn't mean that the virus is no longer in the body. So that really, it is when you follow the treatment that you have your life" (Did not test during BFL, San Pédro)
"About treatment, specifically, I learned a lot of things. But what is tough is that it is for life." (MLHIV, Yopougon)
"I didn't know how eh, the medication, the HIV treatment is for life, there. I didn't know that. I didn't know. . . But I learned that the medications are not only free, but accessible to everyone, everyone. In any case, that, that delighted me a lot." (Tested negative during BFL, Yopougon)
"They said during the course that the medications are free." (Tested negative during BFL, Yopougon)
"Well, like the brothers came to tell us, if it happens to you, go directly to a health center. There are centers for that. You go there and they will treat you, and, well, it is free, true or false. So there isn't this business of saying that me, I'm going to hang myself, I'm going to kill myself because I have HIV. No, no, no. You go to a health center and the people who take care of that, they will put you on treatment, how you can manage the disease so as not to be weakened, do your best to always be physically in good health." (Did not test during BFL, Bouaké)
"If you follow your treatment you can live like a normal man" (Did not test during BFL, Yopougon)
"We told ourselves what? Once you have HIV, it is finished for you. . . . But, with the Brothers for Life program that we did there, that is to say it showed us that you can have HIV and go about your activities if you follow your treatment" (MLHIV, San Pédro)
"In my knowledge, these medications don't cure. But they reduce the viral load, if I'm not mistaken" (Did not test during BFL, Yopougon)
"The couples, the way couples, here in Africa, the way we live and, in the West, how people there live in couples. Because, in general, it is completely different. Here, the man is, rather, rather the man has his hand on his wife. It starts in our villages, we see it in our villages, there. We debated the subject a little. I helped some people understand that these things, it is outdated, it is obsolete, we should no longer return to it . . . That was [in the] "Men as Lovers" [section] or something like that, I think." (Tested negative during BFL, Yopougon)
1.3 Key attitudinal changes
Couple communication & gender norms
"Ideas about marriage were far from my objectives. Because I told myself what, marriage today is based on means, but with the training I understood that it isn't only means that can form the basis of marriage, but human relationships and behavior above all that create a good marriage, a good couple." (Tested negative during BFL, Bouaké).

“Because the times that I go out, my wife isn’t happy. And every time I go out she says, “You’re going out again? You’re going out again at night? Now where are you going?” But after I did the training, when I leave work, I’m with the family. We watch television, we listen to a lot of trainings, we eat, we’re there, we’re at home, I don’t go out.” (Tested negative during BFL, San Pédro)
“Avoid beating the woman and bickering with her and have, eh, communication in the couple, it is something that is very important. And a couple without communication, there are always misunderstandings. If there is something, you talk, you sit down, you talk, together you find common ground, it is very good.” (Did not test during BFL, Bouaké)
“There, the facilitators brought that to help us understand that, when you are the boss, and you often give orders, when you are now beneath, and you are given orders, often you don’t have a choice, you are obliged to execute them.” (Did not test during BFL, Bouaké)
Views of PLHIV
“[BFL] allowed me to know that even if someone has HIV/AIDS we shouldn’t reject them. Yes, I can eat with him without getting the disease.” (Tested negative during BFL, Yopougon)
“Now it made it so that I’ve changed a little. My view has changed towards people who are seropositive.” (Did not test during BFL, San Pédro)
“The man who has AIDS, we should always talk to him, chat, to give him courage to get treated.” (Tested negative during BFL, San Pédro)
Perceived severity of HIV
“The program Brothers for Life raised my spirits. Even immediately, were they to tell me that I was seropositive, I wouldn’t be defeated like, like when I was in the dark. I know now how to get treated, where to go to get treated, where to go to get treated regularly so that the viral mass does not increase.” (Tested negative during BFL, Yopougon).
HIV testing
“Now with this training that we did I was not able [to test] but I said that I would get informed so that my wife and I, we get tested.” (Did not test during BFL, Bouaké).
“I plan to do it. But today I’m not prepared for that.” (Did not test during BFL, Yopougon).
1.4 Key behavioral changes
Condom use
“Well, I can say that, yes, there has been a new change. Because, in the past, I devoted myself to certain practices. But with those who finished the training, I had lessons on, for example, using a condom. It isn’t everyone . . . They received the training, the need for the condom. I was there too, I learned that it is important.” (Did not test during BFL, Yopougon)
“Control oneself, eh, a young person like me today. In the beginning, I didn’t know that I was infected. We went around pursuing women as we wanted, but today, with everything that we’ve learned during the training, before we took the [HIV] test, it led me to understand a lot, that life isn’t led . . . what is certain is that it isn’t even good for a man, if you live with a woman you should protect yourself, but you should also protect the family.” (MLHIV, San Pédro)
Limiting sex partnerships

“A man, under normal circumstances a man, you have your wife, it is good, but you can have at least, at least one girlfriend outside, that is enough” (Did not test during BFL, Bouaké).
“I stopped all that. I stayed sincere with my wife in my home. I know that it made me change” (Did not test during BFL, San Pédro)
“Something changed, it has made, well, it has made it so that now, once you are with your wife, well, you are there the two of you, you can’t, you can’t go out and about like before, because you shouldn’t infect others” (MLHIV, San Pédro)
“Since I got my test, I stopped going outside of my wife. Like I said, if I need to travel, I should have my condom with me. We never know. With the exception of my wife, I shouldn’t go out with another woman without using my condom. Never. I’ll never do it again before my death” (Tested negative during BFL, Yopougon)
“Before, in any case, before, I went out. I had girlfriends everywhere. There is my wife here and I don’t protect myself. Then, when they talked, I said, ah, I was trained, I sent brothers there. If today they learn that I have it, in any case, the man there got that disease, whatever I ask, people won’t consider it. So, since that day, me, in any case, me, myself, I don’t go out any more. Because of that my wife says, ah, you, you are changing. I say yes. There. So, since that day, me, myself, even to go in the bars, mm-mm [no], I don’t budge any more, there you go, because that is the cause. When we go drink, because they talked about the business of drinking, that is what drives us to do those things. So, even drink[ing alcohol] I’ve quit. So, my wife says, in these days you are in the process of changing, eh, and I say yes, because they showed us those things, so we did the training, so I am in the process of changing a little, a little. So, even the, there are even women who have come to me because if you, you’ve come here, I should call those people so that they come do their training again because they see a little bit of change.” (Tested negative during BFL, San Pédro)
Individual advocacy
“Me, now I’m the professor of the house.” (Did not test during BFL, Yopougon)
“Everything that they showed us, when I arrived at home I sit with my family to talk about it a little, a little. Myself, I am very happy about it.” (Did not test during BFL, San Pédro).
“When we did the training, after we got together amongst ourselves in the village there and we gave ourselves the advice that we should approach others to give them what we saw, evangelize what we saw in some way. So we did that and after the training we visited the other neighborhoods and we reported to the population.” (Tested negative during BFL, Bouaké)
“People look at me. That is why I, when I was speaking there, I spoke. I said that there are even women, they come like, they come say that to my wife, in any case, your man there, your man has changed. That really, they’re going to come, that’s it, I said that they came to me, eh, the same training, to tell their husbands that they should come attend as well.” (Tested negative during BFL, San Pédro).
2.1 HIV testing
“But I say to those with whom I live there, I tell them to do their test. Once you have done yours, you are free. You no longer have worries. Even, whatever the [result], you have the disease, but you aren’t scared because they gave you tips of things, information that gives

you courage, that gives you… that tell you once you follow your treatment there, you will still live a long time." (Tested negative during BFL, Yopougon)
"Well, regarding HIV-positive men, me, from my perspective, they shouldn't be scared, it is a disease that doesn't kill, it doesn't kill. It is a disease that today is treated, it is when you yourself are negligent that you go towards death. If not, if they put you on treatment and you follow your treatment, nothing can, nothing can happen to you. Myself, in the beginning when I started to follow my treatment, I gained "form." When I passed, people talked about me, ah, little one, you have gained weight, ah, little one, and then, myself, I was too happy. So, today, tell my brothers who are also a little like me, who are scared, really they shouldn't be scared. They should go get tested or they should go to follow their treatment." (MLHIV, San Pédro)
"Yes, I did it, I did it. Even the day before going to do it, even then they asked my forgiveness, eh… because I was scared. Because I didn't stay calm. And because, when they talked to me about it, it cut my heart immediately, cut, cut . . . Well, it is one of my brothers that pushed me, he pushed me and I went." (Tested negative during BFL, Yopougon)
"After the teaching, I understood that you shouldn't stay like that without knowing your status. Because once you do not know your status and the disease is in the organism, as time passes, the disease can worsen and destroy the entire thing, the immune system, and expose you to many diseases and make you, make you end life." (MLHIV, San Pédro)
"I wanted to see because they talked a lot, myself by doing the training there were some among us who had, eh, 'I had already, I did my HIV test 3 months, I go do it, every 3 months I go do it.' So, I said okay, this time, I won't miss it. After the training there, if there is a test to do, I will do it, it doesn't matter what result will come out, well, that is what pushed me to do my test." (MLHIV, San Pédro)
"Because the training was clear. During the training they insisted that this disease was nothing, you see. They would give us treatment, it was a disease like malaria. It was a disease like, and there are even more serious diseases than that, there, do you see?... So, eh, that allowed us to commit to going, to, to, to, to actually do the HIV test. And the medications, above all because they can't give you an HIV test without . . . because that was the problem. Once finished with the test, how do I get treatment? Do I have to pay? That's all. They told us that the medications were free, you see. So, eh, for me it was better to know my status. I went." (MLHIV, San Pédro)
"They are afraid of knowing their sero-status. They are afraid to face it. You know they created a whole mystery around that virus, a whole mystery. Generally, it is the not the virus that kills, but it is the environment that kills. Once you are seropositive, automatically you say that you are destined to die." (Did not test during BFL, Bouaké)
2.2 Treatment initiation
"The biggest thing to do there is to send him to a place like Brothers for Life to give him treatment. Above all that now we learned during the course that the medications, the treatment for AIDS is free, you see. So, they help him accept curing himself." (Tested negative during BFL, Yopougon)

"I went to the doctor to take the medications. Because they said that if you have that and you don't treat it, if it develops in your body . . . when the virus is still little, if you don't treat it, you go on treatment or if they want to put you on treatment and you refuse, if the virus develops, it leads you to death. So, when I learned all that, I said that rather than letting it develop in me, I'd rather go take the medications. Maybe it will take 10 years . . . to treat me, I will do it. That is how I returned to go take the medications. I: But was it an easy or difficult decision? P: Well, me, on my side, it wasn't a difficult decision. It was an easy decision for me and so I went." (MLHIV, San Pédro)
"I didn't put that in my head since, because it was the brother there that called me. He said that if he goes, he will call me so that I can join him in San Pédro, you see. So when he called, I didn't have the idea, I went, you see. It's there that he too, we went together, you see. He went and entrusted me to a woman there, and that's it, I follow the treatment." (MLHIV, San Pédro)
"I was received very well, they received us in a room. Me, I thought that I was the only one, there were many men who were also infected. I saw people who were beefier than me. All that raised my spirits." (MLHIV, Yopougon)
" Ah, well, when I arrived, in truth, I was scared, eh. Because in the health center there are parts of… of… of things, so I was, I asked myself not to run into someone I know, you see, who, that I know, that could maybe, that might go say that my status was like that, what did this man come to seek here?... So, eh, they took me, they took care of me, they received me well, they really gave me advice. There." (MLHIV, San Pédro)
2.3 Treatment retention
"For example, when we finished, we took the test, they told me I was infected. After, they put me on treatment, I started to follow my treatment. But because of the work that I do there, it makes it so that I am often unable to go take the medications." (MLHIV, San Pédro)
"You see, the Black man, it is even in our nature, because you'll tell yourself what? By going back there people will know that you have that. So, what will you tell yourself? Each time people will see you going and coming from the center to the house. Hmm, he even has bags of medications, you see, you see. There are many cases like that, when it touches them maybe they hide it in such a way, they aren't even able to take their medications like they should." (Did not test during BFL, Bouaké)
"This program there made it so that today I know my status. That's the first thing. And second, that is to say that myself, at a certain point, in any case I . . . when I go to work like that, at a certain point I'm cold and I don't even have the strength anymore to work. So, ever since all that happened, I started to take my medications, in any case, when I go to work even, you see, that is to say that I don't feel anything like before." (MLHIV, San Pédro)
"When my peers get together I should go there, in fact, I doubted a little, at the beginning, I doubted a little. I was a little calm because I was thinking a lot, so I was a little calm, but now, since I've started treatment, it is okay. Even the treatment has made it so that myself, in the village, what I do there, there are others who can't even do it. Because I see that it even gives me the strength to work." (MLHIV, Bouaké)
"It is isn't like the medications that you take where you go to the hospital and they prescribe and then you take it. This is long term. So it is really in that regard that it affected me a little

because I know that I have this medication, it's not just for two days, it is for a long time, a long time, it is that little aspect there that unsettled me a little. Apart from that, I was ready for everything. I was ready to do it for my health." (MLHIV, Bouaké)
3. Peer navigators' experiences in BFL
"Because on the phone it is good, but when you see the person there are a lot of things that you can notice and improve with the interviews, you see." (Peer navigator, Bouaké).
"The first difficulty is what I said at the beginning with respect to the clients: self-stigmatization. If you are able to help them overcome the self-stigmatization, to say that no one knows that you are sick except you alone. And if you don't do your treatment, people will know that you are sick because the disease will start to appear. When he understands that no one knows that he is sick. And he isn't sick, it is something new, it is something like malaria that he will treat." (Peer navigator, Yopougon)
"And so it is all that information that you collect and that allows you already, in your advice, to tell him that it is true because you see that the client already has a strength. And he, himself, doesn't know [that he has that strength] because he is defeated because he is positive. And you have to lead this client back to that natural strength that he, himself, has and that can allow him to overcome all his fears and difficulties." (Peer navigator, San Pédro)
"At the end of the program, I want to say something. During the program we had necessary information on treatment. That was from a theoretical perspective. Now, for someone who tests positive, it is another experience. That is to say, transform theory into practice, I can say that this understanding of treatment happens little by little" (Peer navigator, Yopougon)
"Yes and that increased their motivation. . . to engage in treatment. The workshop in addition to the accompaniment and also, yes. . . what is even more interesting is that they were sick people who did not know and who were in the community and the program sought them out to get them into treatment. And that is a big merit of the program, that's it." (Peer navigator, Yopougon)

[1] Bassett IV, Regan S, Chetty S, Giddy J, Uhler LM, Holst H, . . .Losina E. (2010). Who starts antiretroviral therapy in Durban, South Africa?. . . not everyone who should. *AIDS* 24 Suppl 1: S37–44. doi: 10.1097/01.aids.0000366081.91192.1c PMID: 20023438

[2] Geng EH, Bwana MB, Muyindike W, Glidden DV, Bangsberg DR, Neilands TB, . . . Martin JN. (2013). Failure to initiate antiretroviral therapy, loss to follow-up and mortality among HIV-infected patients during the pre-ART period in Uganda. *Journal of Acquired Immune Deficiency Syndromes* 63(2):e64–71. doi: 10.1097/QAI.0b013e31828af5a6 PMID: 23429504

[3] Geng EH, Nash D, Kambugu A, Zhang Y, Braitstein P, Christopoulos KA, . . . Martin JN. (2010). Retention in care among HIV-infected patients in resource-limited settings: Emerging insights and new directions. *Curr HIV/AIDS Rep* 7(4):234–244. doi: 10.1007/s11904-010-0061-5 PMID: 20820972

[4] Druyts E, Dybul M, Kanters S, Nachega J, Birungi J, Ford N, . . . Mills EJ. (2013). Male sex and the risk of mortality among individuals enrolled in antiretroviral therapy programs in Africa: A systematic review and meta-analysis. *AIDS* 27:417–425. doi: 10.1097/QAD.0b013e328359b89b PMID: 22948271

[5] Auld, AF, Shiraishi RW, Mbofana F, Couto A, Fetogang EB, El-Halabi S, . . . Ellerbrock TV.. (2014). Lower levels of antiretroviral therapy enrollment among men with HIV compared with women–12 countries, 2002-2013. *MMWR.* 64.46:1281-1286.

[6] Nyamhanga, T., Muhondwa, E., & Shayo, R. (2013). Masculine attitudes of superiority deter men from accessing antiretroviral therapy in Dar es Salaam, Tanzania. *Global Health Action,* 6:1-9.

[7] Hoffman S, Wu Y, Lahuerta M, Kulkarni SG, Nuwagaba-Biribonwoha H, El Sadr W,. . . Elui B..(2014). Advanced disease at enrollment in HIV care in four sub-Saharan African countries: Change from 2006 to 2011 and multilevel predictors in 2011. *AIDS*. 28:2429–38.

[8] Mukolo A, Villegas R, Aliyu M, & Wallston KA. (2013). Predictors of late presentation for HIV diagnosis: A literature review and suggested way forward. *AIDS and Behavior* 17;1:5-30.

[9] Bor J, Rosen S, Chimbindi N, Haber N, Herbst, K, Mutevedzi T, . . . Barnighausen T. (2015). Mass HIV treatment and sex disparities in life expectancy: Demographic surveillance in rural South Africa. *PloS Med*, 1-21.

[10] Kikaya V, Skolnik L, Garcia M, Nkonyana J, Curran K, & Ashengo, T. (2014). Voluntary medical male circumcision programs can address low HIV testing and counseling usage and ART enrollment among young men: Lessons from Lesotho. *PloS*, 1-5.

[11] Bor J, Rosen S, Chimbindi N, Haber N, Herbst, K, Mutevedzi T, . .. Barnighausen T. (2015). Mass HIV treatment and sex disparities in life expectancy: Demographic surveillance in rural South Africa. *PloS Med*, 1-21.

[12] Johns Hopkins Center for Communication Programs. "Recherche formative sur les comportements sexuels à risque chez les adultes." (2013). https://www.k4health.org/toolkits/hiv-cotedivoire/recherche-formative-sur-les-comportements-sexuels-risque-chez-les-adultes. Accessed October 29, 2018.

[13] DHS-MICS. Extrait des données EDS. "Prévalence du VIH en Côte d'Ivoire: Résultat de l'EDS-MICS 2011-2012". (2012). Available at: https://www.dhsprogram.com/pubs/pdf/HF46/HF46.pdf. Accessed October 29, 2018.

[14] Ochieng-Ooko V, Ochieng D, Sidle JE, Holdsworth M, Wools-Kaloustian K, Siika AM, . . . Braitstein P. (2010). Influence of gender on loss to follow-up in a large HIV treatment programme in western Kenya. *Bulletin of the World Health Organization.* 88;9:681-688.

[15] Zachariah R, Tayler-Smith K, Manzi M, Massaquoi M, Mwagomba B, van Griensven J, . . . Harries AD. (2011). ,l Retention and attrition during the preparation phase and after start of antiretroviral treatment in Thyolo, Malawi, and Kibera, Kenya: Implications for programmes? *Transactions of the Royal Society of Tropical Medicine and Hygiene* 105;8:421-430.

[16] Govindasamy, D, Ford N, Kranzer K. (2012). Risk factors, barriers and facilitators for linkage to antiretroviral therapy care: A systematic review. *Aids* 26;16:2059-2067.

[17] Health Communication Capacity Collaborative. (2017). *Engaging men across the HIV treatment continuum: Summary of findings from a formative qualitative study in Côte d'Ivoire*. Baltimore: Johns Hopkins Center for Communication Programs.

[18] http://www.unaids.org/en/regionscountries/countries/ctedivoire

[19] Sabapathy K, Hensen B, Varsaneux O, Floyd S, Fidler S, Hayes R (2018) The cascade of care following community-based detection of HIV in sub-Saharan Africa - A systematic review with 90-90-90 targets in sight. PLoS ONE 13(7): e0200737.https://doi.org/10.1371/journal.pone.0200737