Evaluation of the Entertainment Worker Outreach Programs in Cambodia

REVISED REPORT

HIV Innovate and Evaluate Project

Contract AID-442-C-13-00001

11 September 2017

This study is made possible by the generous support of the American People through the United States Agency for International Development (USAID) The contents of this study are the sole responsibility of the HIV Innovate and Evaluate Project and do not necessarily reflect the views of USAID or the United States Government.

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Acknowledgements

We would like to express our deep appreciation to Dr. Ly Penh Sun, Director of the National Center for HIV/AIDS Dermatology and STDs (NCHADS) for his leadership of this evaluative study. From NCHADS, Dr. Lan Vanseng, Deputy Director, Dr. Samrith Sovannarith, Chief of Technical Bureau, and Dr. Tep Samnang, Chief of Behavior Change Communication Unit, provided invaluable inputs for the study formulation to ensure that the results are relevant to the national program.

This study was made possible by the generous support of the American People through the United States Agency for International Development (USAID).

We extend sincere gratitude to FHI360 and KHANA, for their technical inputs, support, and information sharing in the development of the protocol.

We also would like to express our sincere thanks to Partners for Development (PFD), Cambodian Women for Peace and Development organization (CWPD), Phnom Srey Organization for Development (PSOD), and KHEMARA for their warm collaboration in the process of sampling and data collection. Successful data collection could not have happened without the collaboration and support from management and outreach staff of these organizations.

We also would like to also express our sincere gratitude to the Provincial health departments in Kampong Cham, Siem Reap, Banteay Meanchey, Battambang, Pursat, Kampong Thom, Preah Sihanouk, Pailin, Battambang, Kep, Kampot, Kampong Thom, Preah Vihear, and Phnom Penh as well as selected referral hospitals and health centers from these locations for their collaboration in this study, in particular for allowing their technical staff to be interviewed by our researchers.

Our field researchers were at the heart of the study's success. We would like to express our appreciation to them for their work.

Executive Summary

Background

In Cambodia, female sex workers, or entertainment workers (EW), represent the largest of Cambodia's key populations (KP) at highest risk for HIV infection, with an estimated 40,000 EW in 2014. The overall HIV prevalence among EW most recently was estimated to be 3.2% in 2016, with prevalence rates as high as 11.85% among freelance EW and 8.3% among EW with more than 2 partners daily. EW also are at increased risk for sexually transmitted infections (STIs), illicit drug use, and unmet family planning needs.

The national HIV program has implemented a multi-sectoral response tailored to EW, including the 100% Condom Use Program (CUP), which has been credited with the high (86%) consistent condom use among EW in 2016. The Boosted Continuum of Prevention, Care and Treatment (Boosted CoPCT) approach, developed by the National Center for HIV/AIDS Dermatology and STIs (NCHADS) has guided the national response, focusing on the identification and testing of KP to address the unique HIV needs for KP, including EW, with a core service package that includes: improving case detection, avoiding new infections and reducing individual risks, strengthening referrals and linkages, care and treatment, and integration of sexual reproductive health and family planning.

Under the umbrella of Boosted CoPCT since 2013, programs for EW are spread throughout Cambodia. There are three key types of EW programs. First, Centers of Excellence (Flagship COE) are directly supported by the USAID HIV Flagship Project (Flagship) and that focus on testing and implementing innovations on HIV prevention and other linkage services. Second, Flagship-Technical Assistance (Flagship TA) sites that are directly supported by the Global Fund but also receive TA from Flagship. The third type of EW program is supported by the Global Fund and receives no TA from Flagship (Non-Flagship).

No systematic impact evaluation of EW outreach programs has yet been undertaken. Information from this evaluation aims to help the national program and donors to more effectively and efficiently shape programs and deploy resources. This evaluation measured the uptake of HIV tests, condom use, STI screening and treatment, stigma and discrimination and, referrals to health services. Comparisons of outcomes across the three program types were performed. In addition, the evaluation looked at the cost-effectiveness of the program by comparing the unit costs. Perspectives of the clients regarding the quality of service delivery were also examined in this evaluation.

Findings

Data were collected from 1300 EW respondents, including 300 from the geographic areas of the Flagship CoE sites, 300 from the geographic areas of Flagship TA sites, 300 from the geographic areas of Non-Flagship sites, and 400 from geographic areas with no existing EW programs. There was a wide diversity among EW with regard to age and education. 10% of EW reported sexual violence and 41% of EW reported bullying/harassment from a client in the past 12 months, demonstrating the vulnerability faced by EW.

Employment

KTV was the dominant primary employer of EW (62%) and comparatively small proportions of EW reported their main occupations to be either freelance sex worker (3.1%) or sex worker (3.4%). Overall, about 57% of EW had incomes greater than $250 per month. Controlling for confounders, EW with higher incomes experienced significantly lower levels of stigma and discrimination, and had higher condom use than those with lower incomes. EW exhibited a high level of geographic mobility (43% of EW with less than one year living in current location) and employment mobility (52% of EW with less than one year at current work place).

Risk

57% of EW were at medium or high risk for HIV, as judged by the risk assessment index. None of the programs, however, appeared to successfully target high risk EW, with all three of the program areas predominantly reaching a low and medium risk EW (74%). Indeed, a larger proportion of EW with low risk (37%) than with high risk (28%) had a high level of exposure to the program, showing the challenges experienced in reaching highest risk EW. Only 7.5% of EW had seven or more sexual partners per week, though 82% usually had at least one sexual partner per week, indicating ongoing risk exposure.

Program Exposure

Only about half (51%) of EW in CoE geographic areas reported contact with an outreach worker in the previous 12 months. Only 34% of EW in CoE areas had contact with an outreach worker in the previous three months, a lower figure than the proportions of EW that had contact with an outreach worker in the previous three months in Flagship TA and Non-Flagship areas (37% and 43%, respectively).

The majority (52-65%) of EW in the three program areas reported that OW were their main source of information about HIV and STI services, though only 3-36% of EW said that OW were their preferred channel for this type of information. By contrast, there appeared to be strong demand for broadcast media (television and radio), which combined for 52% of responses by EW as their preferred channels for information about HIV and STI services. 22% of EW said that Facebook was their preferred communication channel, which contrasts with the underutilization of the SMARTgirl website (only 3% utilization among EW in CoE areas) and the SMARTgirl Facebook page (only 7% utilization among EW in CoE areas).

Exposure to printed education materials was suboptimal, with only four of the 20 printed materials being well recognized by the EW interviewed. Furthermore, there was no measurable impact on prevention knowledge among EW with regard to exposure to printed educational materials.

There was low utilization of SMARTgirl clubs and drop-in centers. The majority of EW (61%) in CoE areas had heard about the SMARTgirl club but only 20% had visited the SMARTgirl club in the previous six months. Less than 3% of EW in Flagship TA and Non-Flagship areas had visited a drop-in center in the previous six months. Visits to the SMARTgirl club did not correlate well with prevention knowledge, condom use, stigma/discrimination, STI screening, or HTC uptake.

Utilization of referrals was also suboptimal, with less than 10% of EW in the three program areas having been referred for family planning. Indeed, small proportions of EW were referred for STI services in the previous 12 months (13-18% in the three program geographic areas). Only 26% of highly exposed EW had been referred for STI screening/treatment in the previous 12 months.

Condoms

97% of EW reported using a condom at their last sex with a client. Among the small number of EW that did not use a condom at the last sex act with a client (37 of 1137 respondents), 38% said the main reason was that their client refused condom use. Only 7% of EW reported use of a condom at the last sex with their husband.

STI Screening & HTC

Only 44% of EW reported STI screening in the past six months, with a significantly smaller proportion of EW in non-program geographic areas receiving STI screening than EW in the three program geographic areas. 56% of EW had undergone HTC in the previous six months, again with a significantly lower proportion of EW in non-program geographic areas (46%) receiving this than EW in the three geographic areas covered by EW programs (60-67%).

Because only 7 EW reported being HIV+, no meaningful analysis regarding the effectiveness of the EW programs with regard to key HIV+ status-related outcomes (e.g. VCCT confirmation testing, identifying new cases, reducing LTFU for HIV testing confirmation, or ART enrollment and retention of HIV+ EW) could be made.

Program Impact

Controlling for confounders, the EW programs had a measurable and positive impact on STI screening/treatment, HTC, and stigma/discrimination. EW in non-program areas were less likely than EW in program areas to utilize STI screening/treatment (37% versus 44-47%), less likely to receive HTC (48% versus 59-67%), and were more likely to report high stigma/discrimination (62% versus 42-51%). These differences were statistically significant. This shows powerful evidence of the impact of the EW program. Furthermore, compared to EW with high program exposure, EW with no program exposure were less likely to receive STI screening/treatment (33% versus 62%), were less likely to receive HTC (44% versus 79%), and were more likely to experience high stigma/discrimination (60% versus 38%).

Comparing program impact across geographic areas, it appears that the Non-Flagship areas performed best among the three, with EW in these geographic areas being significantly more likely to receive HTC (any type or community-based) and STI screening/treatment than the other two geographic program areas. CoE EW programs had the overall lowest impact among the three (with the exception of STI screening/treatment where CoE performance was better than Flagship TA areas).

Cost

Program costs were much higher for CoE than for Flagship TA and Non-Flagship areas, yielding an overall higher cost per HIV test of approximately $40, compared to $21 at Flagship TA areas, and $30 at Non-Flagship areas. There was also a higher cost per HIV case detected in CoE areas of $15,426, compared to $10,979 at Flagship TA areas and $8,503 at Non-Flagship areas.

Conclusion

EW show a great diversity of demographic, work, and socioeconomic conditions. Common issues were seen with regard to geographic mobility, gender-based and domestic violence, and condom use patterns.

Uptake of HTC and STI screening/treatment fell below expectations. There was underutilization of referrals for family planning, printed materials, SMARTgirl clubs and drop-in centers, as well as social media among EW across geographic locations.

However, it was clear that exposure to the EW programs boosted HTC and STI screening/treatment and was associated with decreased stigma and discrimination. The highest EW program impact was seen in Non-Flagship locations. Compared to CoE and Flagship TA areas, Non-Flagship areas had the lowest cost per HIV infection detected.

Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
AusAIDS	Australian Agency for International Development
CoPCT	Boosted Continuum of Prevention to Care and Treatment
CBHTC	Community-Based HIV Testing and Counseling
CBPCS	Community-Based Prevention, Care and Support
CCC	Country Coordinating Committee
CoE	Center of Excellence
CUP	Condom Use Program
CWPD	Cambodian Women for Peace and Development
DIC	Drop-In-Center
EW	Entertainment Workers
FHI	Family Health International
FP	Family Planning
GF	Global Fund
GFATM	Global Fund for AIDS, TB and Malaria
HEF	Health Equity Fund
HIEP	HIV Innovate and Evaluate Project
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counseling
ICT	Information and communication technology
IEC	Information, education and communication
KHANA	Khmer HIV/AIDS NGO Alliance
KP	Key Population
LTFU	Loss to follow up
NCHADS	National Center for HIV/AIDS, Dermatology and STI
NECHR	National Ethic Committee for Health Research
NGO	Non-governmental organization
NTA	None Technical Assistance
OD	Operational District
OW	Outreach Workers
PFD	Partners for Development
PRASIT	Project for HIV and AIDS Strategic Technical Assistance
Pre-ART	Prior to Anti-Retroviral Therapy
PSOD	Phnom Srey Organization for Development
PWID	People Who Inject Drug
Q	Quantity
RDS	Respondent Driven Sampling
SBC	Strategic Behavioral Communication
SIT	Save Incapacity Teenagers
SOP	Standard Operating Procedure
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
TA	Technical assistance
TB	Tuberculosis
UC	Unit Cost
UIC	Unique Identification Card
UNAIDS	United Nations Agency for HIV/AIDS
URC	University Research Co., LLC
USAID	United State Agency for International Development
VCCT	Voluntary and Confidential Counselling and Testing
WHO	World Health Organization

1. Introduction

Among the key populations (KP) at risk for HIV infection in Cambodia, female sex workers, or "entertainment workers" (EW), is the most populous.[1] The latest population estimates showed that there were approximately 40,000 entertainment workers in 2014, and the majority of them lived in Phnom Penh (59%), followed by Siem Reap (9%), Battambang (6%), and Banteay Meanchey (4%) (WHO, 2013). EW can be categorized into sub-groups corresponding to their locations of work, including karaoke establishments, massage parlors, bars, beer gardens, and freelance (street based and non-street based) (NCHADS, 2013).

A decline in HIV prevalence among EW was recorded in Cambodia between 1998 and 2013 with prevalence in EW decreasing from 46% to 10-14% among high risk EW (WHO, 2013). The latest Cambodia Female Entertainment Workers Integrated HIV Bio-Behavioral Surveillance reported a 3.2% overall HIV prevalence among EW (FEWIBBS, 2016). The HIV prevalence among EW varied based on type of EW: those who freelance had an 11.85% HIV prevalence rate, while the prevalence rate among EW who work as beer promoters and at karaoke/massage parlors were 2.4% and 1.6%, respectively. EW with more than 2 partners daily had an 8.3% HIV prevalence (FEW IBBS-2016).

Given the diverse characteristics and HIV prevalence rates among EW, the national HIV program implemented a multi-sectoral response to the concentrated HIV epidemic including a range of interventions tailored to EW. One key intervention was the 100% Condom Use Program (CUP) whereby transactional sex establishments in 24 provinces were required to implement the CUP since the year 2000. The aim of the CUP was to prevent heterosexual HIV transmission linked to sex work ensuring that condoms are used 100% of the time, in 100% risky relationship in 100% sex entertainment establishments (WHO, 2004). The program has been highly successful, with 86% consistent condom use among EW in 2016, and 92% condom use among EW who engaged in paid sex in last sexual intercourse (FEWIBBS, 2016).

The national response against HIV in Cambodia for EW is centered on the Boosted Continuum of Prevention, Care and Treatment (Boosted CoPCT) approach, developed by the National Center for HIV/AIDS Dermatology and STIs in 2013 (NCHADS). This approach focuses on identifying and testing KP to address the unique HIV needs for KP, including EW, with a core service package that includes: improving case detection, avoiding new infections and reducing individual risks, strengthening referrals and linkages, improving care and treatment and, integration of sexual reproductive health and family planning (NCHADS, 2013).

Boosted CoPCT is a key component of Boosted Integrated Active Case Management (B-IACM), the cornerstone of the Cambodia national HIV program to achieve its targets by 2020 of 1) 90% of people living with HIV (PLHIV) knowing their HIV status, 2) 90% of those diagnosed being on treatment, and 3) 90% of PLHIV on treatment achieving viral suppression. B-IACM is a client-oriented approach designed to provide support to individuals to receive HIV services across the HIV service cascade, with the goal of decreasing losses to follow up along the HIV care cascade in Cambodia. The implementation of B-IACM is operationalized through the Identify Reach, Intensify and Retain (IRIR) mechanism where B-IACM focuses on identifying and reaching all old and new infections and in intensifying efforts to ensure cases are brought into the HIV cascade to receive immediate ARV treatment while retaining all PLHIV on treatment and achieving viral suppression (NCHADS, 2017).

In alignment with the national program to improve HIV services for EW, the US Agency for International Development (USAID) HIV/AIDS Flagship Project implemented the SMARTgirl program in Cambodia from 2013-2017 with a goal of increasing HIV testing and counseling (HTC), STI screening/treatment, condom use, and strengthening STI referrals for EW.

[1] The term "sex worker" refers to "individuals who receive money or goods in exchange for sex services, and who consciously define those activities as income generating even if they do not consider sex work as their occupation". After the 2008 outlaw of sex work and brothels in Cambodia, a local definition of "sex work" has been replaced with the term "entertainment worker" (EW), describing "individual women employed in the entertainment sectors in restaurants, massage parlor etc. regardless of their possible involvement in direct or indirect sex work"(ILO, 2011).

Key Issues for Entertainment Workers

HIV testing and counseling (HTC) is a key intervention to identify EW that may be living with HIV and provide them with services to avert ongoing transmission of HIV. Early diagnosis of HIV is an effective measure in the fight against the epidemic when EW with self-perceived risk for HIV initiate frequent HIV testing and adopt safe sex practices with their partners (Parriault, 2015; NCHADS, 2013). In 2016, 72% of Cambodian EW reported having been tested for HIV in the previous 12 months, which may indicate high self-perceived risk for HIV in this group (FEWIBBS, 2016). Reasons of not taking an HIV test among EW at health facilities and community-based locations included discrimination by health providers, sexual harassment by health providers, neglected by health providers, not trusting the capacity of outreach workers in keeping confidentiality (HIEP, 2015b).

The effect of STIs in increasing HIV infection is well documented and individuals who are infected with sexual transmitted diseases are two to five time more likely to get infected with HIV if they exposed to the virus (CDC, 2010; Feng, 2010; Ward, 2010). In Cambodia, the STI prevalence rates among EW have fallen in recent years, but remain high compared to the general population: Syphilis fell from 14% to 4%, and chlamydia prevalence declined from 23% to 13% (Heng, 2008). STIs are the major causes of reproductive morbidity and mortality due to frequent exposure to unsafe sex practice, particularly for sex workers characterized by a high number of sexual partners and poor health seeking behavior (Plummer, 1991; Thomas & Tucker, 1996).

Illicit substance use is a major issue among sex workers, with one study from Canada showing that cumulative HIV incidence among injecting drug users who engaged in sex work was 12% compared to non IDU (7%) (Kerr, 2016). The 2016 FEWIBBS examined overlapping vulnerabilities between sex work and illicit substance use, finding that the prevalence of use of drugs such as Amphetamine, Yama and Ice is about 10% among EW, and 1.3% of EW use injected drugs (FEWIBBS-2016).

EW also often have unmet family planning needs. According to the recent national FEWIBBS, 40% of EW experienced at least one pregnancy while working as EW and one third had at least one abortion. However, 73% of EW used any method of family planning, and of those, the majority (37%) used condoms as a primary form of contraception, with 14% of EW using the contraceptive pills as the second main method (FEWIBBS, 2016). Another study conducted by HIEP in 2015 showed that EW reporting that limited family planning services nearby their homes and lack of affordable services were predictors of unwanted pregnancy (HIEP, 2015a).

1.1. EW Outreach Program Description

Across Cambodia, EW outreach programs have taken different forms. The three key forms can be summarized as: 1) Flagship- Centers of Excellence (Flagship COE), 2) Flagship-Technical Assistance sites where Global Fund sites received TA from Flagship (Flagship TA), and 3) Non-Flagship sites, which are Global Fund sites with no TA from Flagship (Non-Flagship). Table 1 describes the geographic distribution of these program types, as well as the NGOs that support their implementation.

Table 1 EW HIV program coverage

Province	NGO	OD	Flagship SMARTgirl CoE sites	Flagship TA sites/GFATM sites	Non-Flagship sites
Banteay Meanchey	PFD	Mongkol Borei		577	
		Poi Pet		1,102	
Battambang	CWPD	Battambang		1,739	
		Sampeu Loun		181	
Kampong Cham	PSOD	Kampong Cham	640		
Kampong Chhnang	CWPD	Kampong Chhnang			377
Kampong Speu	CWPD	Kampong Speu			385
Kampong Thom	CWPD	Kampong Thom			500
Kampot	CWPD	Kampong Bay			216
Kandal	CWPD	Takhmao			773
Koh Kong	CWPD	Smach Meanchey			359
Kratie	CWPD	Kratie			196
Mondolkiri	KHEMARA	Mondulkiri			367
Oddormeanchey	CWPD	SOMRONG			251
Pailin	CWPD	Pailin			367
Phnom Penh	CWPD	Chaktomuk	1,150	4,685	
		Basak		704	
	KHEMARA	Dangkor		385	
		Sen Sok		125	
		Mekong		1,036	
		Porsenchey		1,967	
	SIT	Mekong		2,998	
Preah Sihanouk	KHEMARA	Preah Sihanouk			477
Preah Vihear	CWPD	Preah Vihear			281
Prey Veng	KHEMARA	Neak Loeung			237
		Svay Antor			75
Pursat	PFD	Sampov Meas		373	
Ratanakiri	KHEMARA	Banlung			533
Siem Reap	CWPD	Siem Reap	2,379		
Stung Treng	CWPD	Stung Treng			204
Takeo	CWPD	Daun Keo			317
Tboung Khmum	CWPD	Tboung Khmum			220
Total			**4,169**	**22,007**	**26,176**

Source: KHANA, 2016

1.2. SMARTgirl Program Description

Flagship COE sites implement a program called "SMARTgirl". Under the PRASIT Project, FHI 360 Cambodia and its partners introduced the SMARTgirl HIV prevention and care program in October 2008. SMARTgirl aimed to improve the sexual health and general well-being of EW through an innovative, holistic, human rights-based, branded sexual health program. The SMARTgirl program activities included the delivery of core services through individual and group level outreach conducted at a variety of venues where EW work (USAID, 2014).

Subsequently, the USAID HIV Flagship Project (Flagship) has worked on testing and implementing innovations on HIV prevention and other linkage services for EW from 2013-2017. The goal of the renewed SMARTgirl program was to reduce HIV incidence among EW in Cambodia. The project was funded by USAID and focused on technical assistance and piloting innovations in HIV prevention, care, support, and treatment. The Flagship project worked through Centers of Excellence (CoE) to test new approaches to reduce HIV incidence among EW in three cities: Phnom Penh, Siem Reap and Kompong Cham, in collaboration with USAID implementing partners and with two local organizations that focused in providing services for EW: Cambodian Women for Peace and Development organization (CWPD) and Phnom Srey Organization for Development (PSOD). The CoE sites are hosted within operational districts with high burdens of HIV, in order to build the capacity of staff at public health facilities to develop and test high impact and cost-effective technical innovations.

Around the same time, in 2013, the Boosted CoPCT standard operating procedure (SOP) was developed by NCHADS, which focused on identifying and testing KP to address their particular HIV service needs (NCHADS, 2013). In Boosted CoPCT, a guidance note was developed to direct the implementation of this SOP for EW, particularly ensuring the implementation of the core and expanded package of services. The core service package includes: improving case detection, avoiding new infections and reducing individual risks, strengthening referrals and linkages, care and treatment and, integration of sexual reproductive health and family planning. Flagship has incorporated the Boosted CoPCT into the innovations, and has worked closely with the CoE to modify, innovate, and test interventions for the HIV program using outreach (individual or group-level contacts with EW), SMARTgirl clubs and technology-based mediums (website, Facebook and voice4U).

Under the Flagship project, there were 4,200 EW covered by the project at the start of implementation in 2013 (USAID, 2013; 2014), and 8,731[2] EW had been reached by the end of 2016. The two key direct implementers of the Flagship program, CWPD and PSOD provided the following core interventions:

A. Improving case detection:

- *Strategic behavior communication (SBC):* HIV awareness is mainly delivered via trained outreach workers (OW) in hotspots, entertainment establishments, private homes, public parks, and through the SMARTgirl club (see below). Under the branded "SMARTgirl" program, key messages were consulted with EW before the SBC materials were produced and OW were trained on the use of the printed materials before conducting education sessions.
- *Community-based HIV testing and counselling (CBHTC)* is one of the major components of the SMARTgirl program in which EW could opt for testing at either in the SMARTgirl club or via outreach. The suggested screening test interval for HIV was biannually and quarterly for STI using a referral card. Prior to CBHTC, EW were screened for their risk levels using the interactive tablet-based risk-screening tool in certain locations.

- *Sexually transmitted infections (STI) screening:* The STI screening test for syphilis was performed by trained OW using finger prick, while the syndromic management and other STI check-up was provided through the NGO's referral system to government or NGO health facilities.

B. Avoiding new infections and reducing HIV risk:

[2] This figure was provided by Flagship

- *Condoms and lubricants* were made available for KP in hotspots, entertainment establishments and in the SMARTgirl clubs as guided by the national HIV prevention guidelines. A sample pack of condoms and lubricants was given to EW for free at the initial contact and then condoms and lubricants were promoted through peer-to-peer sale and outreach, street-based sellers near high-risk venues and through condom vending machine to ensure sustainability of condom access.

C. Strengthening referrals and linkages:

- *Active referral and linkages to health and non-health services*: EW were provided with linkages to HIV and STI testing, reproductive health services, TB diagnostic workup, antiretroviral therapy, vocational training, legal support services (including gender-based violence) and psychological services. Every month, the OW visited health facilities to collect referral cards in order to monitor the service utilization of EW. mHealth innovations (an interactive voice response system, websites, Facebook pages, and phone applications) were introduced with the purpose to link EW to all relevant services.

- *SMARTgirl club:* Provided a secured and safe space for gathering and one-stop-shop services for HIV and STI information, screening and referrals for EW. At the club, EW were provided with SBC sessions and materials, referral supports to VCCT and STI services, edutainment, HIV screening (using finger prick testing), vocational training, as well as free condoms and lubricants as well as social marketing in selling condoms.

D. Care and Treatment:

- *Case management* is embedded into the referral support for HIV positive EW who needed support for pre- and post- ART enrolment and preferred to be under the care cascade of the CoE.

E. Integration of Sexual Reproductive Health and Family Planning:

- EW were also supported with family planning whereby unmet family planning need screening, informed choice counseling, and referrals for methods were readily available at the SMARTgirl club through outreach activities and it was actively delivered through trained staff and OW.

1.3. Flagship-TA GFATM Program Description

While SMARTgirl innovations were tested in the three Flagship-supported CoE sites, four NGOs (CWPD, Partner for Development (PFD), KHEMARA and Save Incapacity Teenage (SIT)) received technical assistance from Flagship to implement the EW outreach program in four provinces: Banteay Meanchey, Battambang, Phnom Penh and Pursat. Those NGOs were supported by Global Fund in Cambodia through KHANA. Implementing NGOs provided activities to targeted groups using two mechanisms: drop-in-centers (DIC) and outreach work. The service package included a minimum HIV service package, such as HIV education sessions, free condom distribution or demonstration, HIV and syphilis testing through finger prick and referral to health services. (KHANA, 2016a).

For implementing NGOs under the GFATM, the technical assistance from Flagship enabled them to implement the OW program (non-SMARTgirl service package or a generic HIV prevention program for EW) with key strategies listed below to provide core services under the leadership of KHANA. Since 2008, the SMARTgirl and the generic EW programs have made the core services available to about 22,000 EW through outreach, condom provision, HTC and referrals (to family planning service, HIV confirmatory tests, STI care and treatment, ART, TB and others) (KHANA, 2016b).

A. Strategy 1: Identify pockets of populations with high and overlapping risk and vulnerability who are not yet in contact for the interventions.

- *Assessing risk level:* EW are encouraged to assess their HIV risks at least twice a year by using paper-based risk screening tool under the support of OW and staff.

- *Identifying hard-to-reach key populations:* Using the networks of EW and routine outreach activity, OW and staff conducted visits to settings where EW normally gather at appropriate time and locations.

B. Strategy 2: Reach and provide services to EW

- *Assigning UIC code for EW:* EW were assigned UIC codes, then provided UIC cards for health services. The UIC cards link EW to relevant health services without fear of discrimination as their names and KP statuses were not disclosed publicly. The NGOs used UIC cards to monitor the types of services utilized by EW.
- *Conducting education sessions:* OW provided HIV prevention education in their respective areas in either one-to-one or group education sessions. Using the traditional approach to HIV prevention, OW used the generic version of information, education and communication (IEC) materials to educate EW during the education session. During the session, OW also provided condom education and distributed condoms. Meanwhile, increasing gender-sensitive approach is integrated at the outreach activity level to ensure that barriers to services are minimal if EW prefer to use all health services.
- *Conducting bi-monthly meetings with EW:* Issues affecting the program were solicited from EW advocates through regular discussion forum every other month. Suggestions from EW were often taken to high-level meetings by the NGOs.
- *Building HTC skills of lay counsellors:* Under the assistance from the CoE, in partnership with Flagship and the national HTC focal points, the non-CoE sites provided annual HTC training to selected OW in order to officially qualify them to be lay counselors to provide community-based finger prick testing for HIV and syphilis to their respective peers.

C. Strategy 3: Intensify interventions and services for maximum impact

- *Performing/mobilizing support for HIV finger prick testing of EW:* Trained OW and lay counsellors provided finger prick HIV testing in accordance to the national standard for HIV testing and counselling, including HIV education, pre-and post-test counselling and appropriate links to confirmatory tests at health facilities (for the reactive tests).
- *Maintaining HIV service linkage:* OW and NGO staff offered referral supports to EW for HIV and STI services (including HIV confirmatory test and Pre-ART/ART enrolment for HIV positive cases). The linkage service initiated were tracked via UIC for service utilization.
- *Maintaining DIC for EW:* All core services were maintained in the drop-in-center. The services included HIV and other health educations, HIV and syphilis finger prick tests, free condoms and lubricants and a private space for relaxation as well as socialization with other peers.

D. Strategy 4: Retain EW in services for maximum impact and improved health outcomes

- *Advocating for ID poor:* OW and NGO staff worked with health facility and Health Equity Fund (HEF) operators to ensure that eligible EW got ID poor card and were enrolled into HEF. Other enabling environment activities for EW were also implemented by the NGOs such as meeting forums, campaigns and other events.

1.4. Non- Flagship GFATM Program Description

Non- Flagship GFATM EW Programs follow the guidelines set out under Boosted COPCT to provide services. Indeed, the bulk of services was similar to those provided by the Flagship CoE and Flagship-TA sites, with some notable exceptions. The various key services provided by each of the three program types is summarized in Table 2.

Table 2 Core services of Flagship CoE, Flagship TA sites, and Non-Flagship sites

Services Provided	Implementation period (2015-2016)			Remark
	Flagship CoE	Flagship TA	Non-Flagship	
I. Service delivery from NGOs to beneficiaries				
9.1. **Improving case detection**				
Education prevention message (HIV and others related health contents)	X	X	X	
Risk screening: paper-based		X	?	
Risk screening: tablet-based	X	X		
STI screening or syndromic management at the club				
Finger prick testing and counselling: HIV/syphilis	X	X	X	
Working with key informants (Mekars) and beauty salons to reach unreached/hard-to-reach KPs	X	X	X	Non-CoE: Mainly Mekars help facilitate communication between OW and EW for HTC and outreach
1.2. Avoiding new infections and reducing HIV risk				
Condom and lubricant availability: free (only demo)	X	X	X	
Condom and lubricant availability: sale	X			Non-CoE: only happened until 2014
1.3. Strengthening referrals and linkages				
1.3.1. Referral to health services				
Providing referral support to EW for STI services (STDs other than HIV/syphilis)		X	X	
Integrating case management initiative among EW who need confirmatory test and enrollment for relevant treatment services	X	X	X	
Syphilis: If negative result, making appointment for the next test in a 3-month period. IF positive result, following-up the treatment	X	X	X	
HIV: Supporting enrollment at pre-ART for HIV positive cases	X	X	X	
1.4. Care and treatment support				
Following-up visit during 12 months (i.e. treatment adherence, OIs)	X	X	X	
1.5. Integration of SRH and FP				
Supporting EW to access contraception/FP at health facility, family health clinics, and NGO clinics	X	X	X	
1.6. SMARTgirl Club				
Supporting SMARTgirl club for EW to provide safe space for informal group discussions, information/education, counseling, HIV testing, referrals for HIV, SRH, and TB services, and IEC materials	X	X		
II. Non-service delivery: program components				
2.1. Improving case detection				
Training and routine coaching: SBC and finger prick testing	X	X	X	
2.2. Avoiding new infections and reducing HIV risk				
Condom and lubricant social marketing: maintaining a functional peer sale structure, street vendors, and vending machines in hotspots	X	X	X	Non-CoE-TA: Limited to relevant staff and OW joining Social marketing training; implementation of these activities at Flagship-TA and non-TA sites is non-existent.

Table 2 Core services of Flagship CoE, Flagship TA sites, and Non-Flagship sites (Continued)

Services Provided	Implementation period (2015-2016)			Remark
	Flagship CoE	Flagship TA	Non-Flagship	
Non-condom and lubricant social marketing: maintaining correct messages, demonstration, and free distribution (only demo)	X	X	X	
2.3. Strengthening referrals and linkages				
2.3.1. Referral to health services				
Maintaining health linkage services: meeting, capacity building and joint monitoring visit with service providers	X			
Integrating other innovative approaches: Mekars (sex brokers), risk tracing snowball, mHealth (Website, Facebook and Voice4U, active case management, partner tracing and community mobilization, coordination and leadership (i.e. networking, training), staff and outreach workers that wear unique uniforms	X	X	X	* Uniform is used among TA sites but not for non-TA sites. * CoE: PDI is not implemented yet. And risk tracing snowball is implemented at Chhouk Sar Clinic 1 & 2 only.
2.3.2. Non-health services				
Reducing stigma and discrimination: meeting, event, campaigns and capacity building	X			
Supporting SMARTgirl club (or DIC) for EW to provide safe space for informal group discussions, information/education, counseling, HIV testing, referrals for HIV, SRH, and TB services, and IEC materials	X	X	X	
2.4. Care and treatment support				
Linking HIV positive cases to community and home based care services	X	X	X	
Ensuring quality of treatment in all ARV sites through meeting	X	X	X	
Reducing stigma and discrimination at hospital and community settings: meeting	X	X	X	
Advocating for ID poor	X	X	X	
2.5. Integration of SRH and FP				
Conducting training to FP/HIV counselors, sale officers, FP government providers on Integration of SRH and FP	X	X		Non-CoE-TA: Only field staff from TA sites participate in the training.
2.6. SMARTgirl Club				
Providing TA on SMARTgirl brand to CoE and non-CoE	X	X		Non-CoE-TA: TA includes training on SBC, HTC, social condom marketing, FP, case management

1.5. Comparison of the Flagship CoE SMARTgirl Program with Flagship-TA EW programs

While table 2 describes the overall program descriptions, eight EW outreach sites were surveyed as part of the background work for this evaluation, including 3 CoE sites, 3 Flagship TA sites, and 2 Non-Flagship sites. See Table 3. There was a wide diversity of activities that reportedly were conducted at these locations, and the start dates of these activities also varied among program site types, as well as among sites. It was, observed, however, that CoE sites generally offered a wider range of activities and innovations.

Table 3 Timing of initiation of key services at selected CoE, Flagship TA, and Non-Flagship sites

Innovation/Activity	Flagship CoE			Flagship TA			Non-Flagship	
	Chaktomuk	Kampong Cham/Kampong Siem	Siem Reap	Battambang	Sery Sophoan	Sampov Meas	Kampong Thum	Preah Sihanouk
mHealth	2015	2015	2015	2016	2015	2016	2015	2016
HTC by using finger prick for HIV/STI test	2012	2013	2013	2016	2015		2013	2016
UIC	2014	2014	2014	2015	2015	2014	2014	2015
IEC materials		2013	2014	2016				2015
Mekar			2014	2008				
Tablet-based risk screening		2016	2015	2016				
Case management		2013	2015	2015		2015		
Social Marketing		2013	2013					
Case profile			2015		2016	2015		
Club			2014					
Family Planning			2014	2008				
SBC			2013				2009	
DHIS2	2012		2014					
GIS Mapping		2013						2016

2. Rationale and Scope

No systematic impact evaluation of the SMARTgirl or the other outreach programs for EW have been undertaken. Information from such investigations will help the national program, as well as donors to more effectively and efficiently shape programs and deploy resources. This evaluation measured the uptake of HIV tests, condom use, STI screening and treatment, and referrals to health services. CoE sites that provided HIV programs for EW under USAID HIV Flagship project, Non-Flagship sites under the Global Fund project through KHANA, and locations without EW intervention program were covered in this evaluation in order to inform the national HIV program. Comparisons of outcomes across these location types were performed. In addition, the evaluation looked at the cost-effectiveness of the program by comparing the unit costs of related outcomes between the Flagship and Non-Flagship sites. Perspectives of the clients regarding the quality of service deliveries was also examined in this evaluation.

3. Evaluation Questions

The key questions that guided this evaluation were:

1. What was the impact of the SMARTgirl programs for EW, and how did the impact compare among Flagship CoE, Flagship-TA and Non-Flagship programs, on the uptake of HIV tests, condom use, STI screening and treatment, and referrals to health services?
2. What were the experiences of EWs exposed to these different programs in terms of:
    a. intensity of exposure (frequency of services),
    b. types of services/products/other benefits received (HTC, STI screening and treatment, condoms, and referrals to health services),
    c. quality of services received and,
    d. exposure to, and benefits gained from, SMARTgirl SBC material and social media?
3. What was the reach of the three different program types among non-venue based EW (hard-to-reach/hidden) and what was the success in HTC uptake?
4. What was the cost-effectiveness of the SMARTgirl program implemented through the Flagship CoE compared to Flagship-TA SMARTgirl programs and Non-Flagship EW programs?

4. Evaluation Objectives

The overall objective of this evaluation was to evaluate the impact and cost effectiveness of the SMARTgirl program as implemented through the USAID Flagship project. The ultimate and immediate objectives are illustrated below:

- *Ultimate objective*

The ultimate objective of this evaluation was to provide rigorous evidence regarding the effects of the SMARTgirl program. The evaluation aimed to provide an accurate understanding of the program outcomes to inform the national HIV prevention program in planning, scale up and policy options of the SMARTgirl program in the Cambodia.

- *Immediate objectives*

The specific objectives of this evaluation were:

a. To measure the effects of SMARTgirl program on the uptake of HIV tests, condom use, STI screening and treatment, and referral to health services.
b. To describe the service utilization among EW and their perspectives regarding the attractiveness of and satisfaction in the SMARTgirl program (including SBC materials, social media, HTC services, STI screening and treatment, and referrals to health services).
c. To examine the effectiveness of the SBC material, ICT and condom distribution on knowledge and behavior regarding HIV prevention and utilization of health services.
d. To examine the effects of SMARTgirl in reducing stigma and discrimination and barriers to services.
e. To evaluate the ability of the SMARTgirl program in reaching and providing services to hard-to-reach/hidden EWs; and
f. To estimate the cost-effectiveness of the SMARTgirl program implemented through Flagship CoE compared to Flagship TA SMARTgirl programs and Non-Flagship EW programs.

5. Evaluation Design

Given the absence of baseline data for the control and intervention groups before the inception of the program, a Static Group Comparison or Posttest-Only with Nonequivalent Groups (a quasi-experimental design), was the most appropriate to address the evaluation questions. In this design, the intervention group was measured and compared to a control group. The SMARTgirl CoE implementation sites under the USAID HIV Flagship project and Global Fund supported sites through KHANA (Flagship-TA and Non-Flagship sites) were treated as intervention group. The control group included the locations without EW intervention programs. See figure 1.

Given the non-randomization of the subjects to the intervention or control group, there were potential threats to internal validity with this type of design. Differences in outcomes such as uptake of HIV tests, condom use, and STI screening, might be attributed to the differences in the characteristics of the entertainment workers in the control group and intervention. Therefore, econometric methods were applied to control confounding variables and isolate the effect of the HIV program in EW. In order words, the impact of the SMARTgirl program for EW were identified as the differences in the above described outcomes between intervention and control groups.

The levels of exposure to the SMARTgirl program might have had different effects on outcomes of interest. For example, the probability of HIV test uptake among EW exposed to only outreach workers might be lower than those EW reached by outreach workers, social media and via printed education materials. For this scenario, a within-group comparison, e.g. CoE versus Flagship TA, was made and other extraneous variables were controlled by econometric methods. Also, a program exposure index was constructed and categorized into different levels of exposure. Then comparison between those levels was made.

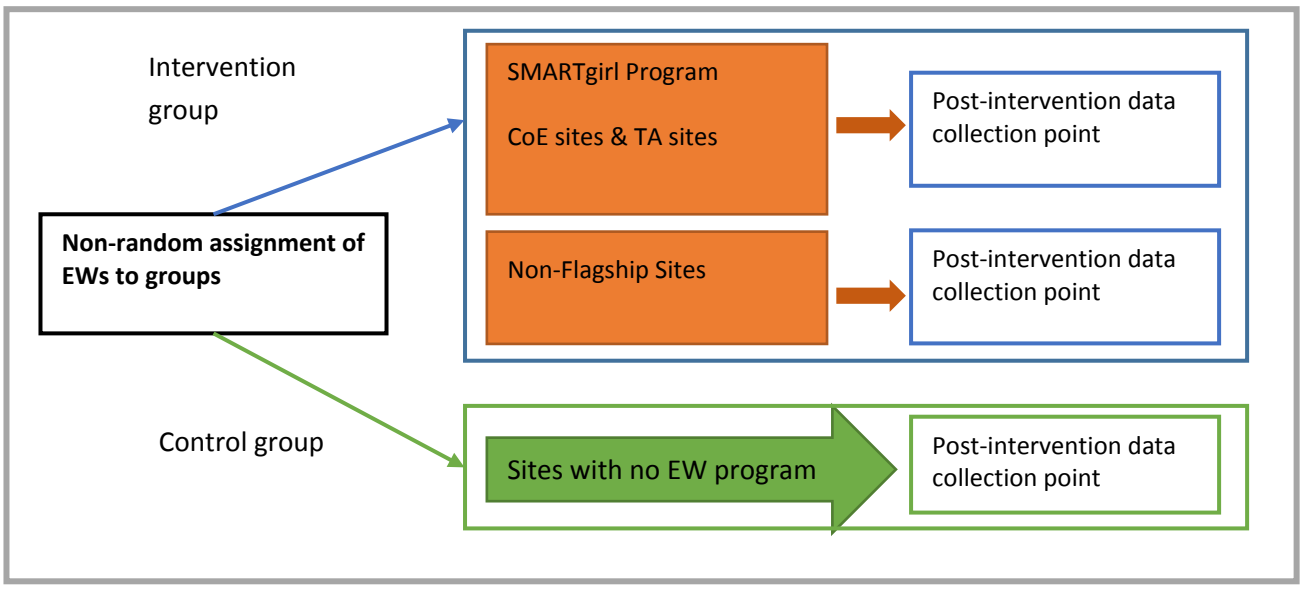


Figure 1 *Posttest-only with nonequivalent groups*

Cost allocation was included in this comparative study in order to estimate cost-effectiveness, as determined by the unit costs of the innovation program (CoE) relative to the unit costs of the program implemented in non-CoE locations. The unit costs included the costs per HIV test and cost per new HIV case identified. Cost allocation exercise included the process of identifying, aggregating, and assigning costs to activities. This study design was retrospective in nature, leveraging data from past financial records, budgets, invoices, inventories, contracts, etc.

6. Method of Evaluation

6.1. Method of Data Collection from EW

A cross sectional survey using structured interviews was conducted with EW in the coverage of Flagship CoE under the USAID HIV Flagship project, Flagship TA areas under Global Fund, Non-Flagship Global Fund areas, and areas with no known EW intervention program. Retrospective data regarding behavior and perception of EW about the service delivery was collected.

6.2. Reference Period of Costing Data Collection

The costing data were collected from the reference period of 01 October 2015 to 30 September 2016. This period was a reference period for the comparison of costs per unit between Flagship CoE, Flagship TA, and Non-Flagship areas. Program data regarding the number of HIV tests and HIV positive yield from the period above was used to compute unit cost using cost allocation.

7. Sampling Procedures

7.1. Sample Size

Key related variables from the evaluation of SMARTgirl family planning and HIV integration project in 2015 were available to perform comparisons between CoE and non-CoE areas. These variables were used to provide basic understanding regarding sample size requirement for this evaluation. Percentage distribution of these variables for CoE and non-CoE areas is illustrated in Table 4.

Table 4 Percentage distribution of key related variables for sample size computation

No.	Variable	Non-CoE	CoE
1	Had HIV test in the past 12 months	83%	85%
2	Had STI screening in the past 12 months	53%	55%
3	Always use condom with boyfriend	36%	33%
4	Always use condom with clients	33%	24%

The results of computation of sample size using the ***power twoproportions*** command in STATA are demonstrated in Table 5, using Pearson's chi-squared test.

Table 5 Estimated sample sizes for a two-sample proportions test

No.	Variable	P1	P2	δ	α	1 – β	Est. N
1	Had HIV test in the past 12 months	0.8300	0.8500	0.0200	0.0500	0.8000	10548
2	Had STI screening in the past 12 months	0.5300	0.5500	0.0200	0.0500	0.8000	19496
3	Always use condom with boyfriend	0.3600	0.3300	-0.0300	0.0500	0.8000	7882
4	Always use condom with clients	0.3300	0.2400	-0.0900	0.0500	0.8000	788

p2: proportion for corresponding variable for CoE; p1: proportion of corresponding variable for Non-CoE; N: estimated total sample size; n= estimated sample size per group; alpha (α): significance level; β: type II error probability; 1 – β: power; delta (δ): effect size; Null hypothesis (Ho): p2 = p1 versus Alternative hypothesis (Ha): p2! = p1 using Pearson's chi-squared test

The computation of sample size corresponding to the difference of key variables between CoE and non-CoE provided some options for the determination of appropriate sample size for this evaluation. Given the timeframe and anticipated complexities of recruiting subjects for this study as well as the available resources, the estimated sample size for this evaluation was 788.
This estimate was based on the formula for simple random sampling. Since respondent-driven sampling strategy was used to recruit sample for this evaluation, this sample size needed to be adjusted for variance. In theory, the distribution of estimates from respondent-driven sampling is more variable than the estimates from simple random sampling. It was adjusted by multiplying with a design effect. For the context of this study, the design effect was set at 1.5. The sample size based on the above estimation was 1,182. However, the final sample size was increased to 1,300 EW in order that statistical assumptions in statistical analysis techniques could be ensured. The above sample size was allocated to 300 EW for Flagship CoE areas, 300 EW for Flagship TA areas, 300 EW for Non-Flagship areas, and 400 for areas without any intervention program for EW (See Table 6). This allocation was to ensure that number of observations would be sufficient for comparison between these three locations, and the application of advanced statistical model or econometric methods to measure the program impact.

Table 6 Actual sample size

Province	IP	OD	GF	Flagship	Total	Intervention	Sample Size
			# EW	# EW	# EW		
Phnom Penh	CWPD	Chaktomuk	4,685	1,150	5,835	Flagship CoE	100
Kampong Cham	PSOD	Kampong Cham	-	640	640	Flagship CoE	100
Siem Reap	CWPD	Siem Reap		2,379	2,379	Flagship CoE	100
Banteay Meanchey	PFD	Poi Pet	1,102	-	1,102	Flagship TA	100
Battambang	CWPD	Battambang	1,739	-	1,739	Flagship TA	100
Pursat	PFD	Sampov Meas	373	-	373	Flagship TA	100
Kampong Thom	CWPD	Kampong Thom	500	-	500	Non-Flagship	100
Preah Sihanouk	KHEMARA	Preah Sihanouk	477		477	Non-Flagship	100
Pailin	CWPD	Pailin	367		367	Non-Flagship	100
Battambang	-	Moung	-	-	150	No program	66
Kep	-	Kep	-	-	192	No program	126
Kampot	-	Kampong Trach	-	-	50	No program	25
Kampong Thom	-	Baray	-	-	100	No program	70
	-	Stoung	-	-	75	No program	57
Preah Vihear	-	Sra Em	-	-	76	No program	56
Total			**9,243**	**4,169**	**14,055**		**1300**

The intent of this sample size computation was to ensure sufficient sample size for the comparison of outcomes between groups, but not to generalize to the whole population. The statistical analysis was not limited to the comparison of proportions between groups. More advanced statistical modeling was used to control some potential confounders. But there was no specific formula to calculate sample size for each statistical model. Based on rules of thumb, sample size requirement for each statistical modeling was a function of the predictors in the model. The more predictor variables in the model, the larger sample size was required to allow for variation. The number of observations for each predictor variable was required to have at least 10 to 15 cases in order that variance across variables in the model could be ensured. These rules, however, oversimplified the issues of sample size requirement. In fact, the sample size required depended on the effect size (how well the predictors predicted the outcome), how much statistical power (the probability that it would reject a false null hypothesis) we wanted to detect these effects, and what we were testing (the significance of the coefficients or the significance of the model overall). Theoretically, the minimum sample size required to achieve a high level of statistical power (.8, with large effect size (R^2=.26) expected, and with up to 20 predictor variables in the model, then a sample size of 1043 would suffice (Field, 2013) . Therefore, the overall sample size of 1300 estimated above would suffice for both comparison of proportions and statistical/econometric modeling.

7.2. Sampling Strategy

To better reach hidden, hard-to-reach, and unreached EW, respondent driven sampling (RDS) was the most appropriate strategy to select the sample for this evaluation study. This sampling strategy was also appropriate in the context where there was no sampling frame, and where the definite number of population had not been known.

RDS initiated recruitment with purposively (non-randomly) selected study participants, known as seeds, but it would result in a reasonably randomly drawn sample. The initial sample would not be biased by the purposive selection of seeds if the equilibrium (an indication that the final sample is not biased) was reached. Equilibrium was the point at which the sample characteristics no longer change no matter how many more individuals enter into the sample. Studies using RDS have demonstrated that four to six waves were usually needed to reach equilibrium and the tendency for in-group affiliation could be reduced as well. Moreover, selecting a diverse set of initial seeds could speed the approach to equilibrium. The increased number of waves allowed the target sample size to be attained and ensured a broad array of participants to have the opportunity to recruit their peers (Grazina, 2008).

The initial seeds were selected from the existing networks of previous studies, and by field research managers based on initial visits. Outreach workers facilitated the recruitment process for the initial seeds when necessary. Each of these seeds recruited two EW, then each of the two EW continued recruiting two more EW. Sampling ended when the target sample size of 1300 was reached (See Table 7).

Table 7 Results of recruitment

Province	OD	Sample Size	Initial Seed	#Wave	Ineligible	Rejected coupon -	Rejected coupon -	Refusal	# of Dead seeds
Phnom Penh	Chaktomuk	100	1	9	16	1	33	0	34
Kampong Cham	Kampong Cham	100	1	12	7	0	1	0	0
Siem Reap	Siem Reap	100	2	7-11	1	0	0	0	0
Banteay Meanchey	PoiPet	100	3	1-20	20	0	13	0	15
Battambang	Battambong	100	2	7	6	1	0	0	29
Pursat	Sampov Meas	100	1	15	18	0	0	1	0
Kampong Thom	Kampong Thom	100	3	2-14	15	1	11	0	15
Preah Sihanouk	Preah Sihanouk	100	2	4-9	0	0	0	0	0
Pailin	Pailin	100	4	2-9	15	0	8	0	24
Battambang	Moung	66	1	10	8	0	0	0	31
Kep	Kep	126	4	2-20	29	13	53	0	66
Kampot	Kampong Trach	25	1	8	9	0	5	0	9
Kampong Thom	Baray	70	1	12	12	4	19	1	25
	Stung	57	2	3-8	0	0	0	0	0
Preah Vihear	SraEm	56	7	1-5	20	0	16	0	25
	Total	*1300*	*35*		*176*	*20*	*159*	*2*	*273*

Though the recruitment chain planned for this study was started with initial seeds of 1 or 2 EW corresponding to the sample size allocated to each site, the initial seeds were varied in the field (Tables 8 and 9) depending on the speed of recruitment, survival rate, and characteristics of the study site. For example, for Sra Em OD in Preah Vihear province, only one initial seed was required to complete the recruitment chain for 40 EW, but in real fieldwork, 7 initial seeds were used for the recruitment due to extremely small network sizes and their working places were very far from each other. The Social network sizes are shown in figure 2.

Table 8 Types of initial seeds

Chaktomuk	Seed 1	Karaoke worker
Kampong Cham	Seed 1	Karaoke worker
Siem Reap	Seed 1	Restaurant
	Seed 2	Massage parlor worker
Poi Pet	Seed 1	Massage parlor worker
	Seed 2	Restaurant
	Seed 3	Restaurant
Battambang	Seed 1	Freelance sex worker (park, street, phone…)
	Seed 2	Karaoke worker
Sampov Meas	Seed 1	Karaoke worker
Kampong Thom	Seed 1	Massage parlor worker
	Seed 2	Karaoke worker
	Seed 3	Freelance sex worker (park, street, phone…)
Preah Sihanouk	Seed 1	Restaurant
	Seed 2	Residential sex worker
Pailin	Seed 1	Restaurant
	Seed 2	Residential sex worker
	Seed 3	Karaoke worker
	Seed 4	Café/Restaurant
Moung	Seed 1	Karaoke worker
Kep	Seed 1	Karaoke worker down stair and guest house up stair
	Seed 2	Karaoke worker
	Seed 3	Freelance base in beach
	Seed 4	Karaoke worker
Kampong Trach	Seed 1	Karaoke worker
Baray	Seed 1	Karaoke worker
Stoung	Seed 1	Karaoke worker
	Seed 2	Karaoke worker
Sra Em	Seed 1	Beer garden worker
	Seed 2	Karaoke worker
	Seed 3	Karaoke worker
	Seed 4	Massage parlor worker
	Seed 5	Karaoke worker
	Seed 6	Restaurant
	Seed 7	Karaoke worker

Table 9 *RDS recruitment numbers and probabilities*

Type of EW	Freelance sex	Residential sex worke	Massage parlor	Beer garden	KTV	Cafe/ restaurant	Other
Number of participants recruited							
Freelance sex worker	12	2	3	0	15	1	5
Residential sex worker	1	35	0	0	9	0	4
Massage parlor	2	1	103	3	16	2	2
Beer garden	0	0	3	30	23	7	3
KTV	10	3	8	21	673	19	37
Cafe/restaurant	3	0	5	12	11	77	3
Other	8	1	1	0	34	7	41
Total	36	42	123	66	781	113	95
Recruitment Probabilities							
Freelance sex worker	0.316	0.053	0.079	0	0.395	0.026	0.132
Residential sex worker	0.02	0.714	0	0	0.184	0	0.082
Massage parlor	0.016	0.008	0.798	0.023	0.124	0.016	0.016
Beer garden	0	0	0.045	0.455	0.348	0.106	0.045
KTV	0.013	0.004	0.01	0.027	0.873	0.025	0.048
Cafe/restaurant	0.027	0	0.045	0.108	0.099	0.694	0.027
Other	0.087	0.011	0.011	0	0.37	0.076	0.446

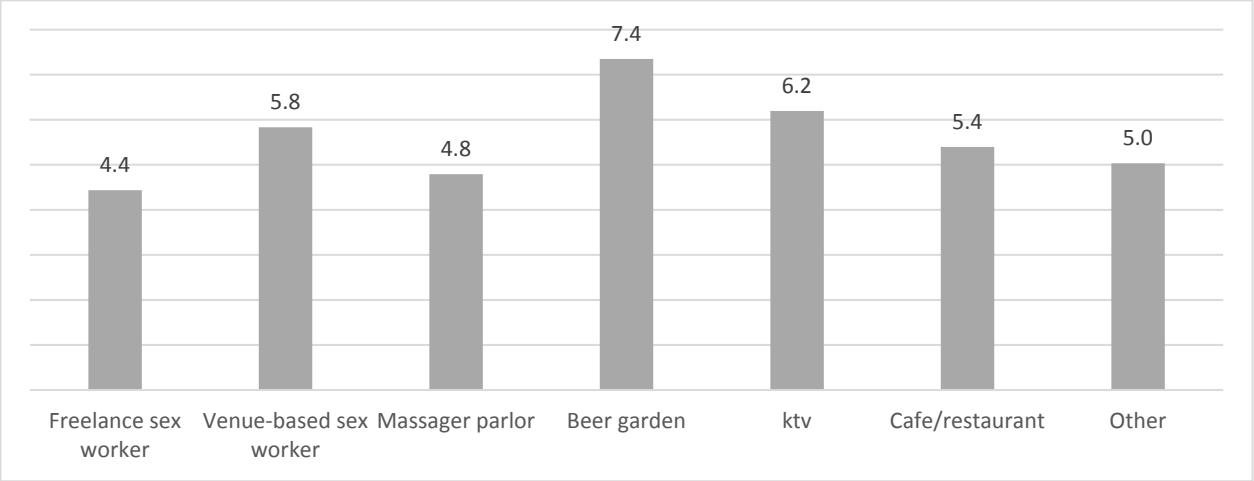


Figure 2 *Average social network size by type of EW*

7.3. Recruitment Process

Outreach workers from NGOs working directly with EW were employed to help facilitate the recruitment process. Initial seeds were given 2 coupons each to recruit other candidates from the target populations by giving them a coupon with a unique serial number used for attributing the referral to the seed. The recruited candidates, in turn, became seeds after participating in the study. The new seeds were given coupons that they would use to refer their peers. To motivate seeds and new recruits to participate in the study, an incentive mechanism was used. Seeds were eligible for additional financial compensation if individuals they referred were eligible and accepted to participate in the study. Eligible new recruits received a financial compensation if they were qualified and accepted to participate in the study. Participants that did not meet the inclusion criteria could not receive any incentive. See figure 3.

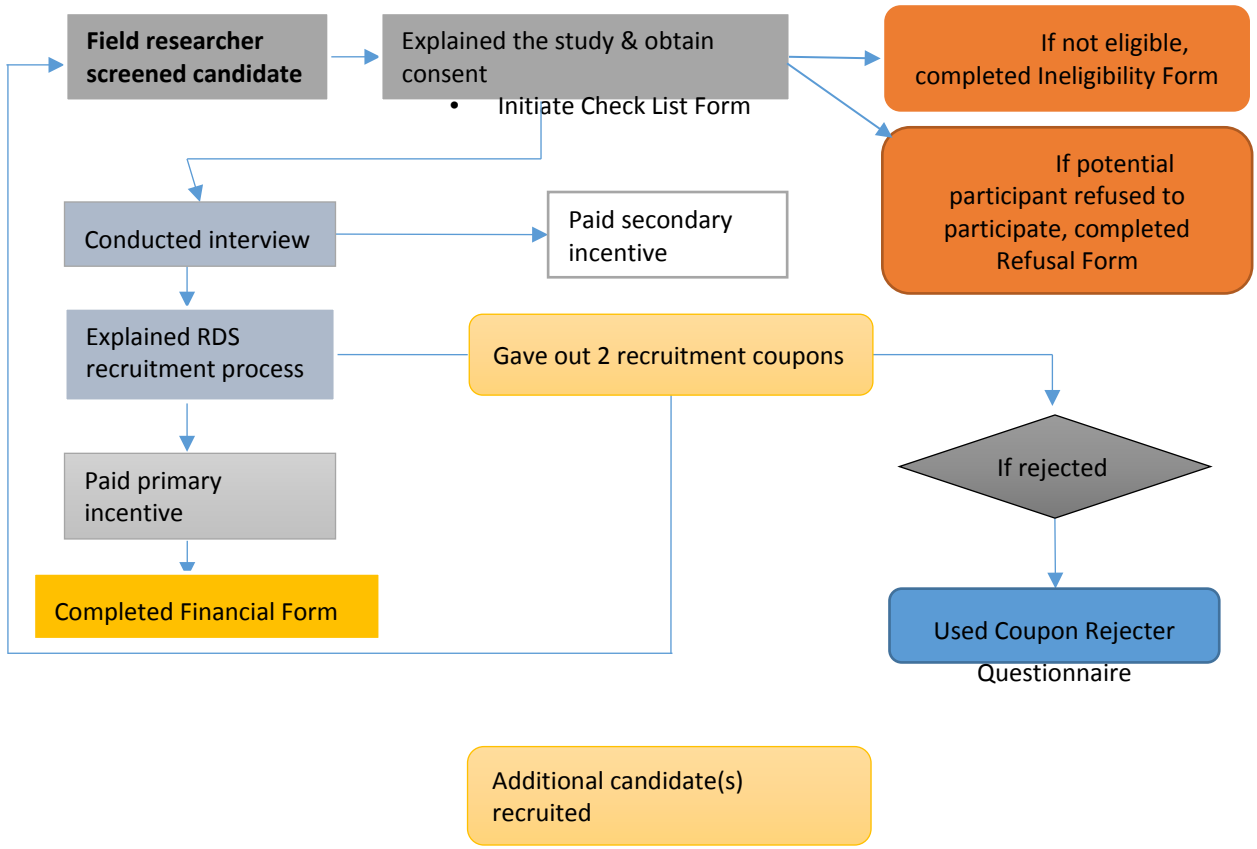


Figure 3 RDS recruitment process

7.4. Eligibility

EW were assessed for eligibility by the field research team. The assessment ensured that the survey participants met eligibility criteria and gave consent. Eligible participants received an explanation of the study's purpose and the nature of the questions to be asked. The field research team reviewed the consent form with the participant. If the participant acknowledged full understanding of her participation in the study and agreed to participate, she would be enrolled. Below were the inclusion criteria for participants in this evaluation:

- Exchanged sex for money or other items or services in the last 3 months;
- Female aged 18 or older;
- Khmer speaker;
- Able to adequately grant informed consent;
- Working in the study OD coverage;
- First time enrolled in the study; and
- A valid referral coupon from a previous study participant (except seeds).

152 participants of the total 1456 (10.4%) recruited were not eligible because they had not had sex with a male partner in exchange for money or goods in the previous 3 months. 10 EW recruited were under age 18 years. These EW were not included in the study.

7.5. Place and Time of Interviews

Generally, the locations of interviews were decided with consultation with respondents in compliance with standard requirements of appropriate interview locations. The places of interviews varied from site to site corresponding to the characteristics of their living space and working venue. For example, most EW in Phnom Penh preferred to have a meeting at their rented home or room for the interview. But 35% of EW in Siem Reap met with field researchers at a pagoda for the interviews because their rented room/house and working place were not convenient for discussion.

The time for conducting interviews with EW working at Karaoke and beer garden was commonly from 10 AM to 4 PM. The schedule needed to be at some time after they woke up and at some point before they went to work in late afternoon. For EW working at massage parlor and freelance EW, the interviews were done at any time they were available.

Before the interview started, field researchers had spent around 10-15 minutes to introduce themselves, objectives of the study, get informed consent, warm up, build rapport, and encourage the EW to participate in the study. Overall, about 40 to 60 minutes were spent for each interview session. In addition to this, the recruitment process was consumed about 10-15 minutes in order to ensure that the recruiters understood the recruitment process and to reduce the probability of failure in recruiting their qualified peers.

7. Evaluation Team

The evaluation was carried out by a team possessing academic backgrounds in health and social science, capacities, skills and experience in research and impact evaluation design, management, and analysis. The team consisted of the following people:

- Dr. Christian Pitter, MD MPH, Chief of Party, USAID HIV Innovate and Evaluate Project, University Research Co. LLC.
- KHUN Sithon, Ph.D. (Demography), M.A. (Population & Reproductive Health Research), B.A. (Sociology), Director of Research, USAID HIV Innovate and Evaluate Project, University Research Co. LLC.
- Mrs. Oeng Sothary, B.A. (Sociology), Research Project Officer, USAID HIV Innovate and Evaluate Project, University Research Co. LLC.

Data collection was carried out by a pool of field researchers possessing bachelor degrees in social sciences, and were well equipped with knowledge, skills, and extensive experience in structured interviewing and data collection techniques with EW. They had been engaged in research and evaluation with USAID HIV Innovate & Evaluate Project in addition to their previous fieldwork experience with other organizations. These field researchers were a central part to this evaluation. Moreover, the quality of data collected was managed by a qualified data analyst with experience and skills in data management using tablet computers.

Data collection was conducted by Mao Sosengphyrun, Chhor Lyda, Chhuoy Socheat, Loeurng Samoeun, Dieb Sreyroth, Tap Bopea, Phorn Somaly, Srun Piroth, Em Phal Nida, Hor Danet, Khen Sophal, Iv Kham Prasith, Eam Socheata, Ham Leakhena, Inn Sieklim, Pech Chanra, Kaing Sonai, Douk Satya, Ouch Chanriith, San Kimtin, and Ke Sreypech.

This external evaluation was carried out by the USAID HIV Innovate and Evaluate project, a project that is independent of the intervention project and the national HIV program in Cambodia. All members of the evaluation team were independent. All field researchers were trained to be independent and followed standard processes of independent evaluation.

8. Data Collection

8.1. Data Collection Team

Since cost allocation was integrated in this program evaluation, two types of data collection team were formulated: a social research team and a cost allocation team.

The social research team was led by the HIEP Director of Research and coordinated by two research operation managers, Mr. Song Koeun and Mr. Pho Yaty, and a research project officer. Five field research teams were formed to oversee and ensure quality of fieldwork for data collection in field. Each team was composed of a field research manager and 2-3 female field researchers. Overall, there were 6 field researcher managers, 15 field researchers and 2 research operation managers carrying out data collection for this evaluation. The social research team collected data from EW.

A well-constructed conceptual and methodological costing analysis required a great deal of technical knowledge and skill in accounting and budgeting systems. The cost allocation team composed of 2 external consultants with accounting background to collect data under the coordination and support from the finance and administration director. The team was equipped with a standardized method for data collection to ensure uniformity in assigning costs.

8.2. Training for Data Collection

The social data collection team was provided with a six-day training, from 21 to 28 December 2016, focusing on the study background, evaluation protocol including methodology and sampling strategies, professional interviewing techniques and fieldwork strategies, questionnaire and tablet survey application, consent forms, data collection, ethical requirements in independent evaluation, and the intervention program. Technical personnel implementing partners were invited to provide orientation about the implementation of the SMARTgirl program. The objective of the training was to equip the data collection team with knowledge in intervention project, evaluation methodology, and concept and skill in quantitative interviewing techniques and data collection management. Mock interviews were carried out among the research team.

The cost allocation team was trained by the HIEP Administration and Finance Director in a three-day training course. A pilot test of this cost allocation was carried out. Refinement of the tools and process was made based on the results of the pilot.

8.3. Fieldwork Management

After being recruited by the seeds, the participants were contacted by field researchers to make appointments for interviews. The interviews were done at anyplace agreed by the participants as convenient for conversation, while ensuring safety for field researchers. To further ensure researchers' safety, female field researchers were accompanied by a male field research manager to interview with each participant when necessary but he was not allowed to stay close to hear the interviews. Generally the male field researcher stayed far from the place of interview but within a distance that he could see the female field researcher. In some cases, field researchers informed the field research manager about locations of the appointments and the schedule of daily interviews. In addition, the tablet application enabled the monitoring of the timing and location of interviews. Both options were used to ensure that interview actually happened in the field and to facilitate the efficiency and effectiveness of the interviews.

Monitoring data collection was central to ensuring data quality. Two research operation mangers monitored data collection activities on a daily basis. A facilitation model was used in order to build a strong research team with a common goal of providing good quality data. The key role of the senior research team was to facilitate the jobs of field researchers who carried out data collection activities. Daily monitoring allowed to oversee the following issues:

- The completion of interview quota;
- The number of participants completed the interview, but refused to become recruiters;
- The number of individuals who refused to participate in the interview;
- The number of participants who were found to be ineligible for the interview; and

- Pattern of refusal (reasons why peers did not want to be interviewed or were not willing to recruit their peers).

Based on the monitoring information, the research management team assessed how recruiters were administering study information and the consent form, how the field team and recruiters checked eligibility, especially to ensure that it was being determined correctly, and how the field researchers provided recruiter training. Moreover, a fieldwork operation manual for data collection was designed, and this guided the processes of data collection. The social media platform WhatsApp was intensively used by the evaluation team, creating a platform of interactive communication among the field researchers across the study areas and the management team at the central office which allowed the provision of backstopping support from the management team at central office.

8.4. Data Collection Schedule

The data collection schedule was divided into two rounds in order that the quality of data could be ensured. The first round of data collection was from 9 to 26 January 2017, and the second round was from 30 January to 17 February. Lessons learned from the first round were used to improve the quality of fieldwork for data collection in the second round.

Table 10 Data collection schedule

No	OD	Date			#Participants
		Started	Ended	# Days	
First round of data collection					
1	Chaktomuk	9 Jan 2017	25 Jan 2017	17	100
2	Baray	9 Jan 2017	18 Jan 2017	10	70
3	Kampong Cham	9 Jan 2017	21 Jan 2017	13	100
4	Moung	9 Jan 2017	18 Jan 2017	10	66
5	Kampong Trach	9 Jan 2017	15 Jan 2017	7	25
6	Sampov meas	9 Jan 2017	26 Jan 2017	18	100
7	Kep	16 Jan 2017	26 Jan 2017	11	58
8	Kampong Thom	19 Jan 2017	26 Jan 2017	8	57
9	Battambong	19 Jan 2017	26 Jan 2017	8	66
10	Siem Reap	22 Jan 2017	26 Jan 2017	5	41
Total					683
Second round of data collection					
11	Kep	30 Jan 2017	13 Feb 207	15	68
12	Kampong Thom	30 Jan 2017	5 Feb 2017	7	43
13	Battambong	30 Jan 2017	3 Feb 2017	5	34
14	Siem Reap	30 Jan 2017	9 Feb 2017	11	59
15	Preah Sihanouk	30 Jan 2017	15 Feb 2017	17	100
16	Pailin	30 Jan 2017	12 Feb 2017	14	100
17	Poi Pet	4 Feb 2017	15 Feb 2017	12	100
18	Stoung	10 Feb 2017	17 Feb 2017	8	57
19	Sra Em	5 Feb 2017	14 Feb 2017	9	56
Total					683

8.5. Multiplicity

Duplication of respondents is a concern when using RDS. To avoid using complicated tracking systems, such as biometrics, that could lead to mistrust among this hard-to-reach population, the mobile phone number, working venue, age, duration living in current location, and other related individual characteristics were used to prevent people attempting to defraud the survey. Research team members were required to work

together closely, especially to carry out daily verification. Duplicate questionnaires were excluded from the sample.

8.6. Instruments

Two types of instruments were designed to collect data from EW and costing data. To collect data from EW, a tablet assisted personal interviewing application, SurveyToGo for Android was purchased and used in this study. The questionnaire and screening forms were designed in SurveyToGo Studio.

The following four methods were used to evaluate draft survey questions developed by research team in order that content standards, cognitive standards, and usability of the questions were ensured and quality of measurement (validity and reliability) were enhanced. The content standards were related to whether the questions asked about the right things. Cognitive standards referred to the issues regarding whether respondents understood the questions consistently, had the information required to answer questions, and were willing and able to formulate answers to the questions; and, usability standards were in place to ensure the interviewer and respondents were able to complete the questionnaire easily as they were intended.

- Technical team reviews: the subject matter team reviewed the questions to assess whether their content was appropriate for measuring the intended concepts.
- Semi-structured interviews with EW population were organized to explore what they knew about the issues that the questionnaire would cover, how they thought about the issues, and what terms they used in talking about them.
- Cognitive interviews: the interviewers administered draft questions in individual interviews, probed to learn how the respondents understood the questions, attempted to learn how they formulated their answers.
- Pilot tests: each field researchers conducted at least 3-5 interviews with EW population using RDS strategy. The interviews were recorded with permission from respondents. The recordings were reviewed by the interviewers and research team in order to identify questions that were difficult to read as worded or hard for respondents to answer. Then debriefing with interviewers was held to gain their insights into the problems they had in asking the questions or those the respondents had in answering. Data from field pretests were analyzed to identify signs of trouble.

  Since field researchers are central to this evaluation, necessary efforts and investments were made in order to ensure effective data collection with the ultimate goal of producing high quality of data. Pilot test interviews with EW were organized twice in order to ensure quality of interviews. The data collection tool was refined based on the results of the pilot tests.

Additional tools had been designed in order to support the process and management of data collection. These tools include:

- Screening questionnaire: used to select EW to take part in the study based on the inclusion criteria.
- Consent form: explained the purpose, requirements, risks, and benefits of the study and asks the participant to acknowledge informed consent.
- Check list form: recorded progress of participants from the first contact for interview until primary incentive payment
- Field incident form: reported unexpected occurrences in the field.
- Coupon tracking form: monitored the flow of participants, distribution of coupons and completion of study requirements by participants,
- Non-eligibility form: summarized why participants are ineligible at screening.
- Refusal form: summarized why participants refuse to participate at screening.
- Financial reporting form: tracked the payment of primary and secondary incentives.
- Inclusion criteria card and coupon: Guided recruits' selection of their peers to participate in the study.
- HEART ranking tool: facilitated respondents' replies to scalar questions.

To collect costing data, a financial matrix was developed to capture expenditure data from financial records. The costs incurred by the supporting and coordination activities carried out by staff from the implementing partners, Flagship, and Global Fund project through KHANA were included and collated.

8.7. Incentives

Participants (including seeds) received an incentive for completing the interview (primary incentive) and another incentive (secondary incentive) for recruiting their peers to participate in the study. Each participant recruited up to two peers. Recruiters received an incentive as long as her recruit presented a coupon, fulfilled the eligibility criteria, and enrolled in the study.

Based on findings from previous studies, the primary incentive of US$ 5.00 ($2.50 for transport and $2.50 for communication) and secondary incentive of US$ 2.50 for each recruit were considered as appropriate. These incentives were set low enough to be non-coercive but high enough to cover the costs of participation plus transportation.

Primary incentive: the following conditions were required in order that a participant could claim the primary incentive:

- Have a coupon (except for seeds);
- Fulfill the study eligibility criteria;
- Provide informed consent; and
- Complete the interview process.

Secondary incentive: a participant received an incentive for each individual (no more than two) she recruited. The recruit must fulfill the eligibility criteria and study requirements. A participant who distributed a coupon to her peers were contacted again (second contact) by the field research team to get the incentive and asked to find their recruits and encouraged them to enter the study. The second contact for secondary incentive was a good opportunity for field researcher to ask participant about the peers who refused her offer of a coupon, and for exploring the reasons of refusals.

8.8. Sources of Costing Data

Historical data from accounting system and other records from Flagship project and Global Fund through KHANA, as well as implementing partners were collected. The costing data were provided by organizations based on the matrix for costing data input developed by the evaluation team.

9. Data Management

9.1. Data Entry and Data Cleaning

Deploying the tablet survey software, SurveyToGo, provided the platform for data centralization and allowed the evaluation team for real-time data processing to monitor quotas and interviewers' locations to ensure accurate and timely data. Data were synchronized to the server immediately after interviews were completed in the field. This tablet application allowed for efficient skip patterns and reduce the time required for data entry and cleaning. Field researchers were required to upload completed questionnaire after data has been edited. Data editing were done immediately after completing each interview. The data analyst in the office was responsible for data management, including:

- Synchronization of data from field researchers.
- Response validation using advanced logic rules in SurveyToGo for Android. The validation rules control whether the answer is valid or not.
- Checking data and send feedback to field research manager, and
- Tracking enumerator progress and efficiency.

In addition, the SurveyToGo application provided solutions to the following types of data errors:

- Domain errors: each question had a domain (or range) of valid answers. An answer outside this domain was considered an error.

- Routing errors (skip pattern errors): the questionnaire contained routing instructions. A routing error occurs when an interviewer or respondent fails to follow a routing instruction, and a wrong path is taken through the questionnaire. As a result, the wrong questions are answered, leaving applicable questions unanswered and inapplicable items with entries.

9.2. Weighting Adjustments

After data editing, the clean file required further preparation prior to data analysis. The selection of respondents with probability directly proportional to network size required weighting adjustment procedure in order to correct for unequal selection probabilities. Thus, based on the determined sample size and sample design, weighting adjustments were constructed and applied in the analysis. The logic of using weighting adjustments was to minimize the mean square errors of the estimates (difference between the value of the sample estimates and the true values), reducing biases in the estimates due to sampling and the biases of estimates from data missing due to nonresponse.

Since all participants did not have the same probability of selection, the RDS population proportion estimates (PPEs) was applied. This procedure weighted each sample element by the inverse of its probability of selection so units with a small chance of being selected had more weight. In other words, groups with larger average network sizes were assigned lower weights, while groups with the smaller average network sizes were assigned higher weights. RDSAT application was employed to compute RDS weights for econometric modeling.

10. Operational Definition of Key Variables

Key index variables were operationally defined below:

- **Program Exposure**

Ten variables related to program activities were aggregated into a single measure, 'index', based on linear combinations, using Principle Component Analysis (PCA) in STATA 14. Then participants were ranked by program exposure score from PCA and classified in terciles, with the first 2 parts (lowest to medium scores) categorized as 'some exposure' and the last part with high score grouped as 'high exposure'. Participants without exposure to any of the above activities/services were classified as 'no exposure''. The program exposure variable was coded 0 for no exposure, 1 for some exposure, and 2 for high exposure. Thus the comparison of outcomes was made between these categories:

1. Ever seen logo of SMARTgirl
2. Ever been approached by OW of SMARTgirl in the past 6 months
3. Individual meeting with OW in the past 6 months
4. Group meeting with OW in the past 6 months
5. Received a copy of the SMARTgirl service directory
6. Visited Drop-in-Center in the past 6 months
7. Visited SMARTgirl Club in the past 6 months
8. Visited SMARTgirl Khmer website
9. Visited SMARTgirl Facebook
10. Called Voice4U (1295)

- **Risk Index**

Principle Component Analysis (PCA) scores were classified into: low, medium, and high, based on the following 5 variables:

1. Average number of sexual partners per week.
2. Condom use in last sex with live-in-partner.
3. Condom use in last sex with boyfriend.
4. Condom use in last sex with client.
5. Drunk before having sex in the past 12 months

- **Stigma and Discrimination Index**

Principle Component Analysis (PCA) scores were classified into: low, medium, and high, based on the following 14 variables:

1. Do you feel that health service providers usually treat you with respect?
2. Do you feel that health service providers ever discriminate against people like you?
3. In the past 12 months, have you experienced any discriminatory behaviour by health service providers?
4. Felt discriminated against by service provider.
5. Felt verbally harassed during the visit to the health facility.
6. Believed that being an EW/a SMARTgirl, would be socially excluded.
7. By presenting a health referral slip, would be identified as an EW/a SMARTgirl.
8. Felt was not treated with respect by OW/NGO staff.
9. Felt got incomplete STI diagnosis at the health facility because of EW status.
10. Felt was given the same drug by service provider because they knew status as EW.
11. Felt ashamed when repeatedly infected with STIs by partner(s).
12. Thought would be blamed by a service provider for being infected with HIV.
13. Thought would be blamed by a service provider for being infected with an STI.
14. Though would be blamed service provider for requesting for abortion.

- **HIV/STI Prevention Knowledge Index**

Principle Component Analysis (PCA) scores were classified into: low and high, based on 5 variables:

1. Can a male condom be re-used?
2. Do you think a condom can prevent you from being infected with HIV?
3. Do you think a condom can prevent you from being infected with an STI?
4. Do you usually check the expiry date on condom before using it?
5. Do you usually make sure there are no holes in the packaging before opening your condom?

- **Program Contact**

This variable was measured by the combination analysis of EW reached with the following characteristics:

1. Contacted by an NGO outreach worker for sexual, HIV or birth spacing education;
2. Participated in any NGO activity for sexual, HIV or birth spacing education in the past 12 months;
3. Received any sexual, HIV or birth spacing information from an NGO in the past 12 months,
4. Used any sexual, HIV or birth spacing services in the past 12 months; and
5. Used any sexual, HIV or birth spacing services from any NGO in the past 12 months.

EW that were not exposed to any of these variable were categorized as “unreached”, and as “reached” if exposed to any of these variables.

- **Exposure to Printed Education Materials Index**

Principle Component Analysis (PCA) scores were categorized into some exposure and high exposure. Any EW that did not expose to any of these variables were classified as “no exposure”. The PCA score was based on the following 20 variables:

1. Ever seen “Two better than one”
2. Ever seen “Your health your choice (Srey Ra)”
3. Ever seen “Your decision”
4. Ever seen “Thida and Leakhena”
5. Ever seen “Smart choice”
6. Ever seen “Secret bag”
7. Ever seen “For my future”
8. Ever seen “Value of life”
9. Ever seen “Your choice”
10. Ever seen “Road of life”
11. Ever seen “Good habit”
12. Ever seen “Counselling card”
13. Ever seen “Alcohol use”
14. Ever seen “Risk screening tools”
15. Ever seen “Service package guideline (SMARTgirl)”

16. Ever seen “SMARTgirl fan”
17. Ever seen “1295 sticker”
18. Ever seen “Birth spacing network”
19. Ever seen “condom use and contraceptives”
20. Ever seen “Blood drop”

11. Data Analysis Framework

To address multiple evaluation questions, a range of statistical analysis techniques were employed using STATA 14. The data analysis framework included the following comparisons and techniques.

- Outcomes under the intervention groups with the outcomes under the non-intervention group: comparing the outcomes in SMARTgirl program – Flagship CoE, Flagship TA, and Non-Flagship, with the outcomes in locations with no EW intervention program. The key outcomes included the uptake of HIV tests, condom use, STI screening and treatment, and referrals to health services.
- Outcomes between intervention groups: the analysis also compared outcomes in Flagship CoE areas to areas with no EW intervention program, and Flagship TA areas with the outcomes in locations with no EW intervention program.
- Outcomes within the intervention groups: comparing the outcomes in Flagship CoE areas with Flagship TA areas.
- Comparing the outcomes of participants with different levels of exposure to SMARTgirl program.

Since the program variables above were categorical variables measured at the nominal level, proportion comparisons were made. Other confounding factors were not controlled. This analysis was to provide a general description of the outcome characteristics.

Theoretically we could not estimate the average treatment effect (impact of the program) by simply taking the difference between the sample proportions for the intervention and control groups, because there were covariates that were related to the control groups and intervention groups. Therefore, a more robust estimator, Inverse-Probability-Weighted Regression Adjustment (IPWRA) was used to estimate the impact of the SMARTgirl program. In this modeling approach, covariates were identified and after conditioning on those covariates, any remaining influences on the intervention groups were not related to the control groups. The IPWRA estimator model was applied to both intervention groups and controls groups. Based on the above planned comparisons, each participant could be from SMARTgirl program under CoE areas, SMARTgirl program under non-CoE areas, or non-interventions; or with high exposed to SMARTgirl program, some exposed to the program, or not exposed to the program. For these scenarios, multivalued treatment effects were used so that these comparisons could be made.

In addition to these techniques, descriptive statistics were used to describe the characteristics of the participants, utilization of services, and their exposures with and perspectives regarding the program activities and services. Regression techniques were applied to examine : The effects of exposure to SBC material, ICT and condom distribution, knowledge and behavior regarding HIV prevention and utilization of health services, the effects of SMARTgirl in reducing stigma and discrimination, and the barriers to services. Furthermore, comparisons of these effects were performed across the Flagship CoE areas, Flagship TA areas, and Non-Flagship areas.

For the cost-effectiveness analysis, the first step in the analysis was to identify the resources that were used in the implementation of the program. Resources were classified corresponding to the inputs of activities for the program such as management, administration, and program components. Resources used in the last fiscal year were estimated by Flagship through reviewing administrative and financial documents. Comparison was made between the unit costs i.e. costs per HIV test, and cost per new case detection, under Flagship CoE, Flagship TA, and Non-Flagship. The **Total Costs** induced: listing of all costs of SMARTgirl program such as staff, transport, utilities, incentives, training, and other supplies, etc. The costs of testing device were not included. These costs were presented in actual amount and percentage of total

costs. The **Unit Costs:** a unit cost (average) captures the relationship between total costs and the related volume of new HIV cases identified and number of HIV tests. This cost shed light on the intensity of resources used.

12. Ethical Considerations

The protocol, data collection tools, and informed consent form were reviewed and approved by the Cambodian National Ethic Committee for Health Research (NECHR) on 30 December 2016 prior to starting of the study. The protocol was followed, with no exceptions.

The information sheet and consent form were translated from English to Khmer by research project staff who had good knowledge of the study area. Field researchers gave a copy of the informed consent form to every participant to read preceding the interview and asked participants if they had any questions. In cases of low-literacy, the information sheet and consent forms were read aloud by the field researchers to the participant during the consent process so that the participant could provide their consent with their signature.

The interviews were organized in a safe, private, and accessible location. Interviews were taken approximately one hour. The questionnaire was administered face-to-face with no other person in the setting than the field researcher and the study participant. The research team safeguarded these protections for participants:

- Participation was completely voluntary;
- Subjects were free to withdraw at any time;
- Informed consent was signed in a private setting;
- Confidentiality was guaranteed on all documents and tools used;
- No names were used in written documentation of the study; and
- Field researchers were trained in discussing sensitive issues and protecting respondents' confidentiality and human rights.

13. Limitations and Challenges

Carrying out studies with EW, especially using RDS, presented challenges. The main challenge was that the minimum sample size for EW from non-intervention areas could not be reached because the actual size of the population was too small to meet the desired sample size, and that some seeds were unable to recruit their peers to participate in the study within the defined timeframe. For example, in Moung OD, 100 EW had been required for the interviews, but the actual number of EW recruited to participate in the study were only 66 and even though the field researchers stayed longer in the field, the number of EW were exhausted. Based on mapping, there were only 6 KTVs (Karaoke bars) including a KTV's family style, and few restaurants in this OD.

Unfortunately at the time of data collection, many EW were in panic situation because the government had implemented a large scale anti-drug campaign and some EW were arrested. This situation brought challenges for the research team in reaching target participants and in getting responses to questions about overlapping risk including illicit drug use (Bourmant, 2017). Finally the research team decided to skip these overlapping risk questions.

The research team increased sample size in other locations under the non-program area in order to ensure sufficient total sample size for the analysis.

With the issue of spillover effects, particularly with the nature of high mobility among the EW, this might contaminate the effect of exposure to program among respondents from the non-program area, Non-Flagship, and Flagship TA. Additionally, the cumulative effects of exposure to interventions before the Flagship could not be accounted for this evaluation design. Therefore, the true effects of the program could not be ensured, especially the comparisons between the Flagship CoE, Flagship TA, Non-Flagship, and no

program areas, as well as between the levels of program exposure. The outcome differences might be accounted by other unobserved factors that were not in the model.

Financial matters are seen as internal affair for implementers, and disclosure to outsiders was not easy. In this cost allocation assignment, the allocation of the costs were made by the Flagship and implementing partners. Consequently, this has the risk of distorting program costs.

The analysis of the impact of the SMARTgirl programs on HIV confirmation testing, identifying new cases, reducing LTFU for HIV testing confirmation, and ART enrollment, links to ART and adherence support, viral suppression, and retention could not be performed as intended in the protocol. The total number of EW reported to be HIV positive was only 7, which is an insufficient number for meaningful analysis.

14. Results

14.1. Descriptive Analysis

14.1.1. Program and Participant Characteristics

As shown in table 11, of the 1300 respondents, 300 were from the geographic areas of the Flagship CoE areas, 300 were from the geographic areas of Flagship TA areas, 300 were from the geographic areas of Non-Flagship areas, and 400 were from geographic areas with no existing EW programs. Across locations, 50% of EW had no exposure to any EW program. About 85% of EW in "No Program" areas reported no exposure, while about one third (33-36%) of EW in the other three program geographic areas reported no exposure. By contrast, the majority (52-55%) of EW in the three types of program geographic areas reported a high level of exposure to the program. The differences in exposure levels across the different geographic areas was statistically significant, p = 0.000.

Table 11 Program exposure by geographic area

Program exposure	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
No exposure	33.0%	36.3%	35.7%	84.5%	50.2%	289.241, df=6, p=.000
Some exposure	14.7%	10.0%	9.3%	7.3%	10.1%	
High exposure	52.3%	53.7%	55.0%	8.3%	39.7%	
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	

Table 12 describes the sociodemographic characteristics of EW by geographic area and program exposure. While no significant differences on age was found by geographic area, a significantly larger proportion of EW aged 25-30 years (which accounted for 39% of all EW in the sample) were highly exposed to the program (44%). The differences in exposure by age group were statistically significant, p = 0.011. EW in the CoE areas had higher levels of education, with 45% having seven years or more of education, compared to 29-36% of EW from other areas, p = 0.000.

More EW had their main occupation at a KTV (62%) than other locations, including only 10% having their main occupation at massage parlors, 9% at a cafe/restaurant. There were significant differences in main occupation location by geographic area and by program exposure, p = 0.000 for both comparisons. For example, a much larger proportion of EW in no program locations worked at a KTV when compared to program implementation locations (84% versus 48-54%); while a larger proportion of EW in CoE geographic areas (13%) worked in beer gardens than the geographic locations (2-4%). At the same time, a larger proportion of EW in Non-Flagship areas (12%) reported their main occupation as a residential sex worker than the other program and non-program geographic areas (0-2%); and a larger proportion of EW in Flagship TA intervention areas gave their main occupation as a freelance sex worker compared to other areas (8% versus 0.3-4%). The distribution of EW with high exposure to the program largely mirrored the distribution of main occupations.

EW from CoE areas and Flagship TA areas had higher incomes than those in Non-Flagship or no program areas. The proportion of reported income greater than $300/month was 56%, 52%, 43%, and 29% in CoE, Flagship TA, Non-Flagship and no-program areas respectively. These differences were statistically significant, p = 0.000. More than half of all EW reported being divorced or separated (53%), while 21% had a non-cohabitating partner/boyfriend, and 10% reported being married.

The analysis showed that EW were fairly mobile, with 52% of all EW reporting less than 12 months at their current work place for their main occupation, and 43% of all EW reporting less than 12 months in their current place of living. EW in no program areas were most mobile and EW in CoE areas were least mobile

where 79% of EW in CoE areas lived in their current locations for 12 months or more , while 34% of EW in the non-program areas reported living in their current locations for 12 months or more, p=0.000.

Table 12 Sociodemographic characteristics by geographic area and program exposure

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Age											
18-24 years	33.7%	35.0%	35.0%	40.0%	36.2%		40.1%	37.4%	31.0%	36.2%	
25-30 years	42.3%	38.0%	38.7%	36.0%	38.5%		35.1%	35.1%	43.8%	38.5%	
31 years and above	24.0%	27.0%	26.3%	24.0%	25.2%		24.8%	27.5%	25.2%	25.2%	
Total	100%	100%	100%	100%	100%	5.114, df=6, p=.529	100%	100%	100%	100%	3.117, df=4, p=.011
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Education											
Under 1 year	3.3%	11.3%	12.7%	12.8%	10.2%		9.8%	12.2%	10.3%	10.2%	
1-6 years	52.0%	52.7%	58.3%	53.5%	54.1%		56.0%	54.2%	51.6%	54.1%	
7 years and above	44.7%	36.0%	29.0%	33.8%	35.7%		34.2%	33.6%	38.2%	35.7%	
Total	100%	100%	100%	100%	100%	30.872, df=6, p=.000	100%	100%	100%	100%	.193, df=4, p=.526
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Main Occupation											
Freelance sex worker	.3%	7.7%	4.0%	1.0%	3.1%		3.4%	3.8%	2.5%	3.1%	
Residential sex worker	0.0%	.7%	12.0%	1.5%	3.4%		.9%	4.6%	6.2%	3.4%	
Massager parlor	9.0%	26.7%	5.0%	1.3%	9.8%		7.7%	10.7%	12.2%	9.8%	
Beer garden	12.7%	4.3%	3.3%	2.0%	5.3%		4.6%	11.5%	4.7%	5.3%	
KTV	54.0%	48.0%	52.7%	84.3%	61.6%		67.1%	54.2%	56.6%	61.6%	
Cafe/restaurant	20.7%	8.3%	10.3%	.5%	9.2%		6.7%	9.2%	12.4%	9.2%	
Other	3.3%	4.3%	12.7%	9.5%	7.6%		9.6%	6.1%	5.4%	7.6%	
Total	100%	100%	100%	100%	100%	435.748, df=18, p=.000	100%	100%	100%	100%	65.561, df=12, p=.000
	300	*300*	300	*400*	*1300*		*653*	*131*	*516*	*1300*	
Income											
Under $150	6.7%	11.0%	11.3%	13.8%	10.9%		12.4%	13.7%	8.3%	10.9%	
$150 - $250	25.3%	24.3%	32.7%	43.0%	32.2%		37.2%	26.0%	27.5%	32.2%	
$251 - $300	12.3%	13.0%	13.0%	14.0%	13.2%		13.6%	13.0%	12.6%	13.2%	
$301 - $500	31.3%	32.7%	29.0%	19.8%	27.5%		23.3%	30.5%	32.2%	27.5%	
$501 and above	24.3%	19.0%	14.0%	9.5%	16.2%		13.5%	16.8%	19.4%	16.2%	
Total	100%	100%	100%	100%	100%	72.208, df=12, p=.000	100%	100%	100%	100%	30.861,df=8, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Marital status											
Single	9.0%	6.7%	7.0%	7.5%	7.5%		7.4%	9.2%	7.4%	7.5%	
Have partner/boyfriend and living together	6.0%	4.0%	9.7%	7.3%	6.8%		7.5%	5.3%	6.2%	6.8%	
Have partner/boyfriend but not living together	17.0%	18.7%	25.3%	22.0%	20.8%		21.9%	21.4%	19.4%	20.8%	
Married(having husband)	16.0%	9.7%	11.0%	6.3%	10.4%		7.8%	19.1%	11.4%	10.4%	
Divorced/separated	51.0%	59.3%	45.0%	54.0%	52.5%		53.3%	43.5%	53.7%	52.5%	
Widowed	1.0%	1.7%	1.7%	3.0%	1.9%		2.1%	1.5%	1.7%	1.9%	
Other	0.0%	0.0%	.3%	0.0%	.1%		0.0%	0.0%	.2%	.1%	
Total	100%	100%	100%	100%	100%	44.171, df=18, p=.001	100%	100%	100%	100%	20.937, df=12, p=.051
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

Table 12 Sociodemographic characteristics by geographic area and program exposure (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Duration living in current location											
Less than 12 months	21.3%	43.0%	34.0%	66.3%	43.1%		56.0%	35.9%	28.5%	43.1%	
12 months or more	78.7%	57.0%	66.0%	33.8%	56.9%	155.522, df=3,p=.0	44.0%	64.1%	71.5%	56.9%	92.367, df=2, p=.000
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Duration working in current workplace											
Less than 12 months	33.7%	56.3%	44.0%	69.0%	52.2%		64.6%	48.1%	37.4%	52.2%	
12 months or more	66.3%	43.7%	56.0%	31.0%	47.8%	96.674, df=3,p=.0	35.4%	51.9%	62.6%	47.8%	86.558, df=2, p=.000
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

14.1.2. Risk, Discrimination and Stigma, Program Contact, and Sexual Activities

Table 13 shows that based on the risk index, there were statistically significant differences (p = 0.001) in HIV risk based on geographic area. Higher proportions of EW in CoE (46%) and in no program (43%) areas were at low risk, compared to Flagship TA (35%) and Non-Flagship (37%) areas. No statistically significant differences were found with regard to the relationship between risk index and program exposure.

The data also showed that there were statistically significant differences in reported stigma, with 49% of EW in CoE areas reporting low stigma, compared to 25-39% of EW from other areas. 45% of EW from no program areas reported high stigma, compared to 20-34% of EW from program areas. Additionally, 47% of highly program-exposed EW reported low levels of stigma, while conversely, a large proportion (44%) of EW with no program exposure reported high levels of stigma. These differences were statistically significant, p = 0.000.

Table 13 Risk, discrimination and stigma, and program contact by geographic area and program exposure

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Risk index											
Low risk	46.3%	35.3%	37.0%	43.0%	40.6%		43.5%	38.9%	37.4%	40.6%	
Medium risk	26.0%	42.7%	34.3%	31.0%	33.3%		31.9%	33.6%	35.1%	33.3%	
High risk	27.7%	22.0%	28.7%	26.0%	26.1%	22.410, df=6,	24.7%	27.5%	27.5%	26.1%	.652, df=4, p=.325
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Stigmatization											
Low	49.3%	32.3%	39.3%	24.5%	35.5%		25.7%	37.4%	47.3%	35.5%	
Medium	30.3%	33.3%	31.3%	30.3%	31.2%		30.5%	29.8%	32.6%	31.2%	
High	20.3%	34.3%	29.3%	45.3%	33.3%	66.361, df=6,	43.8%	32.8%	20.2%	33.3%	6.818, df=4, p=.000
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Program contact											
Unreached	14.3%	15.7%	13.3%	46.8%	24.4%		41.7%	26.0%	2.1%	24.4%	
Reached	85.7%	84.3%	86.7%	53.3%	75.6%	157.189, df=3,p=.0	58.3%	74.0%	97.9%	75.6%	244.371, df=2, p=.000
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

Table 14 shows that larger proportions of EW in program areas (65-75%) had been engaged in sex work for 12 months or more, compared to only 47% of EW from non-program areas. These differences were statistically significant, p = 0.000.
The overwhelming majority (92.5%) of all EW had fewer than seven sexual partners per week. Important and statistically significant differences (p = 0.000) were seen with regard to the average number of sexual partners per week. Much larger proportions of EW in Flagship TA and Non-Flagship areas (15% and 13%, respectively) reported seven or more sexual partners per week than did EW in CoE (0.3%) or non-program (3%) locations.

The majority of EW primarily found clients from a bar/nightclub/KTV/massage parlor (59%), by phone (12%), or a restaurant (10%). Notably, a larger proportion of EW in CoE areas found clients through restaurants than EW in other areas, 23% versus 1-9% while a larger proportion of EW in Non-Flagship areas found clients by phone (18%) compared to other areas (7-12%). The differences in the main source of clients by geographic area was statistically significant, p = 0.000. Large proportions of EW (25%-39%) stated that in addition to their main source of clients, they additionally found clients by phone.

Table 14 Sexual activities by geographic area and program exposure

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Duration in sex work											
Under 12 months	25.3%	35.0%	26.7%	53.5%	36.5%		49.9%	31.3%	20.9%	36.5%	
12 months or more	74.7%	65.0%	73.3%	46.5%	63.5%		50.1%	68.7%	79.1%	63.5%	
Total	100%	100%	100%	100%	100%	78.787,df=3p=.000	100%	100%	100%	100%	106.217, df=2,p=.00
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Disclosed status as sex worker to friend or family											
No	60.7%	44.3%	51.3%	45.8%	50.2%		49.5%	47.3%	51.7%	50.2%	
Yes	39.3%	55.7%	48.7%	54.3%	49.8%		50.5%	52.7%	48.3%	49.8%	
Total	100%	100%	100%	100%	100%	20.598,df=3p=.000	100%	100%	100%	100%	1.065, df=2,
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Usual number of sexual partners per week											
0	17.0%	12.0%	14.7%	24.5%	17.6%		23.1%	16.0%	11.0%	17.6%	
1-2	69.7%	54.3%	53.0%	54.8%	57.7%		55.4%	58.8%	60.3%	57.7%	
3-6	13.0%	18.3%	19.3%	17.8%	17.2%		16.2%	19.1%	17.8%	17.2%	
7 or more	.3%	15.3%	13.0%	3.0%	7.5%		5.2%	6.1%	10.9%	7.5%	
Total	100%	100%	100%	100%	100%	99.280,df=9, p=.000	100%	100%	100%	100%	38.602, df=6, p=000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Main source of clients											
Meka (sex broker)	1.7%	1.0%	.3%	1.5%	1.2%		1.2%	2.3%	.8%	1.2%	
Restaurant	23.3%	7.7%	9.3%	1.3%	9.7%		6.6%	10.7%	13.4%	9.7%	
Beer garden	6.3%	2.7%	.3%	1.3%	2.5%		2.3%	5.3%	2.1%	2.5%	
Street/public park	.3%	7.0%	.7%	0.0%	1.8%		1.7%	2.3%	1.9%	1.8%	
Introduced by friends	2.0%	2.0%	.7%	1.5%	1.5%		2.3%	2.3%	.4%	1.5%	
Facebook	.7%	.3%	0.0%	.3%	.3%		.6%	0.0%	0.0%	.3%	
Apartment/Condo/Brothel	0.0%	.3%	13.0%	1.3%	3.5%		1.4%	3.1%	6.2%	3.5%	
Bar/nightclub/karaoke/massage pallor	53.0%	47.0%	53.7%	75.3%	58.6%		63.4%	54.2%	53.7%	58.6%	
Street-based massage/coin massage	4.7%	15.7%	.3%	.3%	4.8%		3.1%	4.6%	7.2%	4.8%	
Guest house/hotel	.3%	4.3%	.3%	1.5%	1.6%		1.7%	2.3%	1.4%	1.6%	
Phone call	7.3%	9.0%	18.3%	12.0%	11.7%		12.4%	11.5%	10.9%	11.7%	
Other	.3%	3.0%	3.0%	4.0%	2.7%		3.4%	1.5%	2.1%	2.7%	
Total	100%	100%	100%	100%	100%	459.166, df=33, p=.000	100%	100%	100%	100%	70.320, df=22, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

14.1.3. Strategic Behavioral Communication

Table 15 describes strategic behavioral communication among EW. In CoE areas, 49% of EW recall having ever seen the SMARTgirl logo, compared to only 37% of EW in Flagship TA areas, 30% of EW in Non-Flagship areas and only 10% of EW in no program areas. The vast majority (81%) of EW reported finding the SMARTgirl logo attractive.

Approximately half (51-56%) of EW in the three program area types reported that they were contacted by an outreach worker in the previous 12 months. Smaller proportions of EW reported being contacted by outreach workers in the previous three months, with 34% of EW in CoE areas, 37% of EW in Flagship TA areas, and 43% of EW in Non-Flagship areas. Among EW in three program area types, 21-25% of EW reported having had an individual meeting with an outreach worker in the previous six months, while 37-49% of EW reported a group meeting with an outreach worker in the previous six months. Only 26% of EW in the CoE areas reported ever receiving a copy of the SMARTgirl guide, and only one-third of these (32%) reported ever having used it.

The majority of EW in program areas reported that their main source of information about HIV/AIDS and STI services was outreach workers and volunteers (52-65%), while only 22% of EW in no program areas reported the same. Twice the proportion of EW (20%) in non-program areas reported that their main source of information about HIV/AIDS and STI services was friends or colleagues than EW in program areas (10%). Similarly, a much larger proportion of EW in non-program areas reported that their main source of information about HIV/AIDS and STI services was television than EW in program areas, 18% versus 5-7% respectively, the differences between groups was statistically significant, p = 0.000. Overall, a plurality of EW (37%) reported that TV was the best communication channel to provide information about sexual, HIV, and reproductive health matters, 22% stated that Facebook was the best communication channel while 18% reported outreach activities as the best communication channel, and 14% reported radio as the best communication channel.

Table 15 Strategic behavioral communication

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Ever seen SMARTgirl logo						
No	51.0%	63.3%	70.0%	90.5%	70.4%	
Yes	49.0%	36.7%	30.0%	9.5%	29.6%	138.904 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness of SMARTgirl logo						
Not attractive	21.0%	18.0%	20.7%	16.8%	18.9%	
Attractive	79.0%	82.0%	79.3%	83.3%	81.1%	2.836 df=3 p=.418
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Contact with OW in past 12 months						
No	48.7%	48.0%	44.0%	94.0%	61.4%	
Yes	51.3%	52.0%	56.0%	6.0%	38.6%	260.903 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Contact with OW in past 6 months						
No	54.3%	52.3%	46.3%	95.3%	64.6%	
Yes	45.7%	47.7%	53.7%	4.8%	35.4%	241.705 df=3
Total	100%	100%	100%	100%	100%	

Table 15 Strategic behavioral communication (Continued)

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Contact with OW in past 3 months						
No	66.3%	63.3%	56.7%	97.8%	73.1%	
Yes	33.7%	36.7%	43.3%	2.3%	26.9%	186.239 df=3 P=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Individual meeting with OW in the past 6 months						
No	75.3%	79.0%	78.7%	97.3%	83.7%	
Yes	24.7%	21.0%	21.3%	2.8%	16.3%	79.621 df=3 P=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Group meeting with OW in the past 6 months						
No	62.7%	54.7%	51.3%	95.8%	68.4%	
Yes	37.3%	45.3%	48.7%	4.3%	31.6%	209.543 df=3 P=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Received a copy of SMARTgirl guide						
No	74.0%	79.0%	83.7%	93.8%	83.5%	
Yes	26.0%	21.0%	16.3%	6.3%	16.5%	54.466 df=3 P=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Ever used SMARTgirl guide (of those that received a copy)						
No	67.9%	68.3%	71.4%	56.0%	67.4%	
Yes	32.1%	31.7%	28.6%	44.0%	32.6%	1.873 df=3 P=.599
Total	100%	100%	100%	100%	100%	
	78	*63*	*49*	*25*	*215*	
Main source information about HIV/AIDS and STI services						
Do not know	5.0%	11.7%	8.0%	10.3%	8.8%	
NGO outreach workers/volunteers	65.3%	52.3%	58.0%	22.3%	47.4%	
Friends/colleague	10.0%	10.0%	9.7%	20.3%	13.1%	
Magazine/newspaper	1.0%	.3%	1.0%	.3%	.6%	
Special events	.7%	8.0%	.7%	0.0%	2.2%	
Education material of SMARTgirl	0.0%	2.0%	0.0%	0.0%	.5%	
Sexual partner	1.0%	.7%	2.3%	4.3%	2.2%	
Voice4U	.3%	0.0%	0.0%	0.0%	.1%	
Other Websites	0.0%	.3%	0.0%	0.0%	.1%	
Other Facebooks	1.0%	2.0%	2.0%	3.3%	2.2%	
TV	5.3%	7.3%	7.3%	17.8%	10.1%	
Radio	1.7%	2.0%	2.7%	3.5%	2.5%	
Other	8.7%	3.3%	8.3%	18.3%	10.3%	
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	300.382, df=36, P=.000

Table 15 Strategic behavioral communication (Continued)

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Best communication channel						
Facebook	20.0%	21.7%	27.0%	20.8%	22.2%	
Messenger	0.0%	.3%	.7%	.8%	.5%	
Line	.3%	.3%	.7%	1.0%	.6%	
WeChat	0.0%	.3%	0.0%	0.0%	.1%	
Website	.3%	.3%	0.0%	0.0%	.2%	
Voice4U	.7%	.3%	2.0%	.5%	.8%	
Outreach activities	35.7%	2.7%	23.7%	10.8%	17.6%	
TV	28.0%	42.0%	34.7%	43.0%	37.4%	
Radio	10.7%	24.3%	9.3%	13.5%	14.4%	
Magazines/Newspaper	2.0%	3.0%	1.3%	3.5%	2.5%	
Other	2.3%	4.7%	.7%	6.3%	3.7%	
Total	100%	100%	100%	100%	100%	193.277, df=30, p=.000
	300	*300*	*300*	*400*	*1300*	

Figure 4 shows that overall, of the 20 printed materials, only 4 of these materials were recognized by more than half of EW, and the majority (12 of the 20) printed materials were reported ever seen by one third or less EW in CoE areas. Among EW that had seen the materials, however, the vast majority found them to be "attractive". More detail is available in Annex I, table 36.

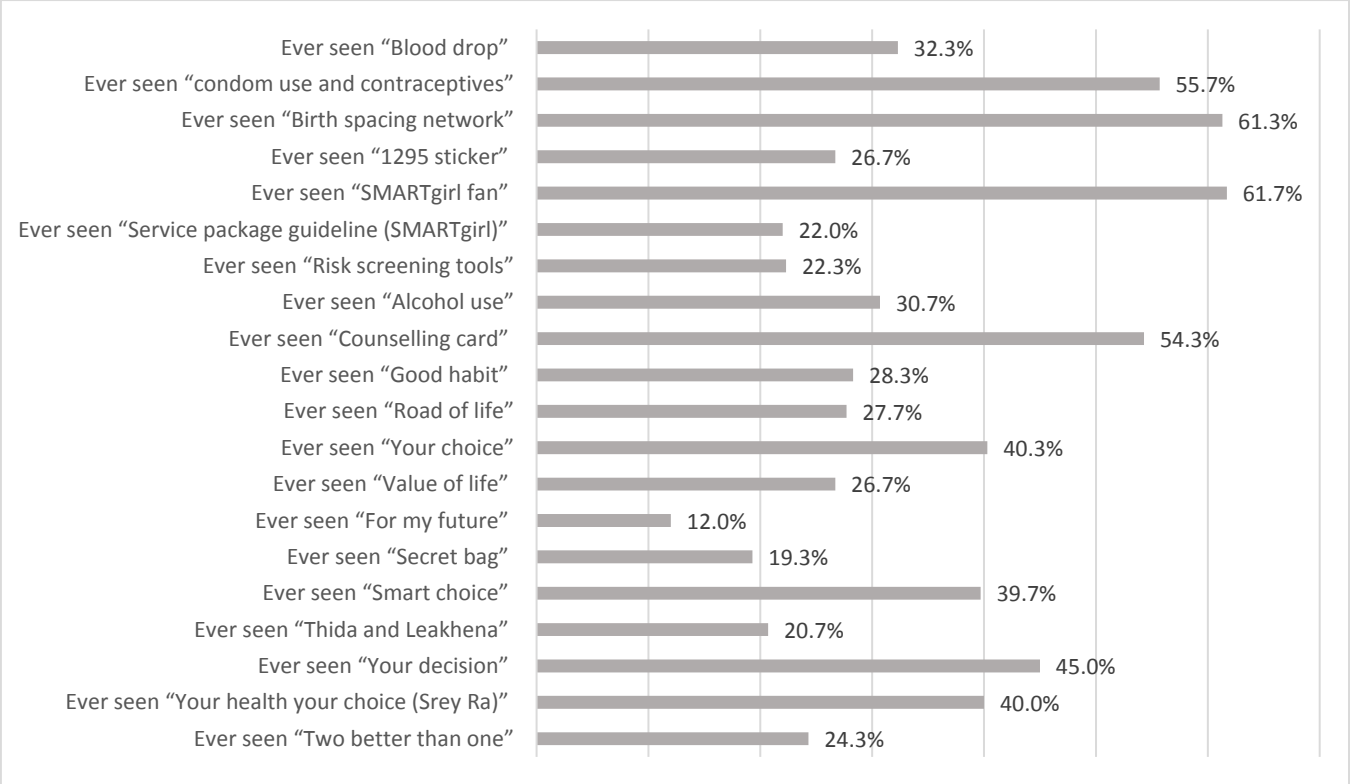


Figure 4 Percentage of EW ever saw printed education materials (Flagship CoE)

14.1.4. SMARTgirl Club/Drop-in-Centre

Table 16 shows that small proportions of EW in program areas (1-10%) had ever heard about a drop-in center for entertainment workers, with less than 3% having visited in the previous six months. Among the 2.3% EW in Non-Flagship areas who knew about the drop-in centers, they had the highest rate of having visited one in the previous six months. Larger proportions of EW in program areas (31-61%) reported ever heard about the SMARTgirl club, 61% of EW in CoE areas reported ever having heard of the SMARTgirl club. 20% of EW in CoE areas reported having visited the SMARTgirl club in the previous six months, as did 8% of EW in Non-Flagship areas and 7% of EW in Flagship TA areas. The differences between groups was statistically significant, p = 0.000.

Table 16 SMARTgirl Club/Drop-in-Centre

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Heard about drop-in-center for entertainment workers						
No	95.7%	99.0%	89.7%	98.5%	95.9%	
Yes	4.3%	1.0%	10.3%	1.5%	4.1%	
Total	100%	100%	100%	100%	100%	44.133, df=3, p=.000
	300	*300*	*300*	*400*	*1300*	
Heard about SMARTgirl club for entertainment workers						
No	39.3%	65.7%	69.0%	88.8%	67.5%	
Yes	60.7%	34.3%	31.0%	11.3%	32.5%	
Total	100%	100%	100%	100%	100%	191.479, df=3, p=.000
	300	*300*	*300*	*400*	*1300*	
Visited drop-in-center in the past 6 months						
No	99.7%	100.0%	97.7%	100.0%	99.4%	
Yes	0.3%	0.0%	2.3%	0.0%	0.6%	
Total	100%	100%	100%	100%	100%	19.201, df=3, p=.000
	300	*300*	*300*	*400*	*1300*	
Visited SMARTgirl club in the past 6 months						
No	79.7%	92.7%	92.0%	99.3%	91.5%	
Yes	20.3%	7.3%	8.0%	0.8%	8.5%	
Total	100%	100%	100%	100%	100%	85.875, df=3, p=.000
	300	*300*	*300*	*400*	*1300*	
Usual monthly frequency of visits to drop-in-center (among those that visited)						
Never visited	85.7%	66.7%	56.3%	100.0%	67.9%	
Less than once	0.0%	0.0%	6.3%	0.0%	3.6%	
Once	14.3%	0.0%	18.8%	0.0%	14.3%	
More than once	0.0%	33.3%	18.8%	0.0%	14.3%	
Total	100%	100%	100%	100%	100%	Fisher' Exact Test= 0.896
	7	*3*	*16*	*2*	*28*	
Usual monthly frequency of visits to SMARTgirl club (among those that visited)						
Never visited	49.0%	50.0%	34.7%	50.0%	45.9%	
Less than once	8.2%	17.4%	44.9%	14.3%	19.3%	
Once	19.4%	17.4%	8.2%	7.1%	15.5%	
More than once	23.5%	15.2%	12.2%	28.6%	19.3%	
Total	100%	100%	100%	100%	100%	31.504, df=9, p=.000
	98	*46*	*49*	*14*	*207*	

14.1.5. Social Media and Communication Technologies

As shown in table 17, overall, only 9% of all EW had ever heard of the SMARTgirl Khmer website (16% in CoE areas), 14% of EW had ever heard of the SMARTgirl Facebook page (22% in CoE areas), and only 15% of EW had ever heard of Voice4U (27% in CoE areas). Only 1.2% of all EW had ever visited the SMARTgirl Khmer website (3% in CoE areas), only 3% of EW had ever visited the SMARTgirl Facebook page (7% in CoE areas), and only 3% of EW had ever called Voice4U (10% in CoE areas). Even smaller proportions had ever utilized these communication channels in the past six months in Flagship, Flagship TA and Non-Flagship areas (0.6%, 2.2%, and 1.8 %) respectively. All these reported differences between groups were statistically significant, with p values ranging from 0.000 to 0.015.

Table 17 Social media and communication technologies

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Ever heard about SMARTgirl Khmer Website						
No	84.0%	91.7%	92.0%	94.8%	90.9%	
Yes	16.0%	8.3%	8.0%	5.3%	9.1%	25.143, df=3,
Total	100%	100%	100%	100%	100%	p=.000
	300	*300*	*300*	*400*	*1300*	
Ever visited SMARTgirl Khmer Website						
No	97.3%	98.0%	100.0%	99.5%	98.8%	12.044,
Yes	2.7%	2.0%	0.0%	.5%	1.2%	df=3,
Total	100%	100%	100%	100%	100%	p=.007
	300	*300*	*300*	*400*	*1300*	
Visited SMARTgirl Khmer Website in Past 6 Months						
No	99.0%	98.3%	100.0%	100.0%	99.4%	10.481,
Yes	1.0%	1.7%	0.0%	0.0%	.6%	df=3,
Total	100%	100%	100%	100%	100%	p=.015
	300	*300*	*300*	*400*	*1300*	
Ever heard about SMARTgirl Facebook Page						
No	78.0%	88.7%	85.3%	90.3%	85.9%	
Yes	22.0%	11.3%	14.7%	9.8%	14.1%	23.715, df=3,
Total	100%	100%	100%	100%	100%	p=.000
	300	*300*	*300*	*400*	*1300*	
Ever visited SMARTgirl Facebook Page						
No	93.3%	97.3%	97.7%	98.3%	96.8%	15.212,
Yes	6.7%	2.7%	2.3%	1.8%	3.2%	df=3, p=.002
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Visited SMARTgirl Facebook Page in Past 6 Months						
No	95.3%	97.7%	98.0%	99.5%	97.8%	13.743,
Yes	4.7%	2.3%	2.0%	.5%	2.2%	df=3,
Total	100%	100%	100%	100%	100%	p=.003
	300	*300*	*300*	*400*	*1300*	
Ever ticked "Like" on the SMARTgirl Facebook page						
No	96.7%	98.0%	98.7%	99.5%	98.3%	8.738,
Yes	3.3%	2.0%	1.3%	0.5%	1.7%	df=3,
Total	100%	100%	100%	100%	100%	p=.034
	300	*300*	*300*	*400*	*1300*	
Ever heard about Voice4U						
No	73.0%	88.3%	84.0%	93.3%	85.3%	
Yes	27.0%	11.7%	16.0%	6.8%	14.7%	58.989, df=3,
Total	100%	100%	100%	100%	100%	p=.000
	300	*300*	*300*	*400*	*1300*	
Ever called Voice4u (1295)						
No	90.3%	98.7%	97.7%	99.3%	96.7%	
Yes	9.7%	1.3%	2.3%	.8%	3.3%	50.658, df=3,
Total	100%	100%	100%	100%	100%	p=.000
	300	*300*	*300*	*400*	*1300*	
Called Voice4U (1295) in Past 6 Months						
No	94.7%	99.0%	98.7%	99.8%	98.2%	
Yes	5.3%	1.0%	1.3%	.3%	1.8%	27.377, df=3,
Total	100%	100%	100%	100%	100%	p=.000
	300	*300*	*300*	*400*	*1300*	

14.1.6. Referrals to Health and Social Services

Table 18 shows that relatively small proportions (13-18%) of EW in program geographic areas reported having been referred in the previous 12 months for STI screening/treatment by an outreach worker. EW with high program exposure were more likely (26%) to have been referred for STI screening/treatment by an outreach worker than those with no program exposure (2%). This difference was statistically significant, p = 0.000. Very small proportions (1-7%) of EW in program geographic areas reported having been referred in the previous 12 months for family planning by an outreach worker. EW with high program exposure were more likely (9%) to have been referred for STI screening/treatment by an outreach worker than those with low or no program exposure (1%). This difference was statistically significant, p = 0.000. Less than 1% of EW were referred to legal or psychosocial services, with no statistically significant differences noted by geographic area.

Table 18 Referral to health and social services

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Referred by SMARTgirl/ NGO outreach worker to STI screening and treatment in last 12 months											
No	82.0%	86.7%	82.7%	98.3%	88.2%		98.5%	94.7%	73.6%	88.2%	
Yes	18.0%	13.3%	17.3%	1.8%	11.8%		1.5%	5.3%	26.4%	11.8%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	59.536, df=3, p=.000	*653*	*131*	*516*	*1300*	176.859, df=2, p=.000
Referred by SMARTgirl/ NGO outreach worker to HIV confirmatory test in last 12 months											
No	97.3%	88.0%	98.7%	99.5%	96.2%		98.6%	98.5%	92.4%	96.2%	
Yes	2.7%	12.0%	1.3%	.5%	3.8%		1.4%	1.5%	7.6%	3.8%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	72.294, df=3, p=.000	*653*	*131*	*516*	*1300*	31.885, df=3, p=.000
Referred by SMARTgirl/ NGO outreach worker to Pre-ART/ART services in last 12 months											
No	100%	100%	99.0%	99.5%	99.6%		99.7%	99.2%	99.6%	99.6%	
Yes	0.0%	0.0%	1.0%	.5%	.4%		.3%	.8%	.4%	.4%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	5.421, df=3, p=.143	*653*	*131*	*516*	*1300*	.595, df=3, p=.743
Referred by SMARTgirl/ NGO outreach worker to TB diagnostic in last 12 months											
No	99.3%	98.3%	99.7%	100%	99.4%		99.7%	99.2%	99.0%	99.4%	
Yes	.7%	1.7%	.3%	0.0%	.6%		.3%	.8%	1.0%	.6%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	8.301, df=3, p=.040	*653*	*131*	*516*	*1300*	2.122, df=2, p=.346

Table 18 Referral to health and social services (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Referred by SMARTgirl/ NGO outreach worker to methadone maintenance therapy in last 12 months											
No	99.7%	99.3%	100%	99.3%	99.5%		99.7%	100.0%	99.2%	99.5%	
Yes	.3%	.7%	0.0%	.8%	.5%	2.498, df=3, p=.476	.3%	0.0%	.8%	.5%	2.055, df=2, p=.358
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Referred by SMARTgirl/ NGO outreach worker to Family planning in last 12 months											
No	93.7%	92.7%	98.7%	98.3%	96.0%		99.2%	99.2%	91.1%	96.0%	
Yes	6.3%	7.3%	1.3%	1.8%	4.0%	23.763, df=3, p=.000	.8%	.8%	8.9%	4.0%	53.820, df=2, p=.000
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Referred by SMARTgirl/ NGO outreach worker to legal service in last 12 months											
No	99.3%	98.3%	99.7%	99.8%	99.3%		99.8%	99.2%	98.6%	99.3%	
Yes	.7%	1.7%	.3%	.3%	.7%	5.846, df=3, p=.119	.2%	.8%	1.4%	.7%	6.083, df=2, p=.048
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Referred by SMARTgirl/ NGO outreach worker to Psychosocial service in last 12 months											
No	99.7%	98.7%	99.7%	99.8%	99.5%		99.8%	100%	98.8%	99.5%	
Yes	.3%	1.3%	.3%	.3%	.5%	4.632, df=3, p=.201	.2%	0.0%	1.2%	.5%	6.275, df=2, p=.043
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

14.1.7. Condoms

Table 19 shows that nearly three-fourths of all EW reported using a condom the last time they had sex (74%), with no statistically significant difference based on location or level of program exposure (p = 0.145 and p = 0.634, respectively). Only 7% of all EW reported using a condom the last time having sex with their husbands with 12% EW in the CoE areas reported the same than EW in the other geographic areas (4-7%); This difference was statistically significant (p = 0.015). No statistically significant difference was noted with regard to condom use with husbands based on program exposure (p = 0.525). Among those EW that did not use a condom at the last sex with their husband, the majority (70%) gave trusting their partner as the primary reason, and 12% reported the desire to have a baby as the second most common reason- and the reasons varied by geographic area and this difference was statistically significant, p=0.000.

Table 17 also shows that the overwhelming majority (97%) of EW reported using a condom the last time they had sex with a client. There were no statistically significant differences noted based on location or on level of exposure to the program. Of the small proportion (3%) that reported not having used a condom at their last sexual encounter with a client, the largest proportion said the reason was that their partner refused (38%), and 11% reported that no condom was available, while 8% said that the reason they did not use a condom was that they were drunk at the time.

Among all EW, 94% reported knowing where they could get a condom, with larger proportions of EW in Flagship TA and Non-Flagship areas (99% for both) compared with 89% in CoE areas and 90% in non-program areas. These differences were statistically significant, p = 0.000. 55% of EW reported that the most common places they normally got condoms were from their workplace (guesthouse/B/massage parlor/KTV/spa/sauna/beer garden), 59% reported from a store/gas station/vendor/pharmacy, and, 29% from a SMARTgirl outreach worker, and 29% reported to normally getting a condom from a client. The vast majority of EW (86%) reported that condoms were always available when they needed them and that they knew how to use a condom correctly (73%). 81% of all EW reported initiating condom use, with a larger proportion of highly program exposed EW (87%) reporting this event than the unexposed EW (76%). Highly program exposed EW were also more likely than unexposed EW to check the expiration date on condom before use (48% versus 29%, respectively) and to always ensure that there are no holes in the packaging before use (47% versus 31%, respectively). These differences were statistically significant, p = 0.000. Peer-peer sales was the least common usual source of condoms for EW (only 0.1%).

Table 19 Condoms

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Condom use at last sex with any partner											
No	24.3%	29.7%	29.0%	23.3%	26.3%		26.0%	29.8%	25.8%	26.3%	
Yes	75.7%	70.3%	71.0%	76.8%	73.7%		74.0%	70.2%	74.2%	73.7%	
Total	100%	100%	100%	100%	100%	5.400, df=3, p=.145	100%	100%	100%	100%	.911, df=2, p=.634
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Condom use at last sex with husband											
No	88.0%	93.5%	95.8%	93.5%	92.8%		91.8%	93.3%	93.9%	92.8%	
Yes	12.0%	6.5%	4.2%	6.5%	7.2%		8.2%	6.7%	6.1%	7.2%	
Total	100%	100%	100%	100%	100%	10.510, df=3, p=.015	100%	100%	100%	100%	1.290, df=2, p=.525
	208	*214*	*215*	*293*	*930*		*466*	*90*	*374*	*930*	

Table 19 Condoms (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Main reason for not using a condom at last sex with husband											
No condom available	1.6%	3.0%	0.0%	1.1%	1.4%	47.370, df=15, p=.000	1.2%	1.2%	1.7%	1.4%	6.009, df=10, p=.815
Partner refused	10.9%	6.5%	6.8%	4.4%	6.8%		7.0%	9.5%	6.0%	6.8%	
Trusted partner	77.0%	75.0%	62.6%	67.9%	70.2%		69.6%	66.7%	71.8%	70.2%	
Demonstrated fidelity	3.3%	3.5%	9.2%	9.1%	6.6%		8.2%	4.8%	5.1%	6.6%	
Want having a baby	3.8%	10.5%	17.5%	13.9%	11.8%		11.0%	14.3%	12.3%	11.8%	
Other	3.3%	1.5%	3.9%	3.6%	3.1%		3.0%	3.6%	3.1%	3.1%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	183	*200*	*206*	*274*	*863*		*428*	*84*	*351*	*863*	
Condom use at last sex with live-in partner											
No	57.3%	68.7%	62.3%	49.2%	58.7%	8.758, df=3, p=.033	58.5%	63.0%	57.7%	58.7%	.495, df=2, p=.781
Yes	42.7%	31.3%	37.7%	50.8%	41.3%		41.5%	37.0%	42.3%	41.3%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	143	*83*	*138*	*120*	*484*		*234*	*54*	*196*	*484*	
Main reason for not using a condom at last sex with live-in partner											
No condom available	1.2%	0.0%	3.5%	1.7%	1.8%	16.024, df=15, p=.380	.7%	0.0%	3.5%	1.8%	16.237, df=10, p=.093
Partner refused	7.3%	15.8%	8.1%	3.4%	8.5%		6.6%	14.7%	8.8%	8.5%	
Trusted partner	63.4%	61.4%	55.8%	69.5%	62.0%		65.7%	58.8%	58.4%	62.0%	
Showed fidelity	19.5%	14.0%	19.8%	18.6%	18.3%		21.2%	11.8%	16.8%	18.3%	
Want having a baby	2.4%	7.0%	4.7%	5.1%	4.6%		2.2%	2.9%	8.0%	4.6%	
Other	6.1%	1.8%	8.1%	1.7%	4.9%		3.6%	11.8%	4.4%	4.9%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	82	*57*	*86*	*59*	*284*		*137*	*34*	*113*	*284*	
Condom use at last sex with boyfriend											
No	44.7%	53.2%	48.5%	45.3%	48.0%	3.851, df=3, p=.278	48.9%	46.1%	47.4%	48.0%	.305, df=2, p=.859
Yes	55.3%	46.8%	51.5%	54.7%	52.0%		51.1%	53.9%	52.6%	52.0%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	170	*220*	*198*	*258*	*846*		*405*	*89*	*352*	*846*	

Table 19 Condoms (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Main reason for not using a condom at last sex with boyfriend											
No condom available	5.3%	.9%	1.0%	1.7%	2.0%		2.0%	0.0%	2.4%	2.0%	
Partner refused	9.2%	9.4%	11.5%	10.3%	10.1%		8.6%	7.3%	12.6%	10.1%	
Trusted partner	59.2%	63.2%	64.6%	59.0%	61.6%		63.6%	65.9%	58.1%	61.6%	
Showed fidelity	13.2%	14.5%	12.5%	18.8%	15.0%		16.2%	9.8%	15.0%	15.0%	
Want having a baby	5.3%	7.7%	4.2%	7.7%	6.4%		6.6%	4.9%	6.6%	6.4%	
Other	7.9%	4.3%	6.3%	2.6%	4.9%		3.0%	12.2%	5.4%	4.9%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	76	*117*	*96*	*117*	*406*	12.421, df=15, p=.647	*198*	*41*	*167*	*406*	10.338, df=10, p=.411
Condom use at last sex with client											
No	4.4%	2.8%	4.0%	2.0%	3.2%		2.5%	1.7%	4.5%	3.2%	
Yes	95.6%	97.2%	96.0%	98.0%	96.8%		97.5%	98.3%	95.5%	96.8%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	272	*252*	*275*	*358*	*1157*	3.795, df=3, p=.284	*570*	*118*	*469*	*1157*	4.355, df=2, p=.113
Main reason for not using a condom at the last sex with client											
No condom available	16.7%	0.0%	9.1%	14.3%	10.8%		7.1%	0.0%	14.3%	10.8%	
Partner refused	58.3%	14.3%	45.5%	14.3%	37.8%		21.4%	50.0%	47.6%	37.8%	
Trusted partner	8.3%	42.9%	27.3%	42.9%	27.0%		42.9%	50.0%	14.3%	27.0%	
Drunk	8.3%	14.3%	0.0%	14.3%	8.1%		14.3%	0.0%	4.8%	8.1%	
Condom reduces sexual pleasure	8.3%	14.3%	0.0%	0.0%	5.4%		7.1%	0.0%	4.8%	5.4%	
Was forced by partner not to a use condom	0.0%	14.3%	9.1%	0.0%	5.4%		7.1%	0.0%	4.8%	5.4%	
Want having a baby	0.0%	0.0%	9.1%	0.0%	2.7%		0.0%	0.0%	4.8%	2.7%	
Other	0.0%	0.0%	0.0%	14.3%	2.7%		0.0%	0.0%	4.8%	2.7%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	12	*7*	*11*	*7*	*37*	20.359, df=21, p=.499	*14*	*2*	*21*	*37*	8.220, df=14, p=.878
Knowledge of condom sources											
No	10.7%	.7%	1.3%	10.0%	6.0%		8.1%	5.3%	3.5%	6.0%	
Yes	89.3%	99.3%	98.7%	90.0%	94.0%		91.9%	94.7%	96.5%	94.0%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	49.645, df=3, p=.000	*653*	*131*	*516*	*1300*	11.057, df=2, p=.004
Condom availability when needed											
No	2.7%	7.3%	2.3%	4.5%	4.2%		5.2%	2.3%	3.5%	4.2%	
Yes, always	89.7%	79.3%	91.3%	83.0%	85.6%		81.0%	87.8%	90.9%	85.6%	
Yes, sometimes	7.7%	13.3%	6.3%	12.5%	10.2%		13.8%	9.9%	5.6%	10.2%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	25.900, df=6, p=.000	*653*	*131*	*516*	*1300*	25.596, df=4, p=.000

Table 19 Condoms (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Knows how to use a condom correctly											
No	28.7%	27.3%	19.3%	31.5%	27.1%		35.1%	26.0%	17.2%	27.1%	
Yes	71.3%	72.7%	80.7%	68.5%	72.9%		64.9%	74.0%	82.8%	72.9%	
Total	100%	100%	100%	100%	100%	13.468, df=3, p=.004	100%	100%	100%	100%	46.453, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Ever received training or a demonstration on how to use condom correctly											
No	37.7%	50.0%	29.0%	61.3%	45.8%		61.7%	39.7%	27.1%	45.8%	
Yes	62.3%	50.0%	71.0%	38.8%	54.2%		38.3%	60.3%	72.9%	54.2%	
Total	100%	100%	100%	100%	100%	82.708, df=3, p=.000	100%	100%	100%	100%	141.053, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Usually initiator of condom use											
Client	10.7%	10.7%	7.0%	16.8%	11.7%		15.0%	11.5%	7.6%	11.7%	
Sexual partner/sweetheart	5.3%	8.3%	5.7%	10.3%	7.6%		9.3%	6.9%	5.6%	7.6%	
Myself	84.0%	81.0%	87.3%	73.0%	80.7%		75.7%	81.7%	86.8%	80.7%	
Total	100%	100%	100%	100%	100%	27.320, df=6, p=.000	100%	100%	100%	100%	23.511, df=4, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Usually checks the expiry date on condom before use											
No	54.3%	60.7%	58.7%	74.5%	63.0%		71.5%	63.4%	52.1%	63.0%	
Yes	45.7%	39.3%	41.3%	25.5%	37.0%		28.5%	36.6%	47.9%	37.0%	
Total	100%	100%	100%	100%	100%	35.478, df=3, p=.000	100%	100%	100%	100%	46.471, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Inspects condom packaging for holes before use											
Yes, always	36.0%	37.7%	48.7%	31.5%	37.9%		31.4%	36.6%	46.5%	37.9%	
Yes, sometimes	22.7%	18.3%	18.3%	17.0%	18.9%		17.8%	22.9%	19.4%	18.9%	
Never	41.3%	44.0%	33.0%	51.5%	43.2%		50.8%	40.5%	34.1%	43.2%	
Total	100%	100%	100%	100%	100%	30.798, df=6, p=.000	100%	100%	100%	100%	37.999, df=4, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

Table 19 Condoms (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Source of last condom obtained											
SMARTgirl OW	9.0%	17.0%	14.7%	.8%	9.6%		.8%	2.3%	22.7%	9.6%	
SMARTgirl club	3.0%	.7%	1.0%	0.0%	1.1%		0.0%	0.0%	2.7%	1.1%	
Street-based sale	2.0%	.7%	0.0%	1.5%	1.1%		1.2%	1.5%	.8%	1.1%	
NGO/outreach worker/DIC	1.7%	.7%	.3%	1.0%	.9%		1.4%	.8%	.4%	.9%	
Store/gas station/vendor/ pharmacy	26.0%	23.3%	21.3%	18.0%	21.8%		21.3%	23.7%	22.1%	21.8%	
Guesthouse/brothel/massage parlor/karaoke/ spas/saunas/beer	31.3%	23.7%	26.0%	42.8%	31.8%		34.0%	41.2%	26.7%	31.8%	
Client	14.0%	15.7%	17.0%	20.3%	17.0%		21.6%	12.2%	12.4%	17.0%	
Sexual partner/sweetheart	9.3%	14.7%	12.3%	10.0%	11.5%		13.8%	12.2%	8.3%	11.5%	
Friend	1.0%	1.7%	2.3%	1.3%	1.5%		1.4%	3.1%	1.4%	1.5%	
Family health clinic/health center	1.3%	1.0%	3.0%	2.8%	2.1%		2.5%	3.1%	1.4%	2.1%	
Other	1.3%	1.0%	2.0%	1.8%	1.5%		2.1%	0.0%	1.2%	1.5%	
Total	100%	100%	100%	100%	100%	129.695, df=30, p=.000	100%	100%	100%	100%	218.663, df=20, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Payment for last condom obtained											
Bought	34.7%	34.3%	32.3%	42.5%	36.5%		38.6%	38.9%	33.1%	36.5%	
Free	65.3%	65.7%	67.7%	57.5%	63.5%		61.4%	61.1%	66.9%	63.5%	
Total	100%	100%	100%	100%	100%	9.506, df=3, p=.023	100%	100%	100%	100%	4.081, df=2, p=.130
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Consistent condom use											
Not always	61.3%	49.3%	57.0%	56.8%	56.2%		59.7%	66.4%	49.0%	56.2%	
Always	38.7%	50.7%	43.0%	43.3%	43.8%		40.3%	33.6%	51.0%	43.8%	
Total	100%	100%	100%	100%	100%	9.082, df=3, p=.028	100%	100%	100%	100%	19.613, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

14.1.8. STI Screening and Treatment

Table 20 shows that while about half of EW in program areas (44-50%) were screened for an STI in the previous 6 months, a smaller proportion of EW in non-program areas (35%) were screened. This difference was statistically significant (p = 0.000). Most EW received their last STI screening or treatment at a public health facility (46%), while 20% received screening at a private clinic (20%), 13% at an NGO clinic and 12% a at drop-in center the difference in geographic area and program exposure was significant (p=0.000). A minority of EW in program areas (15-18%) were referred for STI screening by an outreach worker in the previous 6 months.

Table 20 STI screening and treatment

	Geographic Area						Program Exposure				
Variable	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
How many STI screenings are required each year?											
I don't know	48.3%	58.0%	56.3%	57.5%	55.2%		62.6%	57.3%	45.3%	55.2%	
Once each year	2.0%	2.0%	1.7%	3.5%	2.4%		3.1%	3.1%	1.4%	2.4%	
Twice each year	14.3%	10.0%	10.7%	10.5%	11.3%		11.2%	8.4%	12.2%	11.3%	
Three times each year	15.7%	10.3%	13.3%	14.5%	13.5%		11.3%	18.3%	15.1%	13.5%	
Four times each year	16.7%	16.3%	14.7%	10.8%	14.3%		8.9%	9.9%	22.3%	14.3%	
More than four times each year	3.0%	3.3%	3.3%	3.3%	3.2%		2.9%	3.1%	3.7%	3.2%	
Total	100%	100%	100%	100%	100%	18.994, df=15, p=.214	100%	100%	100%	100%	65.066, df=10, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Ever suspected yourself having any STI?											
No	67.0%	63.3%	60.3%	69.5%	65.4%		67.7%	67.2%	62.0%	65.4%	
Yes	33.0%	36.7%	39.7%	30.5%	34.6%		32.3%	32.8%	38.0%	34.6%	
Total	100%	100%	100%	100%	100%	7.279, df=3, p=.064	100%	100%	100%	100%	4.304, df=2, p=.116
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
STI screening in the past 12 months											
No	40.7%	45.0%	42.3%	56.8%	47.0%		58.8%	57.3%	29.5%	47.0%	
Yes	59.3%	55.0%	57.7%	43.3%	53.0%		41.2%	42.7%	70.5%	53.0%	
Total	100%	100%	100%	100%	100%	23.200, df=3, p=.000	100%	100%	100%	100%	105.810, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
STI screening in the past 6 months											
No	50.0%	56.0%	50.3%	65.0%	56.1%		67.8%	69.5%	37.8%	56.1%	
Yes	50.0%	44.0%	49.7%	35.0%	43.9%		32.2%	30.5%	62.2%	43.9%	
Total	100%	100%	100%	100%	100%	21.447, df=3.	100%	100%	100%	100%	116.275, df=2,
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
STI screening in the past 3 months											
No	66.7%	75.7%	61.3%	78.3%	71.1%		79.8%	82.4%	57.2%	71.1%	
Yes	33.3%	24.3%	38.7%	21.8%	28.9%		20.2%	17.6%	42.8%	28.9%	
Total	100%	100%	100%	100%	100%	29.778, df=3, p=.000	100%	100%	100%	100%	80.863, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

Table 20 STI screening and treatment (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Location of last STI screening/treatment?											
Public health facilities	29.4%	40.9%	55.5%	57.0%	46.2%		49.6%	47.5%	42.5%	46.2%	
Private clinics	18.6%	17.7%	13.6%	27.3%	19.6%		28.6%	19.2%	11.1%	19.6%	
NGO clinics	22.6%	9.3%	9.1%	10.9%	12.9%		13.5%	21.2%	10.4%	12.9%	
SMARTgirl clubs	8.1%	2.8%	3.6%	0.0%	3.5%		0.0%	2.0%	7.2%	3.5%	
Other NGO facilities (club/drop-in-center)	10.0%	27.4%	8.6%	3.5%	12.0%		7.0%	8.1%	17.6%	12.0%	
NGO outreach worker in community	11.3%	1.9%	9.5%	1.2%	5.8%		1.3%	2.0%	11.1%	5.8%	
Total	100%	100%	100%	100%	100%	175.299, df=15, p=.000	100%	100%	100%	100%	129.649, df=10, p=.000
	221	*215*	*220*	*256*	*912*		*399*	*99*	*414*	*912*	
Referred by OW for STI screening/treatment in the past 12 months											
No	77.0%	79.7%	77.3%	95.5%	83.4%		95.3%	92.4%	66.1%	83.4%	
Yes	23.0%	20.3%	22.7%	4.5%	16.6%		4.7%	7.6%	33.9%	16.6%	
Total	100%	100%	100%	100%	100%	62.127, df=3, p=.000	100%	100%	100%	100%	185.472, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Referred by OW for STI screening and treatment in the past 6 months											
No	81.7%	85.0%	81.7%	97.0%	87.2%		97.4%	94.7%	72.3%	87.2%	
Yes	18.3%	15.0%	18.3%	3.0%	12.8%		2.6%	5.3%	27.7%	12.8%	
Total	100%	100%	100%	100%	100%	52.015, df=3, p=.000	100%	100%	100%	100%	169.646, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Referred by OW for STI screening and treatment in the past 3 months											
No	91.3%	92.7%	86.0%	98.8%	92.7%		99.1%	96.9%	83.5%	92.7%	
Yes	8.7%	7.3%	14.0%	1.3%	7.3%		.9%	3.1%	16.5%	7.3%	
Total	100%	100%	100%	100%	100%	42.324, df=3, p=.000	100%	100%	100%	100%	106.839, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Last referral location for STI screening and treatment											
Public health facilities	51.6%	40.7%	72.3%	76.1%	58.7%		52.1%	40.0%	63.4%	58.7%	
Private clinics	1.1%	0.0%	.9%	0.0%	.6%		1.4%	0.0%	.4%	.6%	
NGO clinics	35.8%	19.8%	13.4%	23.9%	22.7%		28.2%	51.4%	16.8%	22.7%	
SMARTgirl clubs	9.5%	3.3%	8.0%	0.0%	6.1%		0.0%	5.7%	8.0%	6.1%	
Other NGO facilities (club/drop-in-center)	2.1%	36.3%	5.4%	0.0%	11.9%		18.3%	2.9%	11.3%	11.9%	
Total	100%	100%	100%	100%	100%	93.837, df=12, p=.000	100%	100%	100%	100%	32.618, df=8, p=.000
	95	*91*	*112*	*46*	*344*		*71*	*35*	*238*	*344*	

14.1.9. HIV Testing (Any Type)

Table 21 shows that more than half of EW in program areas (60-67%) received HTC in the previous 6 months, while a smaller proportion of EW in non-program areas (46%) received HTC in the previous 6 months. This difference was statistically significant (p = 0.000). Most EW last received HTC at a public health facility (33%), while 18% received HTC in a private clinic, 27% in a community setting by an outreach worker and, 8% received HTC at an NGO clinic (8%). A minority of EW in program areas (10-16%) were referred for HTC by an outreach worker in the previous 6 months. These differences were statistically significant (p=0.000) by geographic area and by program exposure type.

Table 21 HIV testing and counseling (HTC)

	Geographic Area						Program Exposure				
Variable	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
How many HIV tests are required per year?											
I don't know	35.3%	44.0%	40.7%	44.5%	41.4%		48.4%	42.0%	32.4%	41.4%	
Once a year	1.3%	3.0%	2.7%	3.3%	2.6%		3.7%	2.3%	1.4%	2.6%	
Twice a year	20.7%	18.7%	15.0%	17.5%	17.9%		17.3%	16.8%	19.0%	17.9%	
Three times a year	17.3%	13.3%	17.7%	19.0%	17.0%		16.4%	23.7%	16.1%	17.0%	
Four times a year	23.3%	18.3%	21.7%	13.0%	18.6%		11.8%	13.7%	28.5%	18.6%	
More than four a year	2.0%	2.7%	2.3%	2.8%	2.5%		2.5%	1.5%	2.7%	2.5%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	25.376, df=15, p=.045	*653*	*131*	*516*	*1300*	73.895, df=10, p=.000
Ever suspected self of having contracting HIV?											
No	68.0%	58.3%	64.0%	68.5%	65.0%		68.0%	63.4%	61.6%	65.0%	
Yes	32.0%	41.7%	36.0%	31.5%	35.0%		32.0%	36.6%	38.4%	35.0%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	9.333, df=3, p=.025	*653*	*131*	*516*	*1300*	5.307, df=2, p=.070
HIV test in the past 12 months											
No	23.7%	26.0%	22.7%	40.5%	29.2%		40.7%	40.5%	11.6%	29.2%	
Yes	76.3%	74.0%	77.3%	59.5%	70.8%		59.3%	59.5%	88.4%	70.8%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	36.862, df=3, p=.000	*653*	*131*	*516*	*1300*	127.245, df=2, p=.000
HIV test in the past 6 months											
No	38.7%	40.3%	33.3%	53.8%	42.5%		55.7%	60.3%	21.1%	42.5%	
Yes	61.3%	59.7%	66.7%	46.3%	57.5%		44.3%	39.7%	78.9%	57.5%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	33.419, df=3, p=.000	*653*	*131*	*516*	*1300*	160.375, df=2, p=.000
HIV test in the past 3 months											
No	62.0%	62.7%	51.3%	73.3%	63.2%		73.8%	76.3%	46.3%	63.2%	
Yes	38.0%	37.3%	48.7%	26.8%	36.8%		26.2%	23.7%	53.7%	36.8%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	35.738, df=3, p=.000	*653*	*131*	*516*	*1300*	104.521, df=2, p=.000

Table 21 HIV testing and counseling (HTC) (Continued)

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Location of last HIV test											
Never tested	5.7%	6.0%	4.0%	13.8%	7.8%		12.9%	6.9%	1.7%	7.8%	
Public health facility	20.0%	32.7%	33.7%	43.8%	33.4%		42.3%	37.4%	21.1%	33.4%	
Private clinic	17.0%	18.0%	16.0%	20.3%	18.0%		22.8%	20.6%	11.2%	18.0%	
NGO clinic	14.3%	4.7%	8.0%	6.0%	8.1%		7.7%	12.2%	7.6%	8.1%	
SMARTgirl club	9.3%	2.3%	4.3%	0.0%	3.7%		0.0%	1.5%	8.9%	3.7%	
Other NGO facility (club/drop-in-center)	.7%	1.0%	1.7%	2.8%	1.6%		2.5%	.8%	.8%	1.6%	
NGO outreach worker in community	33.0%	35.3%	32.3%	13.5%	27.4%		11.9%	20.6%	48.6%	27.4%	
Total	100%	100%	100%	100%	100%	167.769, df=18, p=.000	100%	100%	100%	100%	323.749, df=12, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Referred by OW for HIV test in the past 6 months											
No	89.3%	84.0%	86.0%	98.0%	90.0%		96.6%	95.4%	80.2%	90.0%	
Yes	10.7%	16.0%	14.0%	2.0%	10.0%		3.4%	4.6%	19.8%	10.0%	
Total	100%	100%	100%	100%	100%	45.926, df=3, p=.000	100%	100%	100%	100%	90.875, df=2, p=.000
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	

14.1.10. HIV Testing Using Finger Prick (CBHTC)

Table 22 shows that approximately half of EW in program areas (48-56%) received HTC using a finger prick (Community-Based HIV Testing and Counselling, or CBHTC), and a smaller proportion of EW (34%) in non-program areas received CBHTC. This difference was statistically significant (p = 0.000). Only 0.7% of EW reported being HIV positive.

Table 22 HIV testing using finger prick (CBHTC)

	Geographic Area						Program Exposure				
Variable	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
HIV test using finger prick in the past 12 months											
No	35.3%	37.3%	33.7%	54.5%	41.3%	42.309, df=3, p=.000	56.4%	60.3%	17.4%	41.3%	201.712, df=2, p=.000
Yes	64.7%	62.7%	66.3%	45.5%	58.7%		43.6%	39.7%	82.6%	58.7%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
HIV test using finger prick in the past 6 months											
No	48.7%	51.7%	43.7%	65.8%	53.5%	39.006, df=3, p=.000	68.3%	77.1%	28.7%	53.5%	214.552, df=2, p=.000
Yes	51.3%	48.3%	56.3%	34.3%	46.5%		31.7%	22.9%	71.3%	46.5%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
HIV test using finger prick in the past 3 months											
No	70.3%	70.0%	59.3%	82.0%	71.3%	43.766, df=3, p=.000	82.8%	86.3%	52.9%	71.3%	142.214, df=2, p=.000
Yes	29.7%	30.0%	40.7%	18.0%	28.7%		17.2%	13.7%	47.1%	28.7%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*		*653*	*131*	*516*	*1300*	
Tested for HIV using finger prick at drop-in-center in the last 3 months											
No	98.8%	100%	98.8%	100%	99.4%	6.178, df=3, p=.103	100%	100%	98.8%	99.4%	6.965, df=2, p=.031
Yes	1.2%	0.0%	1.2%	0.0%	.6%		0.0%	0.0%	1.3%	.6%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	253	*245*	*258*	*278*	*1034*		*455*	*99*	*480*	*1034*	
Tested for HIV using finger prick at SMARTgirl Club in the last 3 months											
No	90.5%	98.0%	94.6%	100%	95.8%	33.877, df=3, p=.000	100%	100%	91.0%	95.8%	51.783, df=2, p=.000
Yes	9.5%	2.0%	5.4%	0.0%	4.2%		0.0%	0.0%	9.0%	4.2%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	253	*245*	*258*	*278*	*1034*		*455*	*99*	*480*	*1034*	
HIV status											
Negative	100%	99.2%	97.7%	99.3%	99.0%	18.084, df=6, p=.006	98.2%	100%	99.6%	99.0%	6.217, df=4, p=.183
Positive	0.0%	0.0%	2.3%	.4%	.7%		1.1%	0.0%	.4%	.7%	
Refuse to answer	0.0%	.8%	0.0%	.4%	.3%		.7%	0.0%	0.0%	.3%	
Total	100%	100%	100%	100%	100%		100%	100%	100%	100%	
	253	*245*	*258*	*278*	*1034*		*455*	*99*	*480*	*1034*	

14.1.11. HIV/STI Prevention Knowledge

Figure 5 shows that overall, most (55%) of EW demonstrated a low level of HIV/STI prevention knowledge, compared to a minority (45%) that demonstrated a high level of HIV/STI prevention knowledge. This pattern was evident across all geographic areas, except for Non-Flagship geographic areas, where the majority (54%) of EW had a high level of HIV/STI prevention knowledge. In addition, EW in non-program areas had the highest proportion with a low level of HIV/STI prevention knowledge (63%). These differences were statistically significant, p=0.000.

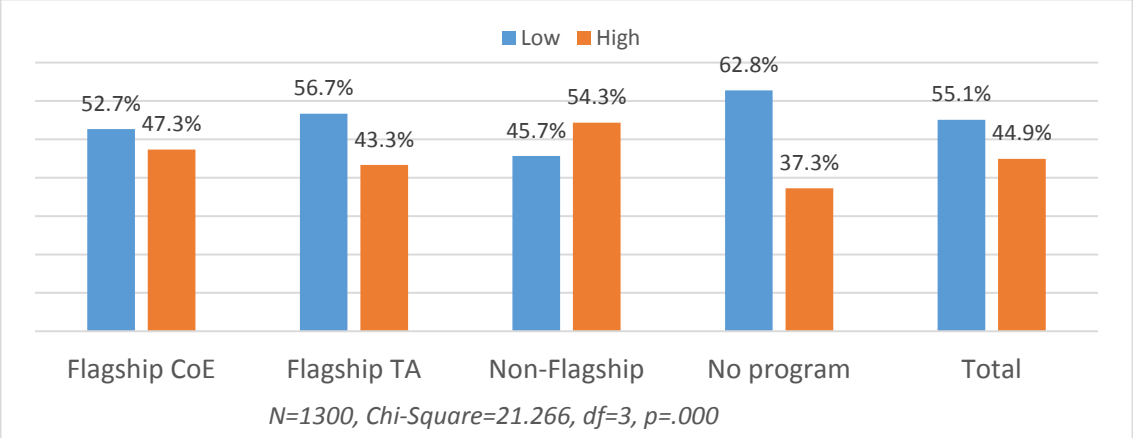


Figure 5 *HIV/STI prevention knowledge by geographic area*

Figure 6 shows that overall, higher program exposure was associated with higher levels of HIV/STI prevention knowledge. EW with no program exposure had the largest proportion with a low level of HIV/STI prevention knowledge (63%) and the lowest proportion (37%) with a high level of HIV/STI prevention knowledge. Conversely, EW with high program exposure had the highest (55%) level of HIV/STI prevention knowledge compared to other levels of program exposure. These differences were statistically significant, p=0.000.

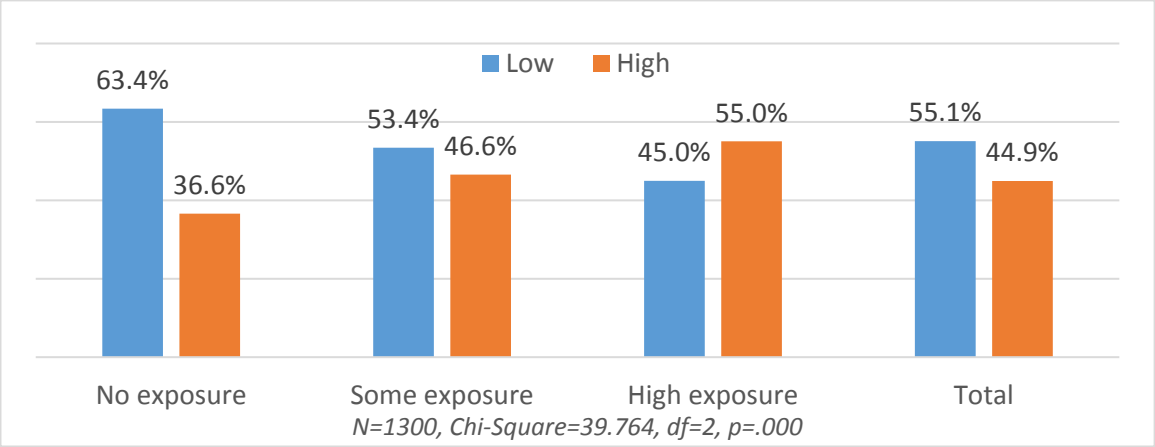


Figure 6 *HIV/STI prevention knowledge by level of program exposure*

14.2. Program Impact

The analysis employed a treatment effects analysis to identify the causal effects of geographic area and program exposure on the outcome variables of STI screening and treatment, HIV testing, and stigma and discrimination. The treatment-effects analysis employed an inverse probability weighted regression adjustment (IPWRA) model. This "doubly robust" approach, controlled for confounders with this observational data set in identifying causal effects on the outcomes of interest.

14.2.1. STI Screening and Treatment

Figures 7 and 8 show the impact of geographic area and program exposure on the probability of an EW receiving STI screening/treatment in the previous six months, controlling for confounders as described in Annex I, tables 37 and 38. EW in Non-Flagship geographic areas had a 47.3% probability of receiving STI screening/treatment in the previous six months, while EW in CoE geographic areas had a 46.9% probability, EW in Flagship TA geographic areas had a 43.5% probability, and EW in no program areas had a 37% probability of receiving STI screening/treatment in the previous six months. Thus, EW in all program areas were more likely to have received STI screening/treatment in the previous six months than EW located in areas without a program.

Program exposure had a notable impact on the probability of an EW receiving STI screening/treatment in the previous six months. While EW with no exposure had only a 33.2% probability of STI screening/treatment in the previous six months, highly exposed EW had a 61.5% probability. This translates into a 28.3% increased probability that highly exposed EW would receive STI screening/treatment in the previous six months when compared to their unexposed counterparts, regardless of geographic location or other potential confounders.

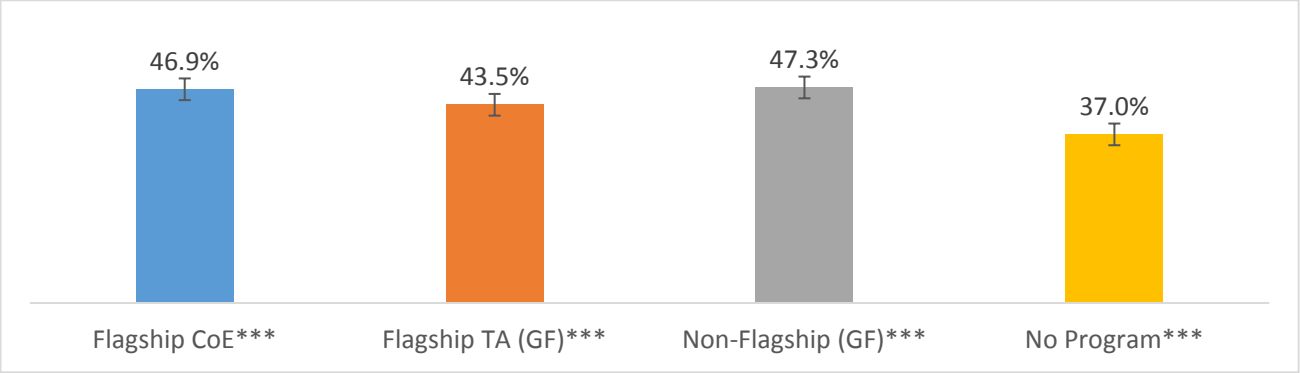


Figure 7 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting STI screening and treatment in the previous 6 months*
****p<.001*

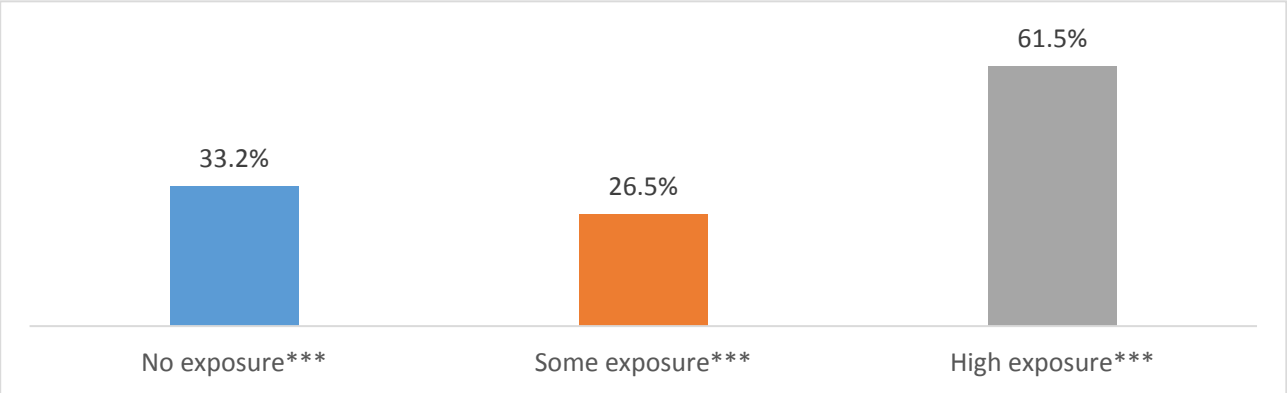


Figure 8 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting STI screening and treatment in the previous 6 months*
****p<.001*

Table 23 shows the results of the binary logistic regression model to explain factors associated with EW receiving STI screening/treatment in the previous six months. Age, education, income, mobility and stigma/discrimination showed no statistically significant impacts. However, suspicion of ever having an STI was associated with STI screening (odds ratio 1.55, p = 0.001), the risk index showed no significant association. Having had an individual or group meeting with an outreach worker in the previous six months doubled the likelihood of STI screening/treatment in the previous six months (odds ratio 2.11, p = 0.000 and odds ratio 2.06, p = 0.000, respectively). High exposure to outreach education printed materials also increased the likelihood of STI screening (odds ratio 1.46, p = 0.040).

Table 23 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on STI screening and treatment in the past 6 months

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	1.15	0.1747	0.029	0.0319
31 years and above	1.22	0.2223	0.041	0.0386
Education				
Under 1 year – reference				
1-6 years	0.96	0.1983	-0.009	0.0435
7 years and above	1.06	0.2372	0.012	0.0472
Income				
Under $150 – reference				
$150 - $250	1.25	0.2599	0.047	0.0430
$250 - $300	1.21	0.3003	0.040	0.0517
$300 - $500	1.12	0.2441	0.023	0.0451
$500 and above	1.12	0.2701	0.023	0.0501
Marital status				
Single - reference				
Having partner/boyfriend	1.05	0.1900	0.010	0.1900
Married(having husband)	1.16	0.3467	0.032	0.0631
Divorced/separated/widowed	0.97	0.2400	-0.006	0.0517
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.13	0.2227	0.027	0.0416
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	1.21	0.2620	0.040	0.0464
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	0.86	0.1441	-0.033	0.0350
Disclosed status as sex worker (0=no, 1=yes)	0.76*	0.0941	-0.058*	0.0259
Ever suspected having any STI (0=no, 1=yes)	1.55**	0.2031	0.092**	0.0270
Risk index				
Low risk – reference				
Medium risk	1.34*	0.1905	0.062*	0.0302
High risk	1.03	0.1608	0.006	0.0325
Stigma and discrimination index				
Low – reference				
Medium	0.98	0.1513	-0.003	0.0318
High	1.22	0.1894	0.042	0.0323
Individual meeting with OW in the past 6 months (0=no, 1=yes)	2.11***	0.4120	0.157***	0.0401
Group meeting with OW in the past 6 months (0=no, 1=yes)	2.06***	0.3126	0.152***	0.0307
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	1.50	0.3820	0.085	0.0534
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	0.99	0.1629	-0.002	0.0349
High exposure	1.46*	0.2681	0.082*	0.0407
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	1.31	0.2495	0.057	0.0399
Visited SMARTgirl Khmer website (0=no, 1=yes)	2.23	1.4946	0.169	0.1408
Visited SMARTgirl Facebook (0=no, 1=yes)	1.44	0.5933	0.076	0.0867
Called Voice4U (1295) (0=no, 1=yes)	1.23	0.4806	0.043	0.0822

N=1300, Wald chi-square=163.92, df=29, Sig. Level=0.000, Pseudo R-square=0.1121

14.2.2. HIV Testing (Any Type)

Figures 9 and 10 show the impact of geographic area and program exposure on the probability of an EW receiving HTC in the previous six months, controlling for confounders as described in Annex I, tables 39 and 40. EW in all program geographic areas were more likely to have received HTC in the previous six months than EW located in areas without a program. At 67.2% probability, EW in Non-Flagship geographic areas had the highest probability of receiving HTC in the previous six months, while EW in CoE geographic areas had a 58.5% probability, EW in Flagship TA geographic areas had a 61% probability, and EW in no program areas only had a 48.1% probability of receiving HTC in the previous six months.

Program exposure had a notable impact on the probability of an EW receiving HTC in the previous six months. While EW with no exposure had only a 44% probability of HTC in the previous six months, highly exposed EW had a 79.4% probability.

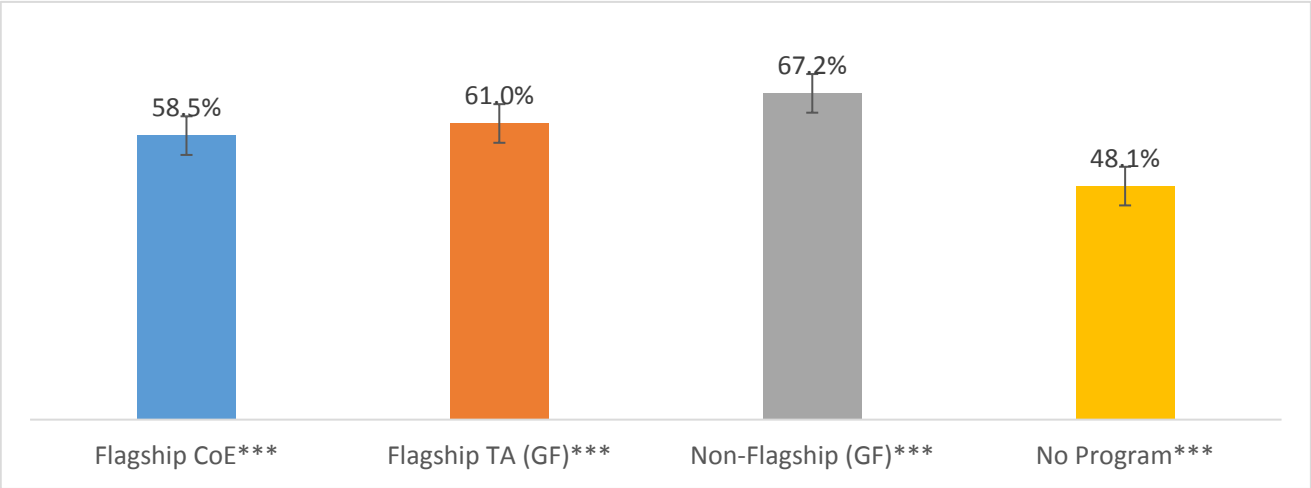


Figure 9 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV testing (any type) in the previous 6 months*
****p<0.001*

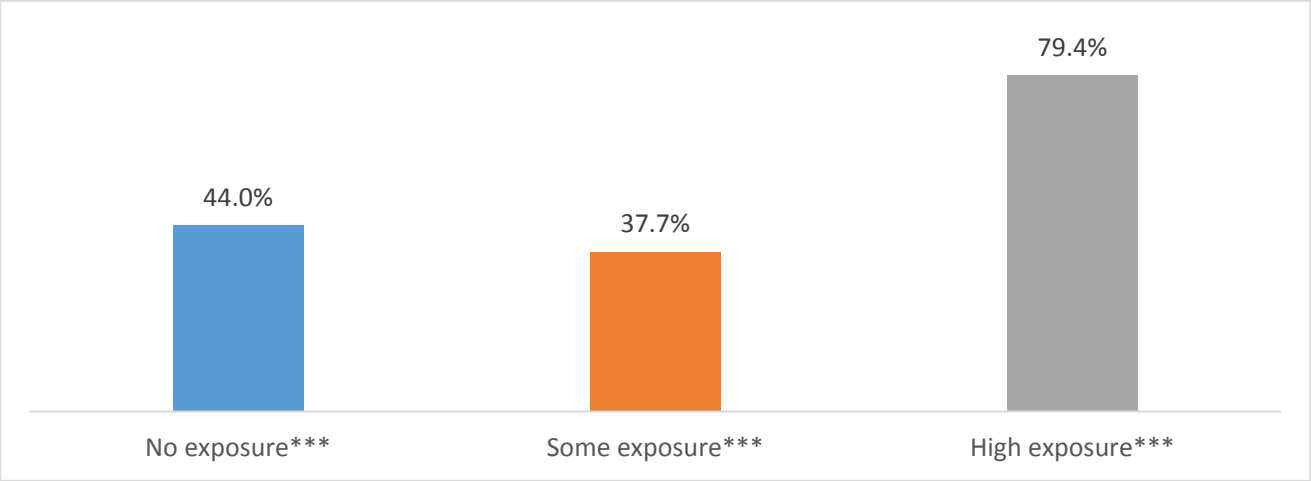


Figure 10 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV testing (any type) in the previous 6 months*
****p<0.001*

Table 24 shows the results of the binary logistic regression model to elucidate the factors associated with EW receiving HTC in the previous six months. Age, education, income, mobility and stigma/discrimination showed no statistically significant effects. Similarly, exposure to outreach education printed materials and receipt of the SMARTgirl service directory guide showed no impact while having had an individual or group meeting with an outreach worker in the previous six months greatly increased the likelihood of getting an HTC in the previous six months (odds ratio 5.56, p = 0.000 and odds ratio 3.34, p = 0.000, respectively). Having visited the SMARTgirl Facebook page also showed an impact on receiving HTC (odds ratio 4.13, p = 0.018).

Table 24 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on any type of HIV testing in the past 6 months

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	1.14	0.1759	0.027	0.0310
31 years and above	1.05	0.1926	0.010	0.0371
Education				
Under 1 year – reference				
1-6 years	0.85	0.1838	-0.033	0.0435
7 years and above	0.99	0.2302	-0.001	0.0466
Income				
Under $150 – reference				
$150 - $250	1.24	0.2548	0.044	0.0414
$250 - $300	0.99	0.2475	-0.001	0.0505
$300 - $500	1.18	0.2543	0.034	0.0435
$500 and above	1.19	0.2900	0.035	0.0494
Marital status				
Single - reference				
Having partner/boyfriend	0.96	-0.1700	-0.009	-0.1700
Married(having husband)	0.80	0.2492	-0.045	0.0624
Divorced/separated/widowed	0.78	0.1942	-0.051	0.0500
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.28	0.2563	0.049	0.0410
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.95	0.2082	-0.011	0.0443
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	0.81	0.1360	-0.041	0.0331
Disclosed status as sex worker (0=no, 1=yes)	0.86	0.1090	-0.030	0.0254
Ever suspected contracting HIV (0=no, 1=yes)	0.78	0.1040	-0.050	0.0267
Risk index				
Low risk – reference				
Medium risk	1.36*	0.1979	0.061*	0.0294
High risk	1.13	0.1785	0.025	0.0321
Stigma and discrimination index				
Low – reference				
Medium	1.25	0.1984	0.045	0.0317
High	1.39*	0.2184	0.066*	0.0311
Individual meeting with OW in the past 6 months (0=no, 1=yes)	5.56***	1.5735	0.346***	0.0544
Group meeting with OW in the past 6 months (0=no, 1=yes)	3.34***	0.5686	0.243***	0.0315
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	1.68	0.6314	0.104	0.0756

Table 24 *Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on any type of HIV testing in the past 6 months (Continued)*

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	0.92	0.1422	-0.018	0.0318
High exposure	1.24	0.2291	0.044	0.0380
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	0.81	0.1772	-0.041	0.0439
Visited SMARTgirl Khmer website (0=no, 1=yes)	0.42	0.3039	-0.173	0.1438
Visited SMARTgirl Facebook (0=no, 1=yes)	4.13*	2.4897	0.286*	0.1196
Called Voice4U (1295) (0=no, 1=yes)	1.75	0.8656	0.112	0.1002
Constant	0.69	0.2792		
N	1300			
Wald chi-square	163.47			
Degree of freedom	29			
Sig. Level	0.000			
Pseudo R-square	0.1454			

14.2.3. HIV Finger Prick Test (CBHTC)

Figures 11 and 12 show the impact of geographic area and program exposure on the probability of an EW receiving CBHTC in the previous six months, controlling for confounders as described in Annex I, tables 41 and 42. EW in Non-Flagship geographic areas had a 56.6%% probability of receiving CBHTC in the previous six months, while EW in CoE geographic areas had a 48.7% probability, EW in Flagship TA geographic areas had a 52.3% probability, and EW in no program areas only had a 36.8% probability of receiving CBHTC in the previous six months.

Program exposure had a significant impact on the probability of an EW receiving CBHTC in the previous six months. While EW with no exposure had only a 32.5% probability of CBHTC in the previous six months, highly exposed EW had a 72.3% probability.

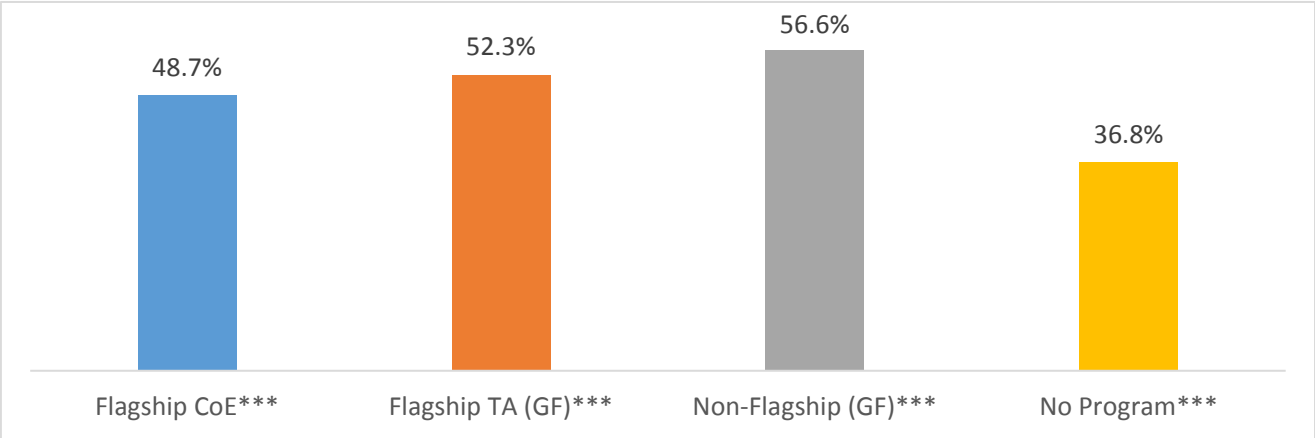


Figure 11 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV finger prick testing in the past 6 months ***p<0.001*

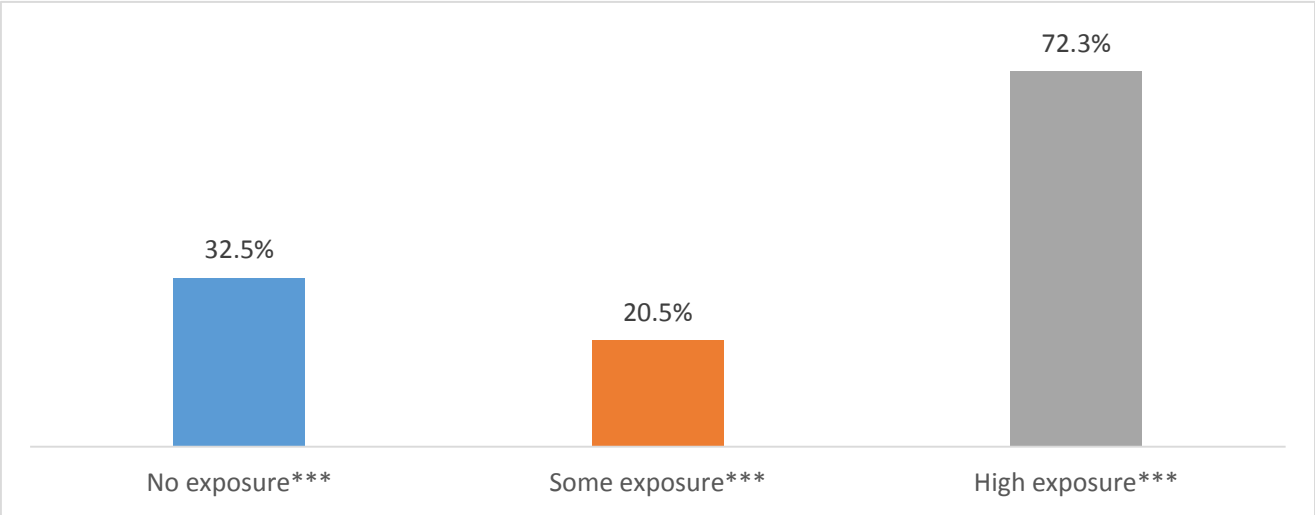


Figure 12 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV finger prick testing in the past 6 months ***p<0.001*

Table 25 shows the results of the binary logistic regression model explaining the factors associated with EW receiving CBHTC in the previous six months. Age, education, income, mobility and stigma/discrimination showed no statistically significant impacts. Exposure to related social media, outreach education printed materials and receipt of the SMARTgirl service directory guide also showed no impact. Similar to what was seen for overall HTC access, having had an individual or group meeting with an outreach worker in the previous six months greatly increased the likelihood of receiving HTC in the previous six months (odds ratio 5.56, p = 0.000 and odds ratio 3.99, p = 0.000, respectively).

Table 25 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on HIV finger prick testing in the past 6 months

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	1.01	0.1574	0.001	0.0303
31 years and above	0.87	0.1661	-0.027	0.0366
Education				
Under 1 year – reference				
1-6 years	0.90	0.2021	-0.019	0.0432
7 years and above	1.06	0.2534	0.012	0.0463
Income				
Under $150 – reference				
$150 - $250	1.16	0.2401	0.029	0.0398
$250 - $300	1.00	0.2513	0.000	0.0482
$300 - $500	0.94	0.2042	-0.011	0.0414
$500 and above	0.93	0.2344	-0.014	0.0481
Marital status				
Single - reference				
Having partner/boyfriend	0.95	-0.2200	-0.011	-0.2200
Married(having husband)	0.83	0.2609	-0.036	0.0612
Divorced/separated/widowed	0.74	0.1845	-0.059	0.0491

Table 25 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on HIV finger prick testing in the past 6 months (Continued)

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.27	0.2559	0.046	0.0393
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	1.03	0.2274	0.005	0.0428
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	0.90	0.1548	-0.019	0.0328
Disclosed status as sex worker (0=no, 1=yes)	0.91	0.1183	-0.017	0.0249
Ever suspected contracting HIV (0=no, 1=yes)	0.77	0.1039	-0.051	0.0259
Risk index				
Low risk – reference				
Medium risk	1.36*	0.2029	0.060*	0.0288
High risk	1.23	0.1995	0.040	0.0311
Stigma and discrimination index				
Low – reference				
Medium	1.18	0.1902	0.031	0.0304
High	1.34	0.2188	0.056	0.0306
Individual meeting with OW in the past 6 months (0=no, 1=yes)	5.56***	1.4074	0.330***	0.0456
Group meeting with OW in the past 6 months (0=no, 1=yes)	3.99***	0.6497	0.267***	0.0277
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	1.76	0.6044	0.109	0.0657
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	0.89	0.1472	-0.022	0.0319
High exposure	1.06	0.2022	0.012	0.0374
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	0.93	0.1928	-0.014	0.0400
Visited SMARTgirl Khmer website (0=no, 1=yes)	0.33	0.2108	-0.216	0.1234
Visited SMARTgirl Facebook (0=no, 1=yes)	2.77*	1.3518	0.196*	0.0932
Called Voice4U (1295) (0=no, 1=yes)	1.45	0.5657	0.072	0.0752
Constant	0.43*	0.1747		
N	1300			
Wald chi-square	213.90			
Degree of freedom	29			
Sig. Level	0.000			
Pseudo R-square	0.1788			

14.2.4. Stigma and Discrimination

Figures 13 and 14 show the impact of geographic area and program exposure on the probability of EW experiencing stigma and discrimination in the previous 12 months, controlling for confounders as described in Annex I, tables 43 and 44. EW in no program geographic areas had the highest probability of reporting high stigma and discrimination at 61.7%, followed by EW in Flagship TA geographic areas at 51.8%, EW in Non-Flagship areas at 42.5%, and EW in CoE geographic areas at 42.5%.

Program exposure had a significant impact on the probability of an EW experiencing high stigma and discrimination. While EW with no exposure had a 59.6% probability of experiencing high stigma and discrimination, highly exposed EW had only a 37.8% probability of this, and EW with some exposure had a 52.2% probability.

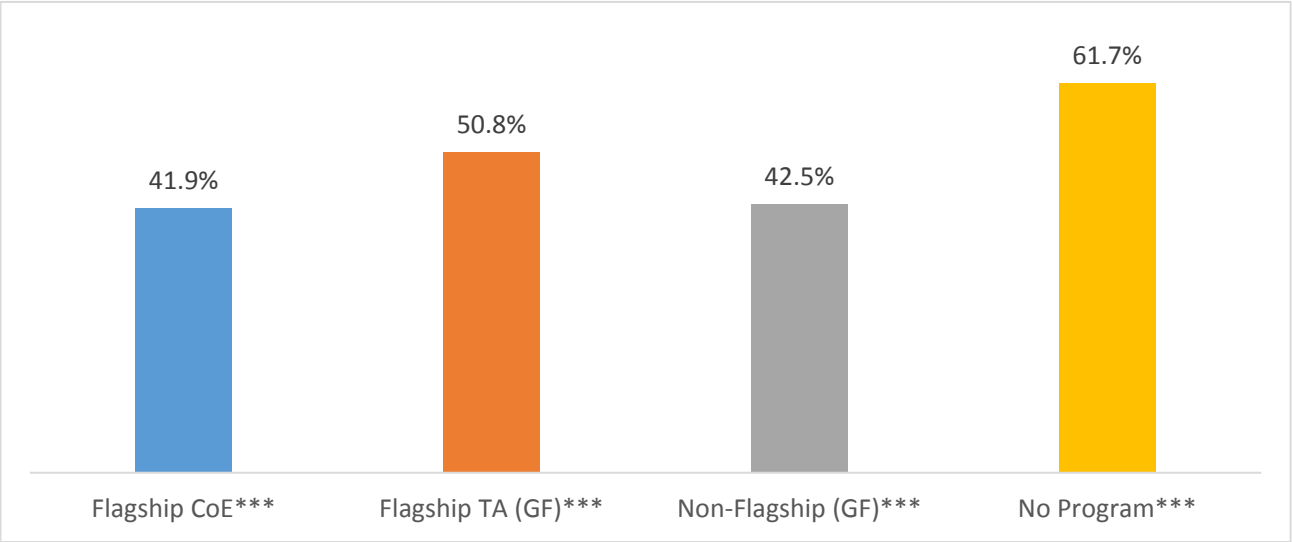


Figure 13 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of being in high stigma and discrimination*
****p<0.001*

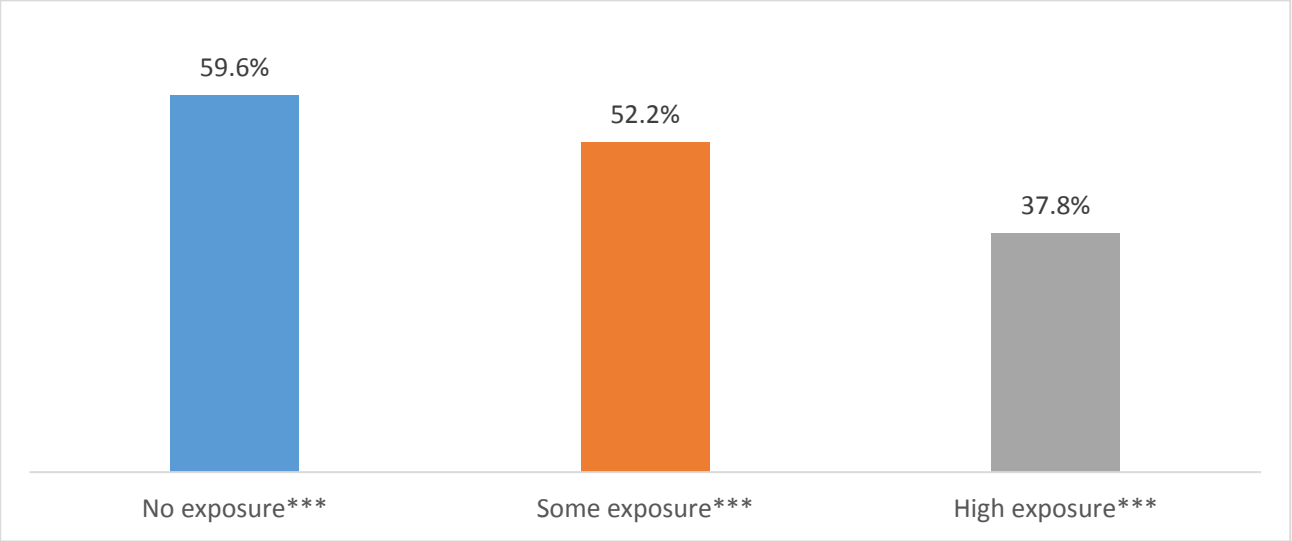


Figure 14 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of being in high stigma and discrimination*
****p<0.001*

Table 26 shows the results of the binary logistic regression model highlighting the factors associated with EW experiencing stigma and discrimination in the previous 12 months as measured by the stigma and discrimination index. EW aged 25-30 years of age were less likely to report high stigma and discrimination than their younger counterparts (odds ratio 0.666, p = 0.006), as did EW with higher monthly incomes. For example, EW with incomes $300 – $500/month were about half as likely to report high stigma and discrimination as EW with incomes of less than $150/month (odds ratio 0.564, p = 0.008).

Having had an individual or group meeting with an outreach worker in the past six months greatly reduced the likelihood of reporting high stigma and discrimination (odds ratio 0.644, p = 0.021 and odds ratio 0.618, p = 0.001, respectively).

Table 26 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTGirl program on high stigma and discrimination

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	0.666**	0.0989	-0.090**	0.0327
31 years and above	0.971	0.1709	-0.007	0.0389
Education				
Under 1 year – reference				
1-6 years	1.197	0.2411	0.040	0.0451
7 years and above	0.628*	0.1354	-0.104*	0.0482
Income				
Under $150 – reference				
$150 - $250	0.868	0.1823	-0.031	0.0461
$250 - $300	0.607*	0.1514	-0.111*	0.0551
$300 - $500	0.564**	0.1220	-0.127**	0.0477
$500 and above	0.659	0.1577	-0.093	0.0530
Marital status				
Single - reference				
Having partner/boyfriend	1.0721	0.290	0.0153	0.290
Married(having husband)	0.892	0.2556	-0.025	0.0630
Divorced/separated/widowed	0.914	0.2096	-0.020	0.0504
Duration living in current location				
Less than 12 months – reference				
12 months and above	0.638*	0.1168	-0.100*	0.0409
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.962	0.1991	-0.009	0.0457
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.234	0.2074	0.046	0.0362
Disclosed status as sex worker (0=no, 1=yes)	1.014	0.1229	0.003	0.0266
Ever suspected contracting HIV (0=no, 1=yes)	1.253	0.1623	0.050	0.0283
Risk index				
Low risk – reference				
Medium risk	0.965	0.1361	-0.008	0.0310
High risk	1.004	0.1500	0.001	0.0329
Individual meeting with OW in the past 6 months (0=no, 1=yes)	0.644*	0.1224	-0.097*	0.0415
Group meeting with OW in the past 6 months (0=no, 1=yes)	0.618*	0.0927	-0.106**	0.0324
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	0.616	0.1695	-0.106	0.0601
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	0.869	0.1349	-0.031	0.0343
High exposure	0.862	0.1523	-0.033	0.0393
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	0.634*	0.1242	-0.100*	0.0427
Visited SMARTgirl Khmer website (0=no, 1=yes)	1.729	1.1669	0.120	0.1482
Visited SMARTgirl Facebook (0=no, 1=yes)	0.385*	0.1868	-0.210*	0.1059
Called Voice4U (1295) (0=no, 1=yes)	1.928	0.7610	0.144	0.0865
Constant	2.920**	1.0251		

N=1300, Wald chi-square=127.99, df=27, Sig. Level=0.000, Pseudo R-square=0.0920

14.2.5. Condom Use

Table 27 shows the results of the binary logistic regression model of the factors associated with EW reporting use of a condom at their last sex with a client. Overall, geographic areas with programs appeared to have a lower likelihood of EW condom use at the last sex with a client, EW in Flagship TA areas showed a statistically significant lower likelihood of condom use (odds ratio 0.474, p = 0.002) when compared to the non-program areas.

Interestingly, EW with monthly incomes of $500 or more had more than twice the likelihood of using condoms at last sex with a client (odds ratio 2.218, p = 0.025). Compared to single women, EW that had a partner/boyfriend or that were divorced/separated/widowed were less likely to use a condom (odds ratio 0.262, p = 0.004 and odds ratio 0.404, p = 0.048, respectively). EW that had been engaged in sex work for 12 months or more and EW that had disclosed their status as sex worker were nearly twice as likely to have reported condom use (odds ratio 1.864, p = 0.008 and odds ratio 1.784, p = 0.001, respectively).

Table 27 Binary Logistic Regression Model: The effect of geographic area on condom use at last sex with client

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Geographic area				
No program – reference				
Flagship CoE	0.869	0.22485	-0.014	0.02503
Flagship TA (GF)	0.474**	0.11311	-0.088**	0.02806
Non-Flagship (GF)	0.720	0.19341	-0.034	0.02801
Age				
18-24 years – reference				
25-30 years	0.938	0.19500	-0.007	0.02409
31 years and above	1.299	0.32189	0.027	0.02568
Education				
Under 1 year – reference				
1-6 years	0.551	0.18896	-0.056*	0.02757
7 years and above	0.522	0.18622	-0.062*	0.02989
Income				
Under $150 – reference				
$150 - $250	1.228	0.35759	0.025	0.03682
$250 - $300	0.684	0.21298	-0.055	0.04412
$300 - $500	1.549	0.46921	0.050	0.03669
$500 and above	2.218*	0.78737	0.081*	0.03787
Marital status				
Single - reference				
Having partner/boyfriend	0.262**	0.12018	-0.134***	0.03298
Married (having husband)	2.325	1.58276	0.035	0.02942
Divorced/separated/widowed	0.404*	0.18538	-0.077**	0.02922
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.066	0.26121	0.007	0.02734
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.731	0.20532	-0.035	0.03178
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.864**	0.43719	0.073*	0.02871
Disclosed status as sex worker (0=no, 1=yes)	1.784**	0.31009	0.064**	0.01916
Ever suspected having STI (0=no, 1=yes)	1.006	0.18582	0.001	0.02052
Ever suspected contracting HIV (0=no, 1=yes)	0.951	0.17743	-0.006	0.02073
Stigma and discrimination index				
Low – reference				
Medium	0.930	0.19492	-0.008	0.02343
High	0.990	0.21194	-0.001	0.02347

N=1300, Wald chi-square=76.20, df=22, Sig. Level=0.000, Pseudo R-square=0.0831

Table 28 shows that the level of program exposure had no impact on EW use of a condom at their last sex with a client.

Table 28 Binary Logistic Regression Model: The effect of program exposure on condom use at last sex with client

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Program exposure				
No exposure – reference				
Some exposure	1.057	0.34060	0.006	0.03484
High exposure	0.960	0.18628	-0.005	0.02197
Age				
18-24 years – reference				
25-30 years	0.947	0.19534	-0.006	0.02423
31 years and above	1.319	0.32677	0.029	0.02590
Education				
Under 1 year – reference				
1-6 years	0.537	0.18648	-0.058	0.02758
7 years and above	0.508	0.18165	-0.065*	0.02957
Income				
Under $150 – reference				
$150 - $250	1.281	0.37411	0.030	0.03678
$250 - $300	0.685	0.21510	-0.055	0.04476
$300 - $500	1.438	0.43456	0.042	0.03718
$500 and above	2.046*	0.72561	0.075	0.03860
Marital status				
Single - reference				
Having partner/boyfriend	0.269**	0.12365	-0.129***	0.03239
Married (having husband)	2.225	1.50892	0.033	0.02897
Divorced/separated/widowed	0.386*	0.17599	-0.081**	0.02869
Duration living in current location				
Less than 12 months – reference				
12 months and above	0.942	0.23019	-0.007	0.02735
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.813	0.23039	-0.023	0.03223
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.776*	0.41943	0.068*	0.02906
Disclosed status as sex worker (0=no, 1=yes)	1.762**	0.30430	0.064**	0.01931
Ever suspected having STI (0=no, 1=yes)	1.004	0.18469	0.000	0.02067
Ever suspected contracting HIV (0=no, 1=yes)	0.910	0.16745	-0.011	0.02069
Stigma and discrimination index				
Low – reference				
Medium	0.927	0.19139	-0.009	0.02337
High	0.989	0.21269	-0.001	0.02383

N=1300, Wald chi-square=67.43, df=21, Sig. Level=0.000, Pseudo R-square=0.0723

Table 29 shows the impact of different program components on EW use of a condom at their last sex with a client. No statistically significant impacts were seen with regard to individual or group meetings with outreach workers, visits to SMARTgirl club nor receipt of the SMARTgirl service directory. Having received a training or demonstration on condom use increased the likelihood of condom use (odds ratio 1.741, p = 0.012) as did exposure to outreach education printed materials (for EW with "some exposure" odds ratio 1.728, p = 0.027). There were strong and statistically significant relationships based on where EW got their last condom supply. Compared to EW that got condoms from a SMARTgirl outreach worker, those that got their last condoms from a "Guesthouse/brothel/massage parlor/Karaoke/Spa/Sauna/Beer garden" or bought them from "Store/gas station/vendor/ pharmacy" were three times more likely to use a condom

with their last client (odds ratio 3.566, p = 0.000 and odds ratio 3.105, p = 0.002, respectively), and those that got condoms from their client were six times more likely to use a condom with their last client (odds ratio 6.269, p = 0.000).

Table 29 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on condom use at last sex with client

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	0.767	0.17888	-0.025	0.02173
31 years and above	1.109	0.33917	0.009	0.02624
Education				
Under 1 year – reference				
1-6 years	0.536	0.22516	-0.049	0.02886
7 years and above	0.474	0.20336	-0.061*	0.03052
Income				
Under $150 – reference				
$150 - $250	1.473	0.48119	0.039	0.03425
$250 - $300	0.732	0.25638	-0.037	0.04071
$300 - $500	1.589	0.53094	0.046	0.03461
$500 and above	2.675*	1.08951	0.085*	0.03635
Marital status				
Single - reference				
Having partner/boyfriend	0.400	0.18976	-0.079*	0.03459
Married(having husband)	3.533	2.63325	0.056	0.03354
Divorced/separated/widowed	0.474	0.22366	-0.061	0.03264
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.050	0.27993	0.005	0.02469
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.779	0.25018	-0.023	0.02981
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.376	0.37175	0.030	0.02617
Disclosed status as sex worker (0=no, 1=yes)	1.908**	0.37229	0.060**	0.01754
Ever suspected having STI (0=no, 1=yes)	0.976	0.20845	-0.002	0.01972
Ever suspected contracting HIV (0=no, 1=yes)	0.829	0.16766	-0.017	0.01871
Individual meeting with OW in the past 6 months (0=no, 1=yes)	1.317	0.40968	0.025	0.02863
Group meeting with OW in the past 6 months (0=no, 1=yes)	0.830	0.22893	-0.017	0.02546
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	0.840	0.35063	-0.016	0.03850
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	1.728*	0.42700	0.052*	0.02427
High exposure	1.422	0.41356	0.035	0.02921
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	1.161	0.37041	0.014	0.02943
Visited SMARTgirl Khmer website (0=no, 1=yes)	3.690	4.05760	0.120	0.10159
Visited SMARTgirl Facebook (0=no, 1=yes)	0.289*	0.15498	-0.115*	0.04917
Called Voice4U (1295) (0=no, 1=yes)	2.183	1.39881	0.072	0.05908
Received training/demonstration on condom use (0=never, 1=ever)	1.741*	0.38373	0.051*	0.02019
Place to obtain condom in last time				
SMARTgirl OW – reference				
SMARTgirl club	1.046	0.81224	0.007	0.11376
Street-based sale	5.530	6.18640	0.160*	0.06593
NGO/outreach worker/DIC (not SMARTgirl)	0.185*	0.15256	-0.323	0.16638
Store/gas station/vendor/ pharmacy	3.105**	1.15856	0.125**	0.04556
Guesthouse/brothel/massage parlor/Karaoke/Spa/Sauna/Beer garden	3.566***	1.22031	0.135**	0.04338
Client	6.269***	2.75583	0.166***	0.04406
Sexual partner/sweetheart	0.460*	0.15959	-0.135*	0.05838
Friend	2.334	2.06021	0.102	0.08763
Family health clinic/health center	1.151	0.71471	0.020	0.08781
Other	0.094***	0.05439	-0.458***	0.10265

N=1300, Wald chi-square=180.39, df=37, Sig. Level=0.000, Pseudo R-square=0.2299

14.2.6. Referrals for STI Screening and Treatment

Table 30 shows that, based on the results of the binary logistic regression model, EW in the three geographic areas served by the programs were overwhelmingly more likely to have a referral for STI screening/treatment in the previous six months than those in no program areas, with odds ratios ranging from 7.580 to 9.704. These differences were statistically significant, p = 0.000.

Table 30 Binary Logistic Regression Model: The effect of geographic area on referral for STI screening and treatment in the last 6 months

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Geographic area				
No program – reference				
Flagship CoE	8.962***	3.76244	0.133***	0.02140
Flagship TA (GF)	7.580***	3.28160	0.113***	0.02206
Non-Flagship (GF)	9.704***	4.18297	0.143***	0.02323
Age				
18-24 years – reference				
25-30 years	1.215	0.28299	0.019	0.02180
31 years and above	0.973	0.28019	-0.002	0.02548
Education				
Under 1 year – reference				
1-6 years	0.481*	0.13718	-0.080*	0.03542
7 years and above	0.527*	0.16331	-0.072	0.03770
Income				
Under $150 – reference				
$150 - $250	1.259	0.40847	0.023	0.03125
$250 - $300	0.648	0.26925	-0.035	0.03359
$300 - $500	1.057	0.34991	0.005	0.03095
$500 and above	0.928	0.34495	-0.007	0.03380
Marital status				
Single - reference				
Having partner/boyfriend	1.221	0.49382	0.016	0.03158
Married (having husband)	1.866	0.79435	0.058	0.03731
Divorced/separated/widowed	1.432	0.56063	0.031	0.03068
Duration living in current location				
Less than 12 months – reference				
12 months and above	0.606	0.17499	-0.050	0.03007
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	2.128*	0.62639	0.069**	0.02617
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.652	0.45964	0.044	0.02225
Disclosed status as sex worker (0=no, 1=yes)	0.948	0.17309	-0.005	0.01708
Ever suspected having STI (0=no, 1=yes)	1.486*	0.28838	0.037*	0.01811
Risk index				
Low risk – reference				
Medium risk	1.433	0.31228	0.034	0.02054
High risk	1.228	0.28516	0.018	0.02097
Stigma and discrimination index				
Low – reference				
Medium	0.686	0.14616	-0.039	0.02173
High	0.431**	0.10571	-0.075***	0.02069
Constant	0.016***	0.01140		
N	*1300*			
Wald chi-square	*100.32*			
Degree of freedom	*23*			
Sig. Level	*0.000*			
Pseudo R-square	*0.1393*			

Table 31 shows that, based on the results of the binary logistic regression model, exposure to the program strongly impacted referral for STI screening/treatment in the last six months. The odds ratio for EW with a medium level of program exposure receiving a referral for STI screening/treatment was 3.036 (p = 0.029) and the odds ratio for EW with a high level of exposure was 18.885 (p = 0.000).

Table 31 Binary Logistic Regression Model: The effect of program exposure on referral for STI screening and treatment in the last 6 months

Variable	**Odds ratio**	**Robust Std. Err.**	**Predicted Probability**	**Robust Std. Err.**
Geographic area				
No exposure – reference				
Medium exposure	3.036*	1.54331	0.033	0.01927
High exposure	18.885***	6.83641	0.220***	0.02126
Age				
18-24 years – reference				
25-30 years	1.119	0.26605	0.010	0.02041
31 years and above	0.977	0.29231	-0.002	0.02494
Education				
Under 1 year – reference				
1-6 years	0.597	0.17600	-0.049	0.02984
7 years and above	0.593	0.18584	-0.049	0.03119
Income				
Under $150 – reference				
$150 - $250	1.179	0.38870	0.015	0.02989
$250 - $300	0.593	0.25932	-0.041	0.03363
$300 - $500	0.922	0.32205	-0.007	0.03066
$500 and above	0.841	0.32214	-0.015	0.03286
Marital status				
Single - reference				
Having partner/boyfriend	1.193	0.50335	0.013	0.03114
Married (having husband)	2.167	0.95707	0.069	0.03673
Divorced/separated/widowed	1.395	0.55830	0.026	0.02954
Duration living in current location				
Less than 12 months – reference				
12 months and above	0.574	0.21841	-0.050	0.03499
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	2.260*	0.83637	0.068*	0.02952
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.248	0.35689	0.018	0.02310
Disclosed status as sex worker (0=no, 1=yes)	0.932	0.17693	-0.006	0.01626
Ever suspected having STI (0=no, 1=yes)	1.472	0.29802	0.033	0.01726
Risk index				
Low risk – reference				
Medium risk	1.277	0.29004	0.021	0.01962
High risk	1.107	0.26801	0.008	0.02023
Stigma and discrimination index				
Low – reference				
Medium	0.740	0.16353	-0.027	0.01944
High	0.619	0.15970	-0.041	0.02107
Constant	0.016***	0.01007		
N	1300			
Wald chi-square	*140.92*			
Degree of freedom	*22*			
Sig. Level	*0.000*			
Pseudo R-square	*0.2336*			

Table 32 shows that of the SMARTgirl program elements, having individual or group meeting with outreach workers in the previous six months strongly predicted receiving a referral for STI screening/treatment in the previous six months (odds ratio 3.288, p=0.000 and odds ratio 4.295, p=0.000). In addition, having visited a SMARTgirl club in the previous six months was strongly associated with receipt of a referral for STI screening/treatment (odds ratio 2.087, p=0,007), as was having had a higher level of exposure to outreach education printed materials (odds ratio 6.634, p=0.001).

Table 32 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on referral for STI screening and treatment in the last 6 months

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	1.151	0.30210	0.011	0.01956
31 years and above	0.919	0.30032	-0.006	0.02328
Education				
Under 1 year – reference				
1-6 years	0.512*	0.16496	-0.056	0.02922
7 years and above	0.479*	0.16723	-0.061*	0.03073
Income				
Under $150 – reference				
$150 - $250	1.279	0.47148	0.020	0.02856
$250 - $300	0.542	0.25977	-0.040	0.03152
$300 - $500	0.894	0.35961	-0.008	0.02994
$500 and above	0.870	0.37327	-0.010	0.03165
Marital status				
Single - reference				
Having partner/boyfriend	1.196	0.51296	0.012	0.02858
Married(having husband)	2.004	0.95162	0.053	0.03546
Divorced/separated/widowed	1.316	0.54748	0.019	0.02772
Duration living in current location				
Less than 12 months – reference				
12 months and above	0.498	0.21105	-0.054	0.03358
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	2.151	0.85779	0.056	0.02867
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.351	0.41083	0.022	0.02118
Disclosed status as sex worker (0=no, 1=yes)	0.845	0.17949	-0.012	0.01569
Ever suspected having STI (0=no, 1=yes)	1.335	0.29513	0.021	0.01629
Risk index				
Low risk – reference				
Medium risk	1.262	0.31170	0.017	0.01855
High risk	1.039	0.27253	0.003	0.01881
Stigma and discrimination index				
Low – reference				
Medium	0.909	0.21751	-0.007	0.01796
High	0.832	0.23458	-0.014	0.02061
Individual meeting with OW in the past 6 months (0=no, 1=yes)	3.288***	0.76296	0.088***	0.01643
Group meeting with OW in the past 6 months (0=no, 1=yes)	4.295***	1.06238	0.108***	0.01746
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	2.082**	0.56550	0.054**	0.01961
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	2.834	1.59159	0.052*	0.02427
High exposure	6.634**	3.67000	0.035	0.02921

Table 32 *Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on referral for STI screening and treatment in the last 6 months (Continued)*

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	1.046	0.26281	0.014	0.02943
Visited SMARTgirl Khmer website (0=no, 1=yes)	5.907**	3.95587	0.120	0.10159
Visited SMARTgirl Facebook (0=no, 1=yes)	1.364	0.73465	-0.115*	0.04917
Called Voice4U (1295) (0=no, 1=yes)	0.341*	0.16302	0.072	0.05908
Constant	0.010***	0.00772		
N	*1300*			
Wald chi-square	*210.14*			
Degree of freedom	*29*			
Sig. Level	*0.0000*			
Pseudo R-square	*0.3183*			

14.2.7. HIV/STI Prevention Knowledge

Table 33 shows that geographical location within the catchment of the Flagship Centre of Excellence measurably impacted knowledge of HIV/STI prevention among EW (odds ratio 1.736, p = 0.001). Older EW were also more likely to have a high level of prevention knowledge (ages 25-30: odds ratio 1.736, p = 0.001 and ages >30: odds ratio 2.919, p = 0.000) as were EW engaged in sex work for 12 month or more (odds ratio 1.482, p=0.015).

Table 33 Binary Logistic Regression Model: The effect of geographic area on high prevention knowledge

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Geographic area				
No program – reference				
Flagship CoE	1.736**	0.29399	0.126**	0.03871
Flagship TA (GF)	1.059	0.17982	0.013	0.03822
Non-Flagship (GF)	1.177	0.21022	0.037	0.04053
Age				
18-24 years – reference				
25-30 years	1.619**	0.23679	0.110**	0.03307
31 years and above	2.919***	0.51114	0.250***	0.03964
Education				
Under 1 year – reference				
1-6 years	0.938	0.19322	-0.014	0.04626
7 years and above	1.247	0.27641	0.050	0.04982
Income				
Under $150 – reference				
$150 - $250	0.620*	0.13021	-0.109*	0.04779
$250 - $300	0.741	0.18441	-0.069	0.05688
$300 - $500	0.691	0.14961	-0.085	0.04944
$500 and above	0.782	0.19214	-0.056	0.05618
Marital status				
Single - reference				
Having partner/boyfriend	1.239	0.31694	0.047	0.05583
Married (having husband)	1.717	0.50341	0.122	0.06531
Divorced/separated/widowed	1.516	0.37345	0.093	0.05389
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.404	0.26488	0.077	0.04296

Table 33 *Binary Logistic Regression Model: The effect of geographic area on high prevention knowledge (Continued)*

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.688	0.14110	-0.082	0.04379
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.482*	0.24095	0.090*	0.03690
Disclosed status as sex worker (0=no, 1=yes)	1.005	0.12028	0.001	0.02705
Ever suspected having STI (0=no, 1=yes)	1.189	0.15561	0.039	0.02950
Ever suspected contracting HIV (0=no, 1=yes)	0.861	0.11280	-0.034	0.02954
Stigma and discrimination index				
Low – reference				
Medium	0.869	0.12636	-0.032	0.03315
High	0.777	0.11523	-0.057	0.03366
Constant	0.349**	0.13434		
N	*1300*			
Wald chi-square	*103.20*			
Degree of freedom	*22*			
Sig. Level	*0.000*			
Pseudo R-square	*0.0648*			

Table 34 shows that high exposure to the program strongly impacted having high HIV/STI prevention knowledge among EW (odds ratio 1.886, p = 0.000).

Table 34 Binary Logistic Regression Model: The effect of program exposure on high prevention knowledge

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Program exposure				
No exposure – reference				
Some exposure	1.365	0.27257	0.071	0.04584
High exposure	1.886***	0.25790	0.146***	0.03135
Age				
18-24 years – reference				
25-30 years	1.602**	0.23402	0.107**	0.03286
31 years and above	2.988***	0.52580	0.254***	0.03947
Education				
Under 1 year – reference				
1-6 years	0.968	0.19634	-0.007	0.04520
7 years and above	1.237	0.26998	0.048	0.04866
Income				
Under $150 – reference				
$150 - $250	0.617*	0.12919	-0.109*	0.04729
$250 - $300	0.725	0.17979	-0.073	0.05623
$300 - $500	0.655*	0.14094	-0.096*	0.04868
$500 and above	0.732	0.17900	-0.071	0.05540
Marital status				
Single - reference				
Having partner/boyfriend	1.294	0.32414	0.057	0.05432
Married (having husband)	1.687	0.48901	0.117	0.06407
Divorced/separated/widowed	1.476	0.35542	0.086	0.05230
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.383	0.25737	0.073	0.04210

Table 34 *Binary Logistic Regression Model: The effect of program exposure on high prevention knowledge (Continued)*

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.678	0.13834	-0.085*	0.04309
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.376	0.22586	0.072	0.03712
Disclosed status as sex worker (0=no, 1=yes)	1.004	0.12006	0.001	0.02682
Ever suspected having STI (0=no, 1=yes)	1.196	0.15563	0.040	0.02910
Ever suspected contracting HIV (0=no, 1=yes)	0.832	0.10860	-0.041	0.02920
Stigma and discrimination index				
Low – reference				
Medium	0.891	0.13093	-0.026	0.03314
High	0.859	0.12937	-0.034	0.03397
Constant	0.330**	0.12515		
N	*1300*			
Wald chi-square	*112.96*			
Degree of freedom	*21*			
Sig. Level	*0.000*			
Pseudo R-square	*0.0702*			

Table 35 shows that of the SMARTgirl program elements, only one was found to have an impact on measurable high prevention knowledge among EW: having received a training or demonstration on condom use increased the likelihood of condom use (odds ratio 2.650, p = 0.000). Notably, no statistically significant impacts were seen in meeting with SMARTgirl outreach workers or exposure to printed materials.

Table 35 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on high prevention knowledge

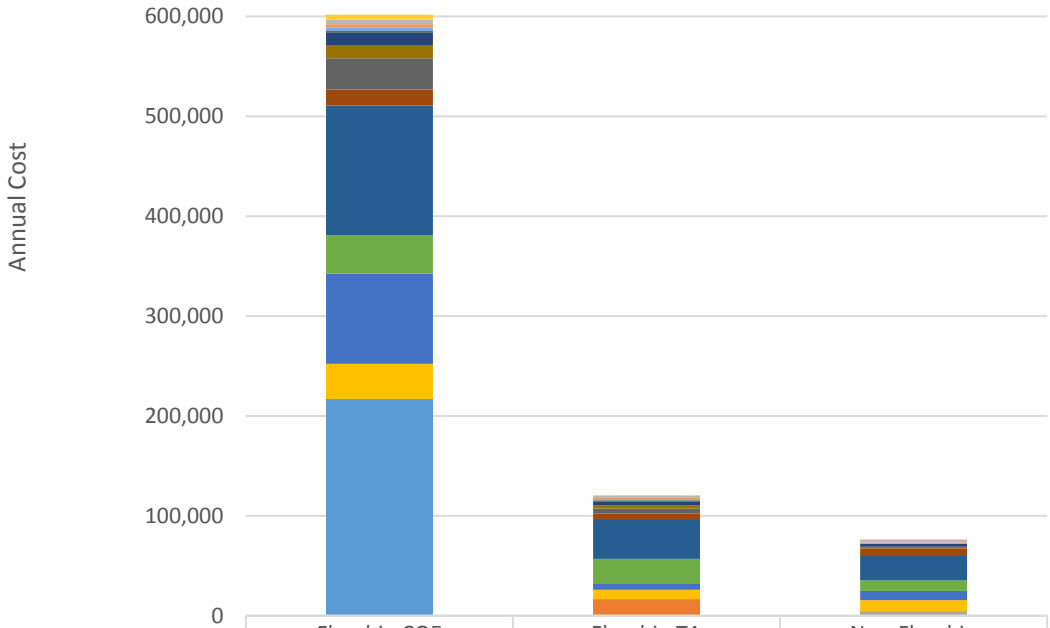
Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Age				
18-24 years – reference				
25-30 years	1.424*	0.22092	0.073*	0.03208
31 years and above	2.403***	0.46097	0.184***	0.04038
Education				
Under 1 year – reference				
1-6 years	0.946	0.20563	-0.011	0.04390
7 years and above	1.173	0.27432	0.032	0.04733
Income				
Under $150 – reference				
$150 - $250	0.651*	0.13961	-0.088*	0.04380
$250 - $300	0.825	0.21143	-0.039	0.05256
$300 - $500	0.648	0.14553	-0.088	0.04575
$500 and above	0.809	0.20460	-0.043	0.05189
Marital status				
Single - reference				
Having partner/boyfriend	1.212	0.30057	0.039	0.04933
Married(having husband)	1.566	0.45215	0.091	0.05836
Divorced/separated/widowed	1.419	0.32940	0.071	0.04631
Duration living in current location				
Less than 12 months – reference				
12 months and above	1.268	0.24994	0.049	0.04040
Duration working in current workplace				
Less than 12 months – reference				
12 months and above	0.692	0.15016	-0.073	0.04186

Table 35 Binary Logistic Regression Model: The effect of exposure to different activities of SMARTgirl program on high prevention knowledge (Continued)

Variable	Odds ratio	Robust Std. Err.	Predicted Probability	Robust Std. Err.
Duration engaged in sex work				
Less than 12 months – reference				
12 months and above	1.143	0.19878	0.027	0.03554
Disclosed status as sex worker (0=no, 1=yes)	0.917	0.11700	-0.018	0.02583
Ever suspected having STI (0=no, 1=yes)	1.113	0.15788	0.022	0.02875
Ever suspected contracting HIV (0=no, 1=yes)	0.805	0.11263	-0.044	0.02823
Individual meeting with OW in the past 6 months (0=no, 1=yes)	0.948	0.18327	-0.011	0.03917
Group meeting with OW in the past 6 months (0=no, 1=yes)	1.271	0.20492	0.049	0.03257
Visited SMARTgirl club in the past 6 months (0=no, 1=yes)	0.849	0.22732	-0.033	0.05422
Exposure to outreach education printed materials				
No exposure – reference				
Some exposure	0.850	0.14035	-0.033	0.03377
High exposure	1.329	0.25699	0.059	0.04073
Received a copy of the SMARTgirl service directory guide (0=no, 1=yes)	0.771	0.15309	-0.053	0.04022
Visited SMARTgirl Khmer website (0=no, 1=yes)	4.544	4.58048	0.307	0.20340
Visited SMARTgirl Facebook (0=no, 1=yes)	1.251	0.50031	0.045	0.08099
Called Voice4U (1295) (0=no, 1=yes)	1.933	0.80393	0.134	0.08389
Received training/demonstration on condom use (0=never, 1=ever)	2.650***	0.36803	0.198***	0.02613
Place to obtain condom in last time				
SMARTgirl OW – reference				
SMARTgirl club	0.826	0.61757	-0.041	0.16065
Street-based sale	0.357	0.26429	-0.215	0.14379
NGO/outreach worker/DIC (not SMARTgirl)	0.188*	0.13110	-0.325**	0.11135
Store/gas station/vendor/ pharmacy	0.897	0.23734	-0.023	0.05673
Guesthouse/brothel/massage parlor/Karaoke/Spa/Sauna/Beer garden	0.713	0.17696	-0.073	0.05335
Client	0.383***	0.10507	-0.201**	0.05778
Sexual partner/sweetheart	0.428**	0.12587	-0.179**	0.06193
Friend	0.860	0.45292	-0.032	0.11321
Family health clinic/health center	0.603	0.25485	-0.108	0.08979
Other	0.419	0.21984	-0.183	0.10647
Constant	0.468	0.20127		
N	*1300*			
Wald chi-square	*201.13*			
Degree of freedom	*37*			
Sig. Level	*0.000*			
Pseudo R-square	*0.1403*			

15. Cost Allocation

As shown in figure 15, there was wide variation in the total cost across program types, with the annual cost of the Flagship CoE areas ($601,617) approximately 5 times the annual cost of Flagship TA areas ($120,764), and approximately 8 times the annual cost of the Non-Flagship areas ($76,525). Description of cost allocation categories are found in Annex II. Omitting the higher level costs (TA and central office costs), the total cost in CoE areas would be approximately $259,064, compared to $88,953 in Flagship TA areas, and $51,663 in Non-Flagship areas.



	Flagship COE	Flagship TA	Non-Flagship
IP field office - Other	4,849	813	667
IP field office - referral to services	4,496	1,974	2,197
IP field office - monitoring & evaluation	3,191	1,247	624
IP field office - communication	3,750	1,143	893
IP field office - transportation	1,273	1,154	330
IP field office - meeting (field staff and outreach worker)	12,586	3,658	2,793
IP field office - capacity development	13,345	3,400	1,611
SMARTgirl Club/DIC	31,263	4,923	
IP field office - administration	16,096	5,593	7,619
IP field office - program management/support	129,908	39,987	24,442
IP field office - outreach staff	38,306	25,061	10,488
IP central office - administration	90,326	5,788	9,232
IP central office - program management	35,372	9,662	11,578
Global Fund - KHANA			4,053
TA		16,361	
Flagship	216,855		

Figure 15 Cost allocation

Figure 16 shows that the cost components were also markedly different across program types. Among the largest common cost categories, program management/support at a field office level accounted for 22% of CoE program costs, 33% of Flagship TA costs, and 32% of Non-Flagship costs. Another major component was outreach staff, which for CoE, Flagship TA, and Non-Flagship areas accounted for 6%, 21%, and 14% of the program cost, respectively.

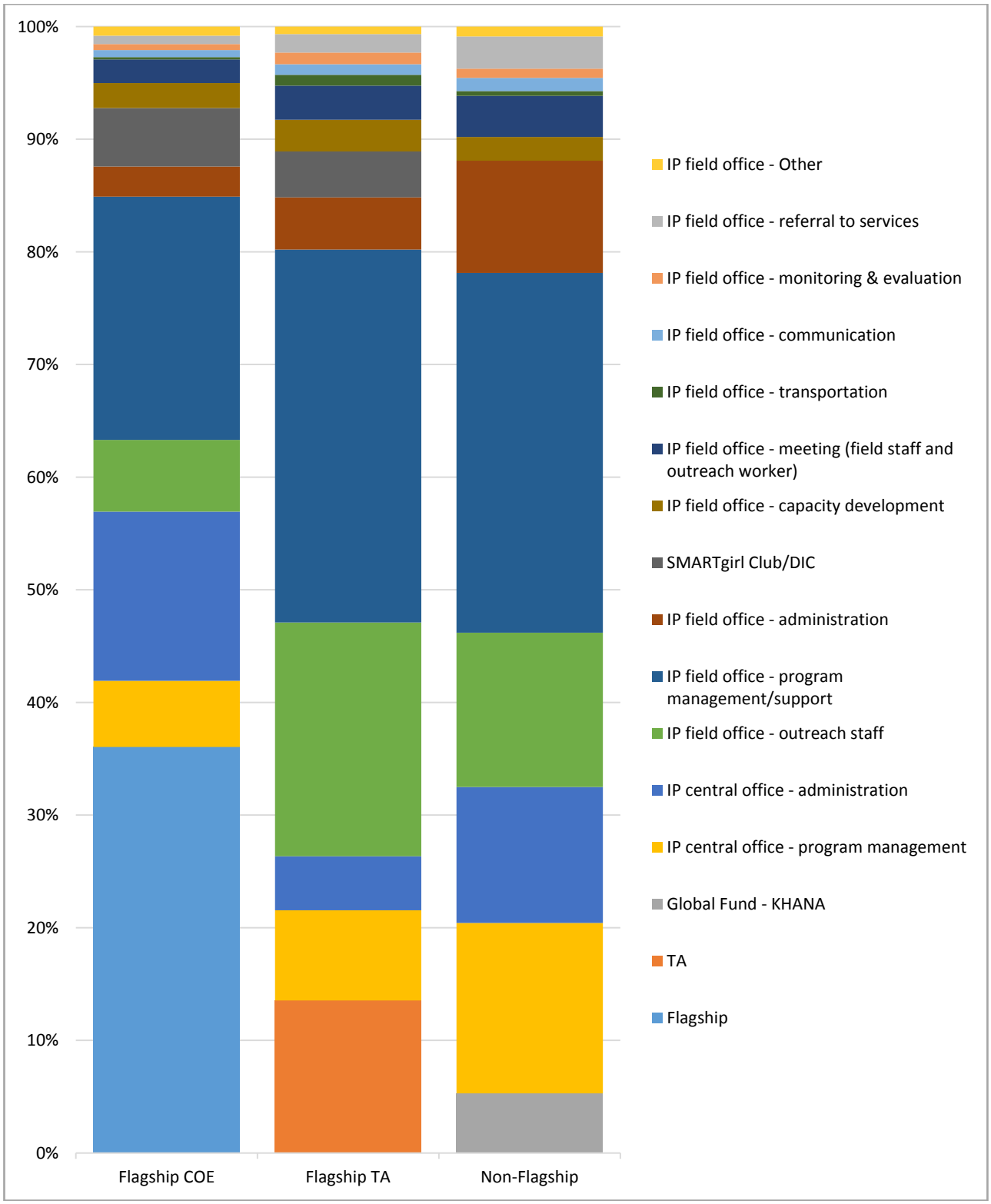


Figure 16 Cost allocation of programs

While total program costs were much higher for CoE than for Flagship TA and Non-Flagship sites, the number of HIV tests and the number of HIV cases detected at CoE were also significantly higher. See table 36 and figure 17. Over the 12 month period, there were nearly 2.5 times the number of HIV tests of EW in Flagship CoE areas as in Flagship TA areas (14,870 versus 5,808), and approximately 5 times the number of HIV tests as in the Non-Flagship areas (2,550). Over the same period, Flagship CoE areas found more than three times the number of HIV cases as did the Flagship TA areas (39 versus 11), and more than 4 times the number of HIV cases as did the Non-Flagship areas.

Despite the greater output of CoE in terms of the number of HIV tests performed and the number of HIV cases identified, the significantly higher program costs meant that the unit costs remained higher for CoE than Flagship TA and Non-Flagship areas. The cost per HIV test in CoE areas was approximately $40, compared to $21 at Flagship TA areas, and $30 at Non-Flagship areas. Similarly, the cost per HIV case detected in CoE areas was approximately $15,426, compared to $10,979 in Flagship TA areas, and $8,503 in Non-Flagship areas. While Flagship TA areas yielded the least expensive cost per test, Non-Flagship areas yielded the lowest cost per HIV case detected. This inversion was largely because the HIV positivity rate was much higher in Non-Flagship locations (0.35%) than in Flagship TA locations (0.19%).

Omitting the higher level costs (TA and central office costs), the cost per HIV test in CoE areas would be approximately $17, compared to $15 in Flagship TA areas, and $20 in Non-Flagship areas; the cost per HIV case detected in CoE areas would be $6,643, $8087 in Flagship TA areas, and $5,740 in Non-Flagship areas.

Table 36 Annual unit costs

Analysis Category	Flagship COE	Flagship TA	Non-Flagship
Total Cost	$601,617	$120,764	$76,525
HIV tests	14,870	5,808	2,550
HIV positive cases	39	11	9
Cost per HIV test	$40.46	$20.79	$30.01
Cost per HIV case detected	$15,426	$10,979	$8,503

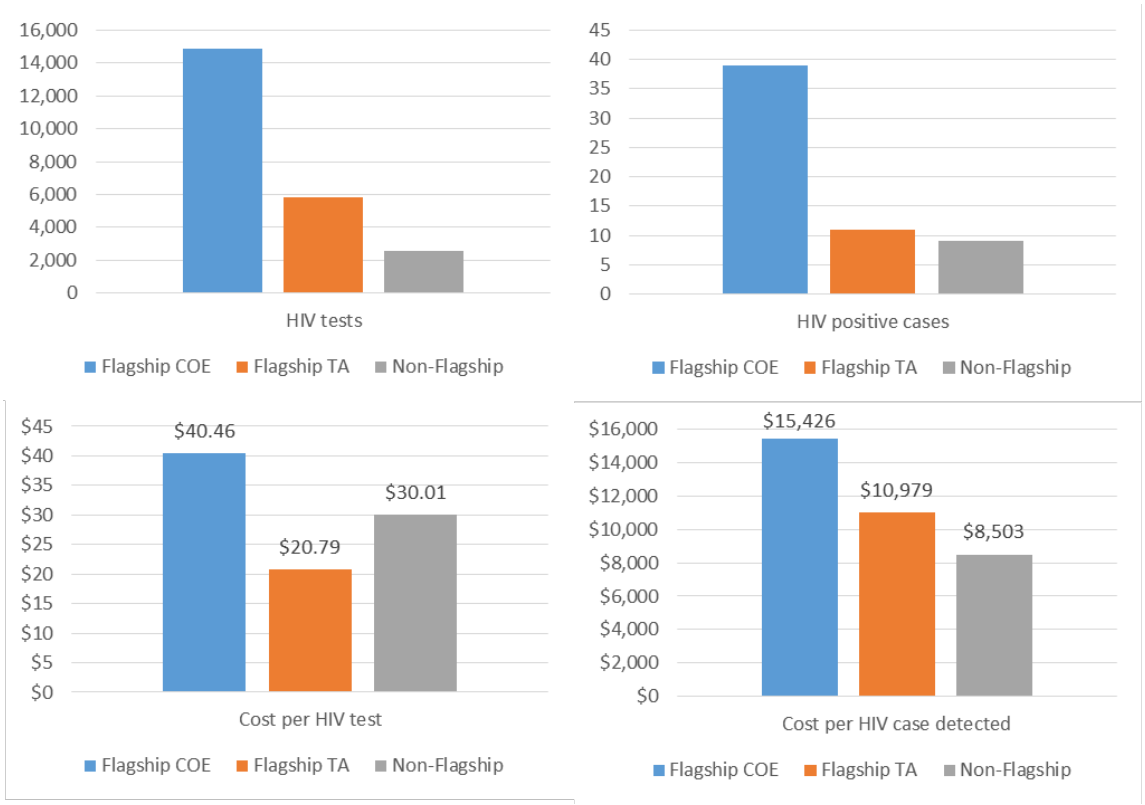


Figure 17 *Numbers of HIV tests and positive cases; unit costs per HIV test and per case detected*

16. Discussion

The data in this evaluation cover 1300 respondents in 4 geographic locations, comprising 300 from the geographic areas of the Flagship CoE sites, 300 from the geographic areas of Flagship TA sites, 300 from the geographic areas of Non-Flagship sites, and 400 from geographic areas with no existing EW programs. While it is not clear whether this was the result of programmatic targeting or the result of existing geographic and demographic realities, EW reached in CoE areas were older and more highly educated than the average for the group, and EW in Non-Flagship were younger and less well educated, which demonstrated some of the variabilities by program and geographic area. Additionally, there were larger populations in the catchment areas of Phnom Penh and Siem Reap where the CoE were located, which may have affected some of the findings, e.g. the number of HIV tests in the different catchment areas. There is no way to control for these potential effects.

Employment

KTV was the dominant primary employer of EW (62%) and comparatively small proportions of EW reported their main occupations to be either freelance sex worker (3.1%) or residential sex worker (3.4%). Given that the data from this evaluation were population-based (as opposed to time/location-based), this demonstrates the continued importance of targeting entertainment venues to reach sex workers.

Overall, about 57% of EW had incomes greater than $250 per month. With the monthly minimum wage in Cambodia for garment workers currently $140 per month (Daily, 2016), the significantly higher incomes available to EW show that there continues to be a significant economic incentive for women to participate in entertainment work.

Mobility

The high level of geographic mobility (43% of EW with less than one year living in current location) and employment mobility (52% of EW with less than one year at current work place) showed the challenges inherent in reaching EW. Particularly because program exposure was shown to positively impact uptake of STI screening, HCT, HIV prevention knowledge and, stigma and discrimination, consistent repeated program outreach to EW populations seems to have been valuable.

Risk

57% of EW were at medium or high risk for HIV, as judged by the risk assessment index. None of the programs, however, appeared to successfully target high risk EW, with all three of the program areas predominantly reaching a low and medium risk EW (74%). Indeed, a larger proportion of EW with low risk (37%) than with high risk (28%) had a high level of exposure to the program, showing the challenges experienced in reaching highest risk EW.

Only 7.5% of EW had seven or more sexual partners per week, though 82% usually had at least one sexual partner per week, indicating ongoing risk exposure. The 2016 Integrated HIV Bio-Behavioral Surveillance (IBBS) indicated that average number of clients in the previous week among those who reported paid sex was 3.3 and 61% of EW reported sex in exchange for gift or money in the previous 12 months (FEWIBBS, 2016)

Program Exposure

Only about half (51%) of EW in CoE geographic areas were familiar with the SMARTgirl logo, and the same proportion reported contact with an outreach worker in the previous 12 months. Only 34% of EW in CoE areas had contact with an outreach worker in the previous three months, which was actually lower than the proportions of EW that had contact with an outreach worker in the previous three months in Flagship TA and Non-Flagship areas (37% and 43%, respectively). This, despite EW in these latter areas having more mobile EW populations, indicating a potentially lower level of program intensity in the CoE areas.

The majority (52-65%) of EW in program areas reported that OW were their main source of information about HIV and STI services, though only 3-36% of EW said that OW were their preferred channel for this type of information. By contrast, there appeared to be strong demand for broadcast media (television and

radio) which combined for 52% of responses by EW as their preferred channels for information about HIV and STI services.

A solid one fifth of EW (22%) stated that Facebook was their preferred communication channel. This apparent demand for social media contrasts with the reported underutilization of the SMARTgirl website (only 3% utilization among EW in CoE areas) and the SMARTgirl Facebook page (only 7% utilization among EW in CoE areas). This underutilization is partially explained by low levels of knowledge about these resources with only 16% and 22% of EW reporting any knowledge of the website and Facebook page, respectively.

Exposure to printed education materials was suboptimal, with only four of the 20 printed materials being well recognized by the EW interviewed. Furthermore, there was no measurable impact on prevention knowledge among EW with regard to exposure to printed educational materials.

There was low utilization of SMARTgirl clubs and drop-in centers. The majority of EW (61%) in CoE areas had heard about the SMARTgirl club but only 20% had visited the SMARTgirl club in the previous six months. Less than 3% of EW in Flagship TA and Non-Flagship areas had visited a drop-in center in the previous six months. Visits to the SMARTgirl club did not correlate well with prevention knowledge, condom use, stigma/discrimination, STI screening, or HTC uptake.

Utilization of referrals was also suboptimal, with less than 10% of EW in program areas having been referred for family planning. Indeed, small proportions of EW were referred for STI services in the previous 12 months (13-18% in the three program geographic areas). Even for highly exposed EW, only 26% had been referred for STI screening/treatment in the previous 12 months, demonstrating the relative weakness of this program component.

Condoms and program/intervention exposure

Though only 74% of respondents reported using a condom at last sex with any partner, 97% reported using a condom at their last sex with a client. No differences were seen by location, so even EW in non-program areas had very high condom use rates with clients. This speaks well about the culture of condom use among Cambodian EW in their professional setting, as well as the wide availability of condoms (86% of EW reported condoms were always available when needed). The success of the CUP is seen in Cambodia with over 90% of EW reporting use of condom with the most recent paid clients (FEWIBBS, 2016). However, the most common reasons for not using a condom were that the EW trusted their partners and that not using a condom demonstrated fidelity to their partner. Among the small number of EW that did not use a condom at the last sex act with a client (37 of 1137 respondents), 38% said the main reason was that their client refused condom use.

STI Screening & HTC

National guidelines call for STI screening and HTC at least every six months, but only 44% of EW reported STI screening in the past six months, with a significantly smaller proportion of EW in non-program geographic areas receiving STI screening than EW in the three program geographic areas. By contrast, 56% of EW had undergone HTC in the previous six months, again with a significantly lower proportion of EW in non-program geographic areas receiving this than EW in the three program areas.

No meaningful analysis regarding the effectiveness of the EW programs with regard to key HIV status-related outcomes (e.g. VCCT confirmation testing, identifying new cases, reducing LTFU for HIV testing confirmation, or ART enrollment and retention of HIV+ EW) could be made because only 7 EW reported being HIV+. In fact, no EW in the CoE or Flagship TA areas reported being HIV+.

Program Impact

All Programs vs. No Program

Controlling for confounders, the EW programs had a measurable and positive impact on STI screening/treatment, HTC, and stigma/discrimination. EW in non-program areas were less likely than EW in

program areas to utilize STI screening/treatment (37% versus 44-47%), less likely to receive HTC (48% versus 59-67%), and were more likely to report high stigma/discrimination (62% versus 42-51%). This shows powerful evidence of the impact of the EW program. Furthermore, compared to EW with high program exposure, EW with no program exposure were less likely to receive STI screening/treatment (33% versus 62%), were less likely to receive HTC (44% versus 79%), and were more likely to experience high stigma/discrimination (60% versus 38%).

Comparisons among the Programs

Comparing program impact across geographic areas, it appears that the Non-Flagship areas performed best among the three, with EW in these geographic areas being significantly more likely to receive HTC (any type or community-based) and STI screening/treatment than the other two geographic program areas. CoE EW programs had the overall lowest impacts among the three (with the exception of STI screening/treatment where CoE performance was better than Flagship TA areas).

Cost

Program costs were much higher for CoE than for Flagship TA and Non-Flagship sites, yielding an overall higher cost per HIV test of approximately $40, compared to $21 in Flagship TA areas, and $30 in Non-Flagship areas, as well as a higher cost per HIV case detected in CoE areas of $15,426, compared to $10,979 in Flagship TA areas and $8,503 in Non-Flagship areas.

17. Conclusion

This evaluation provides valuable insights into the situation of EW across Cambodia, showing a great diversity of demographic, work, and socioeconomic conditions. Common issues were seen with regard to geographic mobility, gender-based and domestic violence, and condom use patterns.

Uptake of HTC and STI screening/treatment fell below expectations among EW. There was underutilization of referrals for family planning, printed materials, SMARTgirl clubs and drop-in centers, as well as social media among EW across geographic location.

However, it was clear that exposure to the EW programs boosted HTC and STI screening/treatment and was associated with decreased stigma and discrimination. The highest EW program impact was seen in Non-Flagship locations. Compared to CoE and Flagship TA areas, Non-Flagship areas also had the lowest cost per HIV infection detected.

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19. Annexes

19.1. Printed Education Materials

Table 1 Exposure to printed education materials

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Ever seen "Two better than one"						
No	75.7%	83.7%	82.3%	96.8%	85.5%	
Yes	24.3%	16.3%	17.7%	3.3%	14.5%	
Total	100%	100%	100%	100%	100%	67.621 df=3 p=.000
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	16.4%	18.4%	13.2%	0.0%	14.9%	
Attractive	83.6%	81.6%	86.8%	100.0%	85.1%	
Total	100%	100%	100%	100%	100%	2.998 df=3 p=.000
	73	*49*	*53*	*13*	*188*	
Ever seen "Your health your choice (Srey Ra)"						
No	60.0%	67.3%	61.0%	81.0%	68.4%	
Yes	40.0%	32.7%	39.0%	19.0%	31.6%	
Total	100%	100%	100%	100%	100%	46.920 df=3 p=.000
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	10.8%	16.3%	13.7%	6.6%	12.2%	
Attractive	89.2%	83.7%	86.3%	93.4%	87.8%	
Total	100%	100%	100%	100%	100%	4.257 df=3 p=.235
	120	*98*	*117*	*76*	*411*	
Ever seen "Your decision"						
No	55.0%	65.3%	62.0%	83.0%	67.6%	
Yes	45.0%	34.7%	38.0%	17.0%	32.4%	
Total	100%	100%	100%	100%	100%	70.074 df=3 p=.000
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	14.1%	15.4%	10.5%	22.1%	14.7%	
Attractive	85.9%	84.6%	89.5%	77.9%	85.3%	
Total	100%	100%	100%	100%	100%	4.594 df=3 p=.204
	135	*104*	*114*	*68*	*421*	
Ever seen "Thida and Leakhena"						
No	79.3%	86.7%	86.3%	94.0%	87.2%	
Yes	20.7%	13.3%	13.7%	6.0%	12.8%	
Total	100%	100%	100%	100%	100%	33.378 df=3 p=.000
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	17.7%	7.5%	12.2%	12.5%	13.2%	
Attractive	82.3%	92.5%	87.8%	87.5%	86.8%	
Total	100%	100%	100%	100%	100%	2.301 df=3 p=.512
	62	*40*	*41*	*24*	*167*	

Table 1 Exposure to printed education materials (Continued)

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Ever seen "Smart choice"						
No	60.3%	74.3%	72.3%	93.3%	76.5%	
Yes	39.7%	25.7%	27.7%	6.8%	23.5%	109.595 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	12.6%	6.5%	8.4%	0.0%	8.8%	
Attractive	87.4%	93.5%	91.6%	100.0%	91.2%	5.263 df=3 p=.153
Total	100%	100%	100%	100%	100%	
	119	*77*	*83*	*27*	*306*	
Ever seen "Secret bag"						
No	80.7%	90.7%	87.7%	95.3%	89.1%	
Yes	19.3%	9.3%	12.3%	4.8%	10.9%	
Total	100%	100%	100%	100%	100%	38.867 df=3 p=.000
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	5.2%	25.0%	0.0%	10.5%	8.5%	
Attractive	94.8%	75.0%	100.0%	89.5%	91.5%	14.239 df=3 p=003
Total	100%	100%	100%	100%	100%	
	58	28	37	19	142	
Ever seen "For my future"						
No	88.0%	93.7%	93.0%	94.8%	92.5%	
Yes	12.0%	6.3%	7.0%	5.3%	7.5%	12.428 df=3 p=.006
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	2.8%	26.3%	14.3%	33.3%	16.5%	
Attractive	97.2%	73.7%	85.7%	66.7%	83.5%	10.645 df=3 p=.014
Total	100%	100%	100%	100%	100%	
	36	*19*	*21*	*21*	*97*	
Ever seen "Value of life"						
No	73.3%	78.7%	77.0%	90.5%	80.7%	
Yes	26.7%	21.3%	23.0%	9.5%	19.3%	38.539 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	13.8%	17.2%	17.4%	10.5%	15.1%	
Attractive	86.3%	82.8%	82.6%	89.5%	84.9%	1.231 df=3 p=746
Total	100%	100%	100%	100%	100%	
	80	*64*	*69*	*38*	*251*	
Ever seen "Your choice"						
No	59.7%	66.7%	67.7%	85.3%	71.0%	
Yes	40.3%	33.3%	32.3%	14.8%	29.0%	62.518 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	

Table 1 Exposure to printed education materials (Continued)

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Attractiveness (among those that "ever saw")						
Not attractive	14.9%	18.0%	26.8%	32.2%	21.5%	
Attractive	85.1%	82.0%	73.2%	67.8%	78.5%	
Total	100%	100%	100%	100%	100%	
	121	*100*	*97*	*59*	*377*	9.498 df=3 p=.023
Ever seen "Road of life"						
No	72.3%	80.7%	80.3%	93.0%	82.5%	
Yes	27.7%	19.3%	19.7%	7.0%	17.5%	
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	53.603 df=3 p=.000
Attractiveness (among those that "ever saw")						
Not attractive	8.4%	22.4%	20.3%	21.4%	16.7%	
Attractive	91.6%	77.6%	79.7%	78.6%	83.3%	
Total	100%	100%	100%	100%	100%	
	83	*58*	*59*	*28*	*228*	6.460 df=3 p=.091
Ever seen "Good habit"						
No	71.7%	83.7%	78.3%	92.5%	82.4%	
Yes	28.3%	16.3%	21.7%	7.5%	17.6%	
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	55.682 df=3 p=.000
Attractiveness (among those that "ever saw")						
Not attractive	7.1%	18.4%	7.7%	13.3%	10.5%	
Attractive	92.9%	81.6%	92.3%	86.7%	89.5%	
Total	100%	100%	100%	100%	100%	
	85	*49*	*65*	*30*	*229*	5.108 df=3 p=.164
Ever seen "Counselling card"						
No	45.7%	67.3%	57.3%	86.5%	65.9%	
Yes	54.3%	32.7%	42.7%	13.5%	34.1%	
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	140.306 df=3 p=.000
Attractiveness (among those that "ever saw")						
Not attractive	4.3%	6.1%	5.5%	11.1%	5.9%	
Attractive	95.7%	93.9%	94.5%	88.9%	94.1%	
Total	100%	100%	100%	100%	100%	
	163	*98*	*128*	*54*	*443*	3.466 df=3 p=.325
Ever seen "Alcohol use"						
No	69.3%	81.3%	77.3%	92.5%	81.1%	
Yes	30.7%	18.7%	22.7%	7.5%	18.9%	
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	63.741 df=3 p=000
Attractiveness (among those that "ever saw")						
Not attractive	10.9%	17.9%	13.2%	13.3%	13.4%	
Attractive	89.1%	82.1%	86.8%	86.7%	86.6%	
Total	100%	100%	100%	100%	100%	
	92	*56*	*68*	*30*	*246*	1.467 df=3 p=690

Table 1 Exposure to printed education materials (Continued)

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Ever seen "Risk screening tools"						
No	77.7%	90.3%	88.0%	97.3%	89.0%	
Yes	22.3%	9.7%	12.0%	2.8%	11.0%	68.020 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	10.4%	10.3%	2.8%	9.1%	8.4%	
Attractive	89.6%	89.7%	97.2%	90.9%	91.6%	1.995 df=3 P=.573
Total	100%	100%	100%	100%	100%	
	67	*29*	*36*	*11*	*143*	
Ever seen "Service package guideline (SMARTgirl)"						
No	78.0%	85.3%	83.3%	95.0%	86.2%	
Yes	22.0%	14.7%	16.7%	5.0%	13.8%	45.130 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	3.0%	15.9%	16.0%	10.0%	10.6%	
Attractive	97.0%	84.1%	84.0%	90.0%	89.4%	6.871 df=3 p=.076
Total	100%	100%	100%	100%	100%	
	66	*44*	*50*	*20*	*180*	
Ever seen "SMARTgirl fan"						
No	38.3%	60.7%	53.3%	87.0%	61.9%	
Yes	61.7%	39.3%	46.7%	13.0%	38.1%	187.075 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	5.4%	10.2%	8.6%	5.8%	7.5%	
Attractive	94.6%	89.8%	91.4%	94.2%	92.5%	2.847 df=3 p=.416
Total	100%	100%	100%	100%	100%	
	185	*118*	*140*	*52*	*495*	
Ever seen "1295 sticker"						
No	73.3%	82.7%	87.0%	95.0%	85.3%	
Yes	26.7%	17.3%	13.0%	5.0%	14.7%	66.655 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	8.8%	7.7%	7.7%	5.0%	7.9%	
Attractive	91.3%	92.3%	92.3%	95.0%	92.1%	.317 df=3 p=957
Total	100%	100%	100%	100%	100%	
	80	*52*	*39*	*20*	*191*	
Ever seen "Birth spacing network"						
No	38.7%	49.7%	42.0%	62.3%	49.2%	
Yes	61.3%	50.3%	58.0%	37.8%	50.8%	46.820 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	

Table 1 Exposure to printed education materials (Continued)

Variable	Geographic Area					
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test
Attractiveness (among those that "ever saw")						
Not attractive	10.9%	6.6%	10.3%	13.9%	10.5%	
Attractive	89.1%	93.4%	89.7%	86.1%	89.5%	4.328 df=3 p=.228
Total	100%	100%	100%	100%	100%	
	184	*151*	*174*	*151*	*660*	
Ever seen "condom use and contraceptives"						
No	44.3%	71.0%	57.7%	81.0%	64.8%	
Yes	55.7%	29.0%	42.3%	19.0%	35.2%	112.931 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	7.2%	4.6%	7.9%	3.9%	6.3%	
Attractive	92.8%	95.4%	92.1%	96.1%	93.7%	1.880 df=3 P=.598
Total	100%	100%	100%	100%	100%	
	167	*87*	*127*	*76*	*457*	
Ever seen "Blood drop"						
No	67.7%	82.0%	78.3%	93.0%	81.2%	
Yes	32.3%	18.0%	21.7%	7.0%	18.8%	74.311 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	300	*300*	*300*	*400*	*1300*	
Attractiveness (among those that "ever saw")						
Not attractive	7.2%	5.6%	3.1%	3.6%	5.3%	
Attractive	92.8%	94.4%	96.9%	96.4%	94.7%	1.516 df=3 p=.000
Total	100%	100%	100%	100%	100%	
	97	*54*	*65*	*28*	*244*	

19.2. Sexual Activities

Table 2 Sexual Activities by geographic area and program exposure

Variable	Geographic Area						Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Other sources of clients											
No other sources	56.7%	49.0%	47.0%	52.5%	51.4%	6.541 p=.088	51.7%	45.8%	52.5%	51.4%	1.914 P=.384
Phone call	25.0%	36.3%	33.7%	39.0%	33.9%	16.042 P=.001	36.3%	35.1%	30.6%	33.9%	4.232 P=.121
Bar/nightclub/karaoke/ massage	4.7%	5.3%	8.7%	6.7%	6.4%	4.739 P=.192	6.0%	6.1%	7.0%	6.4%	0.505 P=.777
Introduced by friends	7.7%	5.3%	9.7%	3.5%	6.3%	12.482 P=.006	5.5%	9.9%	6.4%	6.3%	3.603 P=.165
Meka (sex broker)	8.0%	2.3%	6.0%	1.6%	4.2%	24.684 P=.000	3.2%	7.6%	4.5%	4.2%	5.546 P=.062
Guess house/ hotel	.3%	11.3%	5.0%	1.0%	4.2%	60.372 P=.000	3.7%	1.5%	5.4%	4.2%	4.745 P=.093
Restaurant	5.0%	3.0%	2.7%	.5%	2.6%	13.903 P=.003	2.1%	1.5%	3.5%	2.6%	2.723 P=.256
Using intermediary (taxi, barman)	1.0%	1.7%	3.3%	.5%	1.5%	9.835 P=.020	1.2%	2.3%	1.7%	1.5%	1.056 P=.590
Facebook	1.0%	3.7%	1.0%	.8%	1.5%	11.760 P=.008	1.1%	0.0%	2.5%	1.5%	6.263 P=.044
Other	1.3%	1.0%	1.3%	1.0%	1.2%	0.315 P=.957	1.2%	2.3%	.8%	1.2%	2.161 P=.339
On the street/public park	.0%	1.7%	2.0%	.3%	.9%	10.395 P=.015	.6%	.8%	1.4%	.9%	1.785 P=1.785
Beer garden	2.7%	0.0%	.3%	.3%	.8%	18.635 P=.000	.5%	0.0%	1.4%	.8%	4.169 P=.124
At party/ wedding party	0.0%	3.3%	0.0%	0.0%	.8%	33.592 P=.000	.8%	.8%	.8%	.8%	0.000 P=1.000
Messenger	0.0%	2.7%	0.0%	0.3%	.7%	22.331 P=.000	.6%	.8%	.8%	.7%	0.122 P=.941
Street-based massage/coin massage	1.0%	1.7%	1.7%	0.0%	.7%	10.481 P=.015	.3%	1.5%	.8%	.6%	3.015 P=.222
Line/Tango/Viber/ WhatsApp	.3%	2.0%	0.0%	0.0%	.5%	15.991 P=.001	.2%	.8%	1.0%	.5%	3.720 P=.156
Brothel	0.0%	.3%	.3%	0.0%	.2%	2.337 P=.505	0.0%	0.0%	.4%	.2%	3.043 P= .218
Bigo live	0.0%	.3%	0.0%	0.0%	.08%	3.336 P=.343	0.0%	0.0%	.2%	.08%	1.521 P=.468
Sport club/gym	0.0%	0.0%	0.0%	.3%	.08%	2.252 P=.522	.2%	0.0%	0.0%	.08%	0.992 P=.609
Total	114.7 % *344*	131.0 % *393*	121.0 % *363*	107.8 % *431*	117.8 % *1531*		115.0 % *751*	116.8 % *153*	121.5 % *627*	117.8 % *1531*	

19.3. Condom Use

Table 3 Condom use by geographic area and program exposure

Variable	Geographic Area					Program Exposure				
	Flagship CoE	Flagship TA (GF)	Non-Flagship (GF)	No Program	Total	Chi-Square Test	No exposure	Some exposure	High exposure	Total	Chi-Square Test
Usual source of condoms											
SMARTgirl outreach worker	32.0%	43.3%	47.3%	3.5%	29.4%	204.855, p=.000	3.2%	18.3%	65.3%	29.4%	544.182, p=.000
SMARTgirl club	17.3%	3.0%	6.3%	0.8%	6.4%	87.167, p=.000	0.0%	2.3%	15.5%	6.4%	120.003, p=.000
Peer seller	0.0%	0.3%	0.0%	0.0%	0.1%	3.336, p=.343	0.0%	0.0%	0.2%	0.1%	1.521, p=.468
Street-based sales	9.3%	9.3%	0.3%	3.8%	5.5%	34.497, p=.000	5.5%	6.1%	5.4%	5.5%	0.094, p=.954
FP Officer	0.3%	0.7%	0.7%	0.0%	0.4%	2.811, p=.422	0.0%	0.0%	1.0%	0.4%	7.626, p=.022
NGO/outreach worker/DIC (not SMARTgirl)	11.3%	6.3%	10.0%	5.5%	8.1%	10.585, p=.014	8.1%	14.5%	6.4%	8.1%	9.255, p=.010
Store/gas station/vendor/ pharmacy	76.3%	63.7%	51.3%	47.3%	58.7%	69.872, p=.000	52.5%	64.1%	65.1%	58.7%	20.615, p=.000
Guesthouse/brothel/massage parlor/karaoke/ spas/saunas/beer garden	51.0%	51.0%	50.7%	63.3%	54.7%	17.085, p=.001	58.4%	55.0%	50.0%	54.7%	8.107, p=.017
Client	24.0%	33.0%	35.7%	23.0%	28.5%	19.477, p=.000	32.6%	22.9%	24.6%	28.5%	11.287, p=.004
Sexual partner/sweetheart	8.3%	20.0%	17.3%	11.0%	13.9%	22.829, p=.000	15.8%	13.7%	11.6%	13.9%	4.137, p=.126
Friend	4.3%	4.3%	6.0%	2.0%	4.0%	7.465, p=.058	3.8%	6.9%	3.5%	4.0%	3.212, p=.201
Never bought/received	0.7%	0.3%	0.7%	1.3%	0.8%	2.041, p=.564	1.4%	0.0%	0.2%	0.8%	6.427, p=.040
Family health clinic/health center	11.0%	12.3%	10.0%	8.8%	10.4%	2.542, p=.468	8.3%	15.3%	11.8%	10.4%	7.640, p=.022
Other	1.7%	1.0%	2.7%	0.5%	1.4%	6.403, p=.094	1.7%	3.1%	0.6%	1.4%	5.540, p=.063
Total	247.7 % *743*	248.7 % *746*	239.0 % *717*	170.5 % *682*	222.2 % *2888*	993.4405, p=.000	191.3 % *1249*	222.1 % *291*	261.2 % *1348*	222.2 % *2888*	961.8936, p=.000

19.4. Program Impact

19.4.1. STI Screening

Table 4 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting STI screening and treatment in the past 6 months

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by geographic area					
Flagship CoE	0.469	0.0350	0.000	0.4002	0.5375
Flagship TA (GF)	0.435	0.0271	0.000	0.3823	0.4887
Non-Flagship (GF)	0.473	0.0292	0.000	0.4158	0.5304
No Program	0.370	0.0281	0.000	0.3148	0.4247
Comparison of probability of outcome between the geographic areas					
No program – reference					
Flagship CoE	0.099	0.0448	0.027	0.0114	0.1869
Flagship TA (GF)	0.066	0.0390	0.092	-0.0107	0.1421
Non-Flagship (GF)	0.103	0.0404	0.011	0.0241	0.1826
Flagship CoE Model					
Age					
18-24 years – reference					
25-30 years	0.199	0.3735	0.594	-0.5328	0.9312
31 years and above	0.160	0.4597	0.728	-0.7411	1.0608
Education					
Under 1 year – reference					
1-6 years	0.839	0.6837	0.220	-0.5012	2.1790
7 years and above	1.271	0.7366	0.085	-0.1730	2.7145
Income					
Under $150 – reference					
$150 - $250	-0.088	0.6299	0.889	-1.3227	1.1464
$250 - $300	-0.434	0.7031	0.537	-1.8120	0.9440
$300 - $500	-0.558	0.6134	0.363	-1.7599	0.6447
$500 and above	-0.719	0.6575	0.274	-2.0082	0.5693
Marital status					
Single - reference					
Having partner/boyfriend	0.495	0.5765	0.391	-0.6352	1.6248
Married (having husband)	1.189	0.6202	0.055	-0.0266	2.4046
Divorced/separated/widowed	0.960	0.5757	0.095	-0.1684	2.0885
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.604	0.4147	0.145	-1.4173	0.2083
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	1.251	0.4912	0.011	0.2883	2.2138
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.880	0.4923	0.074	-1.8450	0.0848
Disclosed status as sex worker (0=no, 1=yes)	-0.720	0.2978	0.016	-1.3040	-0.1366
Ever suspected having any STI (0=no, 1=yes)	0.647	0.3028	0.033	0.0530	1.2400
Risk index					
Low risk – reference					
Medium risk	-0.029	0.3499	0.933	-0.7152	0.6563
High risk	-0.074	0.3674	0.840	-0.7945	0.6457
Stigma and discrimination index					
Low – reference					
Medium	-0.304	0.3748	0.417	-1.0385	0.4307
High	-0.437	0.3633	0.229	-1.1489	0.2754
Constant	-0.889	1.1920	0.456	-3.2256	1.4468

Table 4 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting STI screening and treatment in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Flagship TA (GF) Model					
Age					
18-24 years – reference					
25-30 years	0.950	0.3593	0.008	0.2458	1.6542
31 years and above	1.327	0.4435	0.003	0.4573	2.1959
Education					
Under 1 year – reference					
1-6 years	-0.758	0.4462	0.090	-1.6321	0.1169
7 years and above	-0.256	0.4692	0.586	-1.1752	0.6641
Income					
Under $150 – reference					
$150 - $250	0.330	0.4982	0.508	-0.6463	1.3065
$250 - $300	0.671	0.5487	0.222	-0.4048	1.7460
$300 - $500	0.146	0.4788	0.760	-0.7924	1.0846
$500 and above	0.015	0.5242	0.977	-1.0119	1.0427
Marital status					
Single - reference					
Having partner/boyfriend	0.945	0.5735	0.099	-0.1793	2.0688
Married (having husband)	-0.318	0.6720	0.636	-1.6346	0.9994
Divorced/separated/widowed	-0.547	0.5754	0.342	-1.6749	0.5807
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.489	0.3392	0.149	-0.1757	1.1540
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.012	0.3952	0.975	-0.7869	0.7624
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.671	0.3748	0.073	-0.0632	1.4061
Disclosed status as sex worker (0=no, 1=yes)	0.496	0.2799	0.076	-0.0526	1.0447
Ever suspected having any STI (0=no, 1=yes)	0.875	0.2768	0.002	0.3319	1.4172
Risk index					
Low risk – reference					
Medium risk	0.193	0.3010	0.522	-0.3973	0.7825
High risk	-0.286	0.3997	0.474	-1.0694	0.4974
Stigma and discrimination index					
Low – reference					
Medium	0.172	0.3145	0.584	-0.4441	0.7887
High	-0.148	0.3392	0.662	-0.8131	0.5166
Constant	-1.941	0.8778	0.027	-3.6611	-0.2200
Non-Flagship (GF) – Model					
Age					
18-24 years – reference					
25-30 years	-0.245	0.3316	0.460	-0.8952	0.4048
31 years and above	-0.360	0.3898	0.356	-1.1241	0.4038
Education					
Under 1 year – reference					
1-6 years	-0.007	0.3857	0.986	-0.7626	0.7494
7 years and above	0.041	0.4352	0.924	-0.8117	0.8943
Income					
Under $150 – reference					
$150 - $250	0.494	0.4428	0.265	-0.3739	1.3617
$250 - $300	0.673	0.4987	0.177	-0.3048	1.6503
$300 - $500	0.679	0.4591	0.139	-0.2204	1.5791
$500 and above	0.766	0.5801	0.186	-0.3705	1.9035

Table 4 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting STI screening and treatment in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Marital status					
Single - reference					
Having partner/boyfriend	0.371	0.5680	0.514	-0.7423	1.4841
Married (having husband)	0.150	0.6600	0.820	-1.1432	1.4440
Divorced/separated/widowed	0.557	0.5581	0.319	-0.5373	1.6506
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.253	0.3865	0.513	-0.5047	1.0103
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.196	0.4537	0.665	-0.6929	1.0856
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.212	0.3972	0.593	-0.5662	0.9908
Disclosed status as sex worker (0=no, 1=yes)	-0.803	0.2673	0.003	-1.3265	-0.2788
Ever suspected having any STI (0=no, 1=yes)	0.751	0.2798	0.007	0.2029	1.2997
Risk index					
Low risk – reference					
Medium risk	1.141	0.3140	0.000	0.5259	1.7566
High risk	0.373	0.3176	0.240	-0.2491	0.9959
Stigma and discrimination index					
Low – reference					
Medium	-0.229	0.3171	0.469	-0.8510	0.3921
High	-0.182	0.3340	0.585	-0.8369	0.4725
Constant	-1.506	0.7803	0.054	-3.0350	0.0238
No Program Model					
Age					
18-24 years – reference					
25-30 years	-0.282	0.2990	0.346	-0.8679	0.3041
31 years and above	-0.092	0.3869	0.811	-0.8508	0.6660
Education					
Under 1 year – reference					
1-6 years	-0.075	0.4107	0.856	-0.8796	0.7305
7 years and above	0.004	0.4580	0.993	-0.8939	0.9014
Income					
Under $150 – reference					
$150 - $250	-0.044	0.3921	0.910	-0.8127	0.7243
$250 - $300	0.638	0.4625	0.167	-0.2680	1.5450
$300 - $500	-0.066	0.4278	0.877	-0.9045	0.7724
$500 and above	0.159	0.4946	0.747	-0.8099	1.1289
Marital status					
Single - reference					
Having partner/boyfriend	-0.970	0.5279	0.066	-2.0043	0.0649
Married (having husband)	0.522	0.6808	0.443	-0.8124	1.8562
Divorced/separated/widowed	-0.288	0.5192	0.579	-1.3060	0.7292
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.732	0.6486	0.259	-2.0038	0.5389
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	1.348	0.6957	0.053	-0.0152	2.7120
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.195	0.3239	0.548	-0.8293	0.4402
Disclosed status as sex worker (0=no, 1=yes)	0.092	0.2528	0.717	-0.4038	0.5873
Ever suspected having any STI (0=no, 1=yes)	0.194	0.2811	0.491	-0.3574	0.7447

Table 4 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting STI screening and treatment in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Risk index					
Low risk – reference					
Medium risk	0.284	0.2958	0.338	-0.2962	0.8634
High risk	0.049	0.3254	0.880	-0.5888	0.6867
Stigma and discrimination index					
Low – reference					
Medium	-0.476	0.3384	0.159	-1.1394	0.1870
High	-0.213	0.2994	0.476	-0.8001	0.3736
Constant	-0.238	0.7654	0.756	-1.7378	1.2624

Table 5 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting STI screening and treatment in the past 6 months

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by program exposure					
No exposure	0.332	0.0201	0.000	0.2929	0.3719
Some exposure	0.265	0.0370	0.000	0.1930	0.3378
High exposure	0.615	0.0245	0.000	0.5671	0.6630
Comparison of probability of outcome between the levels of program exposure					
No exposure – reference					
Some exposure	-0.067	0.0422	0.112	-0.1496	0.0157
High exposure	0.283	0.0316	0.000	0.2207	0.3446
No Exposure Model					
Age					
18-24 years – reference					
25-30 years	0.192	0.2409	0.426	-0.2804	0.6637
31 years and above	0.427	0.2738	0.119	-0.1101	0.9633
Education					
Under 1 year – reference					
1-6 years	0.106	0.3302	0.747	-0.5409	0.7536
7 years and above	0.305	0.3547	0.390	-0.3902	1.0003
Income					
Under $150 – reference					
$150 - $250	0.319	0.3126	0.308	-0.2941	0.9314
$250 - $300	0.758	0.3564	0.033	0.0597	1.4567
$300 - $500	0.014	0.3490	0.969	-0.6704	0.6977
$500 and above	0.543	0.3711	0.143	-0.1840	1.2706
Marital status					
Single - reference					
Having partner/boyfriend	0.175	0.3845	0.649	-0.5787	0.9287
Married (having husband)	-0.285	0.5247	0.587	-1.3136	0.7431
Divorced/separated/widowed	-0.093	0.3933	0.813	-0.8637	0.6778
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.180	0.2696	0.503	-0.3479	0.7089
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.378	0.3265	0.247	-0.2618	1.0182
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.329	0.2412	0.172	-0.8019	0.1437
Disclosed status as sex worker (0=no, 1=yes)	-0.407	0.1960	0.038	-0.7908	-0.0223
Ever suspected having any STI (0=no, 1=yes)	0.388	0.2022	0.055	-0.0085	0.7842
Risk index					
Low risk – reference					
Medium risk	0.314	0.2160	0.146	-0.1094	0.7375
High risk	0.112	0.2416	0.642	-0.3614	0.5857
Stigma and discrimination index					
Low – reference					
Medium	-0.454	0.2447	0.064	-0.9332	0.0262
High	-0.139	0.2286	0.544	-0.5868	0.3094
Constant	-1.304	0.6121	0.033	-2.5039	-0.1046
Some Exposure Model					
Age					
18-24 years – reference					
25-30 years	0.212	0.4888	0.665	-0.7465	1.1696
31 years and above	0.246	0.5660	0.664	-0.8639	1.3549

Table 5 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting STI screening and treatment in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Education					
Under 1 year – reference					
1-6 years	-0.654	0.6989	0.349	-2.0239	0.7157
7 years and above	-0.671	0.7827	0.391	-2.2051	0.8631
Income					
Under $150 – reference					
$150 - $250	0.265	0.6975	0.703	-1.1016	1.6325
$250 - $300	-0.638	0.8042	0.428	-2.2139	0.9387
$300 - $500	0.741	0.6846	0.279	-0.6011	2.0824
$500 and above	0.269	0.8456	0.750	-1.3884	1.9265
Marital status					
Single - reference					
Having partner/boyfriend	0.083	0.8263	0.920	-1.5369	1.7023
Married(having husband)	1.380	0.9996	0.167	-0.5788	3.3394
Divorced/separated/widowed	-0.048	0.8350	0.954	-1.6849	1.5883
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.937	0.7926	0.237	-0.6165	2.4902
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.905	0.8518	0.288	-2.5742	0.7649
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.265	0.5903	0.653	-0.8917	1.4222
Disclosed status as sex worker (0=no, 1=yes)	0.247	0.3943	0.531	-0.5259	1.0196
Ever suspected having any STI (0=no, 1=yes)	-0.125	0.4545	0.784	-1.0156	0.7661
Risk index					
Low risk – reference					
Medium risk	-0.418	0.4752	0.379	-1.3492	0.5134
High risk	-0.475	0.5491	0.387	-1.5516	0.6007
Stigma and discrimination index					
Low – reference					
Medium	-0.465	0.5512	0.399	-1.5458	0.6150
High	-0.021	0.5078	0.967	-1.0163	0.9743
Constant	-1.015	1.3010	0.435	-3.5644	1.5353
High Exposure – Model					
Age					
18-24 years – reference					
25-30 years	0.166	0.2754	0.546	-0.3733	0.7063
31 years and above	0.370	0.3054	0.226	-0.2286	0.9686
Education					
Under 1 year – reference					
1-6 years	0.352	0.3659	0.336	-0.3648	1.0694
7 years and above	0.426	0.3793	0.262	-0.3176	1.1691
Income					
Under $150 – reference					
$150 - $250	-0.420	0.4990	0.399	-1.3985	0.5576
$250 - $300	-0.505	0.5533	0.362	-1.5892	0.5797
$300 - $500	-0.535	0.4920	0.276	-1.4997	0.4289
$500 and above	-0.627	0.5098	0.219	-1.6264	0.3721
Marital status					
Single - reference					
Having partner/boyfriend	0.132	0.4241	0.757	-0.6998	0.9628
Married(having husband)	0.282	0.4619	0.541	-0.6231	1.1876
Divorced/separated/widowed	0.079	0.3961	0.843	-0.6979	0.8549
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.159	0.3365	0.636	-0.8185	0.5004

Table 5 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting STI screening and treatment in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.344	0.3403	0.312	-0.3233	1.0108
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.105	0.2997	0.726	-0.6921	0.4825
Disclosed status as sex worker (0=no, 1=yes)	-0.219	0.2164	0.310	-0.6435	0.2046
Ever suspected having any STI (0=no, 1=yes)	0.552	0.2332	0.018	0.0951	1.0092
Risk index					
Low risk – reference					
Medium risk	0.315	0.2627	0.231	-0.2000	0.8298
High risk	0.016	0.2648	0.951	-0.5029	0.5351
Stigma and discrimination index					
Low – reference					
Medium	0.148	0.2294	0.519	-0.3017	0.5975
High	0.017	0.2663	0.949	-0.5050	0.5391
Constant	0.084	0.7167	0.907	-1.3211	1.4884

19.4.2. HIV Testing (Any Type)

Table 6 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV testing (any type) in the past 6 months

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by geographic area					
Flagship CoE	0.585	0.0369	0.000	0.5130	0.6575
Flagship TA (GF)	0.610	0.0279	0.000	0.5550	0.6645
Non-Flagship (GF)	0.672	0.0264	0.000	0.6199	0.7233
No Program	0.481	0.0306	0.000	0.4211	0.5411
Comparison of probability of outcome between the geographic areas					
No program – reference					
Flagship CoE	0.104	0.0479	0.030	0.0103	0.1979
Flagship TA (GF)	0.129	0.0413	0.002	0.0476	0.2096
Non-Flagship (GF)	0.190	0.0403	0.000	0.1115	0.2694
Flagship CoE Model					
Age					
18-24 years – reference					
25-30 years	0.092	0.3743	0.805	-0.6412	0.8260
31 years and above	0.436	0.4462	0.328	-0.4381	1.3108
Education					
Under 1 year – reference					
1-6 years	0.582	0.7098	0.412	-0.8091	1.9733
7 years and above	0.866	0.7302	0.235	-0.5649	2.2976
Income					
Under $150 – reference					
$150 - $250	0.350	0.6331	0.580	-0.8909	1.5908
$250 - $300	0.484	0.6996	0.489	-0.8874	1.8550
$300 - $500	0.386	0.6377	0.545	-0.8643	1.6355
$500 and above	-0.036	0.6492	0.955	-1.3087	1.2362
Marital status					
Single - reference					
Having partner/boyfriend	0.848	0.5316	0.111	-0.1936	1.8901
Married (having husband)	1.429	0.5860	0.015	0.2805	2.5776
Divorced/separated/widowed	0.676	0.5104	0.185	-0.3241	1.6769
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.485	0.3780	0.200	-1.2256	0.2562
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.837	0.4163	0.044	0.0211	1.6531
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.669	0.4363	0.125	-1.5241	0.1862
Disclosed status as sex worker (0=no, 1=yes)	-0.405	0.3115	0.194	-1.0154	0.2056
Ever suspected contracting HIV (0=no, 1=yes)	0.211	0.3468	0.544	-0.4690	0.8903
Risk index					
Low risk – reference					
Medium risk	0.231	0.3454	0.503	-0.4457	0.9082
High risk	0.217	0.3837	0.571	-0.5348	0.9691
Stigma and discrimination index					
Low – reference					
Medium	-0.216	0.3413	0.527	-0.8845	0.4532
High	-0.652	0.3925	0.097	-1.4210	0.1177
Constant	-0.844	1.1794	0.474	-3.1554	1.4679

Table 6 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV testing (any type) in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Flagship TA (GF) Model					
Age					
18-24 years – reference					
25-30 years	1.028	0.3473	0.003	0.3477	1.7091
31 years and above	1.116	0.4237	0.008	0.2853	1.9460
Education					
Under 1 year – reference					
1-6 years	-0.375	0.4441	0.399	-1.2453	0.4954
7 years and above	-0.126	0.4676	0.788	-1.0423	0.7906
Income					
Under $150 – reference					
$150 - $250	1.370	0.4728	0.004	0.4435	2.2971
$250 - $300	0.710	0.5287	0.179	-0.3258	1.7467
$300 - $500	0.497	0.4414	0.260	-0.3683	1.3621
$500 and above	0.689	0.5133	0.179	-0.3168	1.6954
Marital status					
Single - reference					
Having partner/boyfriend	-0.031	0.5736	0.957	-1.1554	1.0931
Married (having husband)	-0.974	0.6713	0.147	-2.2897	0.3418
Divorced/separated/widowed	-1.123	0.5445	0.039	-2.1902	-0.0559
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.488	0.3515	0.165	-0.2007	1.1772
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.288	0.4172	0.489	-0.5293	1.1062
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.341	0.3423	0.319	-0.3300	1.0118
Disclosed status as sex worker (0=no, 1=yes)	0.067	0.2843	0.814	-0.4904	0.6241
Ever suspected contracting HIV (0=no, 1=yes)	0.011	0.2765	0.970	-0.5313	0.5524
Risk index					
Low risk – reference					
Medium risk	0.281	0.3102	0.365	-0.3267	0.8891
High risk	-0.379	0.3797	0.319	-1.1227	0.3656
Stigma and discrimination index					
Low – reference					
Medium	-0.011	0.3282	0.974	-0.6539	0.6326
High	-0.104	0.3422	0.760	-0.7751	0.5663
Constant	-0.595	0.9037	0.510	-2.3661	1.1762
Non-Flagship (GF) – Model					
Age					
18-24 years – reference					
25-30 years	0.080	0.3541	0.822	-0.6142	0.7737
31 years and above	-1.098	0.4139	0.008	-1.9089	-0.2865
Education					
Under 1 year – reference					
1-6 years	-1.417	0.4976	0.004	-2.3921	-0.4415
7 years and above	-0.960	0.5605	0.087	-2.0585	0.1388
Income					
Under $150 – reference					
$150 - $250	0.456	0.4436	0.304	-0.4134	1.3255
$250 - $300	0.944	0.5575	0.090	-0.1484	2.0372
$300 - $500	0.894	0.4861	0.066	-0.0586	1.8468
$500 and above	1.363	0.6435	0.034	0.1016	2.6242

Table 6 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV testing (any type) in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Marital status					
Single - reference					
Having partner/boyfriend	-0.487	0.5319	0.360	-1.5294	0.5555
Married (having husband)	-0.520	0.6489	0.423	-1.7917	0.7518
Divorced/separated/widowed	0.098	0.5372	0.855	-0.9545	1.1514
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.091	0.4530	0.840	-0.7966	0.9792
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.758	0.5032	0.132	-0.2285	1.7441
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.219	0.4157	0.598	-1.0338	0.5959
Disclosed status as sex worker (0=no, 1=yes)	-0.119	0.2856	0.678	-0.6783	0.4412
Ever suspected contracting HIV (0=no, 1=yes)	-0.328	0.2905	0.259	-0.8974	0.2414
Risk index					
Low risk – reference					
Medium risk	1.016	0.3284	0.002	0.3719	1.6594
High risk	0.460	0.3414	0.178	-0.2092	1.1289
Stigma and discrimination index					
Low – reference					
Medium	-0.216	0.3435	0.529	-0.8894	0.4571
High	0.031	0.3362	0.928	-0.6283	0.6894
Constant	1.108	0.8582	0.197	-0.5745	2.7897
No Program Model					
Age					
18-24 years – reference					
25-30 years	-0.295	0.2925	0.314	-0.8679	0.2787
31 years and above	-0.030	0.3488	0.932	-0.7134	0.6538
Education					
Under 1 year – reference					
1-6 years	0.325	0.3862	0.400	-0.4321	1.0817
7 years and above	0.522	0.4273	0.222	-0.3153	1.3598
Income					
Under $150 – reference					
$150 - $250	0.050	0.3510	0.886	-0.6375	0.7383
$250 - $300	-0.100	0.4476	0.823	-0.9772	0.7774
$300 - $500	0.141	0.3998	0.724	-0.6425	0.9247
$500 and above	-0.044	0.4901	0.928	-1.0047	0.9165
Marital status					
Single - reference					
Having partner/boyfriend	-0.702	0.5758	0.223	-1.8302	0.4269
Married (having husband)	-0.156	0.7031	0.825	-1.5337	1.2224
Divorced/separated/widowed	-0.846	0.5507	0.124	-1.9256	0.2331
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.236	0.6243	0.705	-0.9872	1.4600
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.071	0.6868	0.918	-1.4167	1.2754
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.054	0.2956	0.854	-0.6338	0.5251
Disclosed status as sex worker (0=no, 1=yes)	-0.128	0.2512	0.610	-0.6203	0.3642
Ever suspected contracting HIV (0=no, 1=yes)	-0.521	0.2801	0.063	-1.0704	0.0277

Table 6 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV testing (any type) in the past 6 months (Continued)*

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Risk index					
Low risk – reference					
Medium risk	0.476	0.2796	0.089	-0.0719	1.0242
High risk	0.147	0.3347	0.659	-0.5085	0.8035
Stigma and discrimination index					
Low – reference					
Medium	-0.137	0.3503	0.697	-0.8232	0.5501
High	-0.391	0.2916	0.181	-0.9621	0.1811
Constant	0.470	0.7644	0.538	-1.0277	1.9687

Table 7 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV testing (any type) in the past 6 months

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by program exposure					
No exposure	0.440	0.0209	0.000	0.3994	0.4812
Some exposure	0.377	0.0390	0.000	0.3011	0.4539
High exposure	0.794	0.0198	0.000	0.7551	0.8328
Comparison of probability of outcome between the levels of program exposure					
No exposure – reference					
Some exposure	-0.063	0.0445	0.158	-0.1500	0.0244
High exposure	0.354	0.0288	0.000	0.2973	0.4100
No Exposure Model					
Age					
18-24 years – reference					
25-30 years	-0.033	0.2179	0.879	-0.4604	0.3938
31 years and above	0.143	0.2558	0.575	-0.3579	0.6447
Education					
Under 1 year – reference					
1-6 years	-0.025	0.3151	0.938	-0.6422	0.5930
7 years and above	0.135	0.3368	0.688	-0.5250	0.7952
Income					
Under $150 – reference					
$150 - $250	0.351	0.2773	0.206	-0.1926	0.8944
$250 - $300	0.234	0.3392	0.490	-0.4307	0.8990
$300 - $500	0.212	0.3043	0.486	-0.3846	0.8082
$500 and above	0.737	0.3474	0.034	0.0563	1.4180
Marital status					
Single - reference					
Having partner/boyfriend	-0.105	0.3594	0.771	-0.8091	0.5995
Married(having husband)	-0.570	0.4753	0.231	-1.5011	0.3621
Divorced/separated/widowed	-0.546	0.3543	0.124	-1.2401	0.1488
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.088	0.2590	0.734	-0.4196	0.5956
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.336	0.3103	0.278	-0.2716	0.9445
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.387	0.2248	0.085	-0.8278	0.0533
Disclosed status as sex worker (0=no, 1=yes)	-0.349	0.1773	0.049	-0.6960	-0.0010
Ever suspected contracting HIV (0=no, 1=yes)	-0.372	0.1891	0.049	-0.7425	-0.0011
Risk index					
Low risk – reference					
Medium risk	0.549	0.2018	0.007	0.1530	0.9442
High risk	-0.044	0.2316	0.851	-0.4976	0.4103
Stigma and discrimination index					
Low – reference					
Medium	0.166	0.2315	0.474	-0.2880	0.6197
High	0.146	0.2152	0.496	-0.2754	0.5682
Constant	-0.183	0.5458	0.738	-1.2525	0.8869
Some Exposure Model					
Age					
18-24 years – reference					
25-30 years	0.484	0.5551	0.383	-0.6038	1.5721
31 years and above	-0.085	0.6453	0.895	-1.3497	1.1797

Table 7 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV testing (any type) in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Education					
Under 1 year – reference					
1-6 years	0.195	0.7035	0.781	-1.1834	1.5744
7 years and above	-0.096	0.7225	0.894	-1.5120	1.3202
Income					
Under $150 – reference					
$150 - $250	0.574	0.6761	0.396	-0.7507	1.8995
$250 - $300	-0.411	0.7816	0.599	-1.9426	1.1212
$300 - $500	1.573	0.7163	0.028	0.1687	2.9767
$500 and above	1.063	0.7378	0.150	-0.3835	2.5087
Marital status					
Single - reference					
Having partner/boyfriend	0.952	0.9909	0.337	-0.9904	2.8939
Married(having husband)	2.472	1.1485	0.031	0.2213	4.7232
Divorced/separated/widowed	1.598	1.0067	0.112	-0.3754	3.5708
Duration living in current location					
Less than 12 months – reference					
12 months and above	2.142	0.8040	0.008	0.5660	3.7178
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-2.061	0.9020	0.022	-3.8290	-0.2932
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.099	0.5819	0.866	-1.0421	1.2391
Disclosed status as sex worker (0=no, 1=yes)	0.540	0.3875	0.163	-0.2191	1.3001
Ever suspected contracting HIV (0=no, 1=yes)	0.311	0.4304	0.470	-0.5323	1.1548
Risk index					
Low risk – reference					
Medium risk	-1.337	0.5818	0.022	-2.4779	-0.1971
High risk	-0.413	0.5887	0.483	-1.5669	0.7408
Stigma and discrimination index					
Low – reference					
Medium	-0.077	0.5326	0.885	-1.1210	0.9669
High	1.138	0.5255	0.030	0.1084	2.1684
Constant	-3.529	1.4627	0.016	-6.3959	-0.6620
High Exposure – Model					
Age					
18-24 years – reference					
25-30 years	0.286	0.3365	0.394	-0.3729	0.9459
31 years and above	0.214	0.3399	0.530	-0.4526	0.8800
Education					
Under 1 year – reference					
1-6 years	-0.513	0.4723	0.277	-1.4388	0.4124
7 years and above	-0.391	0.4940	0.428	-1.3598	0.5768
Income					
Under $150 – reference					
$150 - $250	-0.102	0.6052	0.867	-1.2879	1.0845
$250 - $300	0.009	0.6772	0.990	-1.3185	1.3360
$300 - $500	-0.450	0.5930	0.448	-1.6120	0.7125
$500 and above	-0.685	0.6074	0.259	-1.8756	0.5052
Marital status					
Single - reference					
Having partner/boyfriend	0.421	0.5539	0.447	-0.6648	1.5063
Married(having husband)	0.343	0.5975	0.566	-0.8284	1.5137
Divorced/separated/widowed	-0.103	0.4986	0.837	-1.0800	0.8746

Table 7 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV testing (any type) in the past 6 months (Continued)*

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.541	0.4089	0.186	-0.2608	1.3420
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.165	0.4255	0.699	-0.9984	0.6693
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.394	0.3987	0.323	-1.1758	0.3873
Disclosed status as sex worker (0=no, 1=yes)	0.202	0.2505	0.419	-0.2886	0.6934
Ever suspected contracting HIV (0=no, 1=yes)	-0.413	0.2475	0.095	-0.8977	0.0725
Risk index					
Low risk – reference					
Medium risk	0.255	0.2853	0.372	-0.3044	0.8138
High risk	0.050	0.3176	0.875	-0.5726	0.6726
Stigma and discrimination index					
Low – reference					
Medium	-0.230	0.2649	0.385	-0.7491	0.2891
High	0.012	0.3338	0.972	-0.6427	0.6659
Constant	1.875	0.8574	0.029	0.1945	3.5555

19.4.3. HIV Finger Prick Testing

Table 8 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV finger prick testing in the past 6 months

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by geographic area					
Flagship CoE	0.487	0.0357	0.000	0.4170	0.5571
Flagship TA (GF)	0.523	0.0280	0.000	0.4675	0.5775
Non-Flagship (GF)	0.566	0.0283	0.000	0.5109	0.6220
No Program	0.368	0.0276	0.000	0.3143	0.4226
Comparison of probability of outcome between the geographic areas					
No program – reference					
Flagship CoE	0.119	0.0454	0.009	0.0297	0.2075
Flagship TA (GF)	0.154	0.0392	0.000	0.0772	0.2309
Non-Flagship (GF)	0.198	0.0394	0.000	0.1207	0.2753
Flagship CoE Model					
Age					
18-24 years – reference					
25-30 years	0.142	0.3560	0.691	-0.5562	0.8394
31 years and above	0.321	0.4217	0.447	-0.5060	1.1473
Education					
Under 1 year – reference					
1-6 years	0.176	0.6984	0.801	-1.1932	1.5445
7 years and above	0.641	0.7185	0.372	-0.7675	2.0489
Income					
Under $150 – reference					
$150 - $250	-0.297	0.6126	0.627	-1.4982	0.9032
$250 - $300	0.262	0.6944	0.706	-1.0990	1.6232
$300 - $500	-0.141	0.6059	0.817	-1.3281	1.0469
$500 and above	-0.590	0.6393	0.356	-1.8430	0.6631
Marital status					
Single - reference					
Having partner/boyfriend	0.839	0.5089	0.099	-0.1582	1.8366
Married (having husband)	1.406	0.5704	0.014	0.2877	2.5235
Divorced/separated/widowed	0.911	0.4944	0.065	-0.0579	1.8799
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.633	0.3986	0.113	-1.4138	0.1487
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	1.222	0.4492	0.007	0.3412	2.1021
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-1.050	0.4401	0.017	-1.9130	-0.1877
Disclosed status as sex worker (0=no, 1=yes)	-0.229	0.3127	0.463	-0.8423	0.3835
Ever suspected contracting HIV (0=no, 1=yes)	0.374	0.3338	0.263	-0.2805	1.0282
Risk index					
Low risk – reference					
Medium risk	-0.188	0.3424	0.583	-0.8589	0.4832
High risk	0.464	0.3796	0.222	-0.2800	1.2081
Stigma and discrimination index					
Low – reference					
Medium	-0.281	0.3311	0.396	-0.9297	0.3680
High	-0.772	0.4006	0.054	-1.5574	0.0128
Constant	-0.491	1.1178	0.661	-2.6815	1.7002

Table 8 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV finger prick testing in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Flagship TA (GF) Model					
Age					
18-24 years – reference					
25-30 years	1.112	0.3601	0.002	0.4064	1.8179
31 years and above	1.116	0.4298	0.009	0.2733	1.9581
Education					
Under 1 year – reference					
1-6 years	-0.148	0.4348	0.733	-1.0005	0.7040
7 years and above	0.135	0.4546	0.767	-0.7561	1.0259
Income					
Under $150 – reference					
$150 - $250	1.512	0.4881	0.002	0.5553	2.4688
$250 - $300	0.898	0.5508	0.103	-0.1819	1.9771
$300 - $500	0.007	0.4603	0.988	-0.8955	0.9088
$500 and above	0.381	0.5295	0.472	-0.6569	1.4185
Marital status					
Single - reference					
Having partner/boyfriend	-0.131	0.5460	0.811	-1.2008	0.9393
Married (having husband)	-1.401	0.6841	0.041	-2.7418	-0.0603
Divorced/separated/widowed	-1.392	0.5376	0.010	-2.4460	-0.3387
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.295	0.3509	0.400	-0.3926	0.9829
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.833	0.4056	0.040	0.0385	1.6284
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.052	0.3574	0.885	-0.7523	0.6487
Disclosed status as sex worker (0=no, 1=yes)	0.037	0.2858	0.898	-0.5234	0.5968
Ever suspected contracting HIV (0=no, 1=yes)	-0.215	0.2774	0.439	-0.7584	0.3289
Risk index					
Low risk – reference					
Medium risk	0.226	0.2969	0.446	-0.3556	0.8084
High risk	-0.196	0.3918	0.617	-0.9637	0.5722
Stigma and discrimination index					
Low – reference					
Medium	0.000	0.3295	0.999	-0.6455	0.6461
High	-0.396	0.3407	0.245	-1.0634	0.2721
Constant	-0.669	0.8926	0.454	-2.4181	1.0807
Non-Flagship (GF) – Model					
Age					
18-24 years – reference					
25-30 years	0.145	0.3305	0.661	-0.5027	0.7928
31 years and above	-0.837	0.3887	0.031	-1.5991	-0.0755
Education					
Under 1 year – reference					
1-6 years	-0.780	0.4182	0.062	-1.5996	0.0399
7 years and above	-0.359	0.4659	0.441	-1.2724	0.5539
Income					
Under $150 – reference					
$150 - $250	0.602	0.4273	0.159	-0.2356	1.4394
$250 - $300	1.063	0.5139	0.039	0.0556	2.0701
$300 - $500	0.971	0.4662	0.037	0.0569	1.8843
$500 and above	0.653	0.5869	0.266	-0.4969	1.8037

Table 8 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV finger prick testing in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Marital status					
Single - reference					
Having partner/boyfriend	-0.667	0.5246	0.203	-1.6953	0.3610
Married (having husband)	-0.412	0.6134	0.502	-1.6144	0.7901
Divorced/separated/widowed	-0.276	0.5081	0.586	-1.2723	0.7194
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.522	0.4450	0.241	-0.3506	1.3938
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.070	0.4852	0.885	-0.8807	1.0212
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.017	0.4023	0.966	-0.8053	0.7715
Disclosed status as sex worker (0=no, 1=yes)	0.129	0.2669	0.630	-0.3946	0.6518
Ever suspected contracting HIV (0=no, 1=yes)	-0.224	0.2736	0.413	-0.7601	0.3123
Risk index					
Low risk – reference					
Medium risk	1.269	0.3202	0.000	0.6411	1.8962
High risk	0.451	0.3227	0.162	-0.1818	1.0834
Stigma and discrimination index					
Low – reference					
Medium	-0.605	0.3187	0.058	-1.2293	0.0200
High	-0.001	0.3149	0.998	-0.6180	0.6162
Constant	0.033	0.7581	0.965	-1.4530	1.5187
No Program Model					
Age					
18-24 years – reference					
25-30 years	-0.948	0.3051	0.002	-1.5463	-0.3503
31 years and above	-0.513	0.3812	0.178	-1.2605	0.2339
Education					
Under 1 year – reference					
1-6 years	0.106	0.4141	0.798	-0.7057	0.9175
7 years and above	0.307	0.4603	0.504	-0.5949	1.2095
Income					
Under $150 – reference					
$150 - $250	0.151	0.3621	0.676	-0.5586	0.8610
$250 - $300	0.069	0.4717	0.883	-0.8553	0.9938
$300 - $500	-0.119	0.4047	0.768	-0.9125	0.6737
$500 and above	-0.057	0.5213	0.913	-1.0789	0.9646
Marital status					
Single - reference					
Having partner/boyfriend	0.579	0.5075	0.254	-0.4161	1.5734
Married (having husband)	1.046	0.6377	0.101	-0.2035	2.2962
Divorced/separated/widowed	0.453	0.4970	0.362	-0.5211	1.4271
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.533	0.4599	0.247	-0.3685	1.4344
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.480	0.5372	0.372	-1.5324	0.5732
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.772	0.3015	0.010	0.1810	1.3630
Disclosed status as sex worker (0=no, 1=yes)	-0.251	0.2548	0.325	-0.7503	0.2485
Ever suspected contracting HIV (0=no, 1=yes)	-0.739	0.3163	0.020	-1.3586	-0.1186

Table 8 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of getting HIV finger prick testing in the past 6 months (Continued)*

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Risk index					
Low risk – reference					
Medium risk	0.689	0.2966	0.020	0.1077	1.2702
High risk	0.105	0.3182	0.742	-0.5191	0.7284
Stigma and discrimination index					
Low – reference					
Medium	0.394	0.3520	0.263	-0.2957	1.0842
High	-0.002	0.3184	0.995	-0.6258	0.6221
Constant	-1.376	0.7433	0.064	-2.8330	0.0808

Table 9 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV finger prick testing in the past 6 months

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by program exposure					
No exposure	0.325	0.0200	0.000	0.2862	0.3646
Some exposure	0.205	0.0378	0.000	0.1305	0.2787
High exposure	0.723	0.0216	0.000	0.6811	0.7656
Comparison of probability of outcome between the levels of program exposure					
No exposure – reference					
Some exposure	-0.121	0.0430	0.005	-0.2050	-0.0366
High exposure	0.398	0.0294	0.000	0.3403	0.4556
No Exposure Model					
Age					
18-24 years – reference					
25-30 years	0.070	0.2318	0.761	-0.3840	0.5248
31 years and above	-0.006	0.2772	0.982	-0.5497	0.5369
Education					
Under 1 year – reference					
1-6 years	-0.058	0.3280	0.860	-0.7008	0.5851
7 years and above	0.032	0.3591	0.930	-0.6721	0.7356
Income					
Under $150 – reference					
$150 - $250	0.175	0.2919	0.549	-0.3972	0.7470
$250 - $300	0.114	0.3562	0.749	-0.5840	0.8123
$300 - $500	0.076	0.3221	0.813	-0.5549	0.7076
$500 and above	0.575	0.3597	0.110	-0.1296	1.2803
Marital status					
Single - reference					
Having partner/boyfriend	0.047	0.3780	0.900	-0.6933	0.7883
Married(having husband)	-0.183	0.5030	0.716	-1.1688	0.8029
Divorced/separated/widowed	-0.382	0.3855	0.322	-1.1372	0.3739
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.157	0.2696	0.560	-0.3713	0.6854
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.235	0.3280	0.473	-0.4074	0.8782
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.055	0.2344	0.815	-0.4046	0.5143
Disclosed status as sex worker (0=no, 1=yes)	-0.411	0.1890	0.029	-0.7817	-0.0410
Ever suspected contracting HIV (0=no, 1=yes)	-0.377	0.2040	0.064	-0.7773	0.0225
Risk index					
Low risk – reference					
Medium risk	0.523	0.2137	0.014	0.1043	0.9421
High risk	-0.065	0.2545	0.797	-0.5644	0.4334
Stigma and discrimination index					
Low – reference					
Medium	0.150	0.2518	0.552	-0.3436	0.6433
High	0.265	0.2322	0.253	-0.1899	0.7203
Constant	-0.943	0.5877	0.109	-2.0950	0.2087
Some Exposure Model					
Age					
18-24 years – reference					
25-30 years	-1.111	0.8367	0.184	-2.7504	0.5293
31 years and above	0.062	0.8089	0.939	-1.5237	1.6472

Table 9 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV finger prick testing in the past 6 months (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Education					
Under 1 year – reference					
1-6 years	-0.102	0.9041	0.910	-1.8737	1.6704
7 years and above	0.108	1.0316	0.916	-1.9137	2.1302
Income					
Under $150 – reference					
$150 - $250	0.426	0.8402	0.612	-1.2211	2.0724
$250 - $300	0.093	0.9354	0.920	-1.7399	1.9267
$300 - $500	1.123	0.8078	0.164	-0.4603	2.7063
$500 and above	-0.763	1.3347	0.568	-3.3786	1.8533
Marital status					
Single - reference					
Having partner/boyfriend	0.403	1.0597	0.704	-1.6741	2.4799
Married(having husband)	1.783	1.1465	0.120	-0.4636	4.0305
Divorced/separated/widowed	0.635	0.9445	0.501	-1.2160	2.4863
Duration living in current location					
Less than 12 months – reference					
12 months and above	1.744	1.0147	0.086	-0.2443	3.7332
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-2.972	1.1763	0.012	-5.2772	-0.6660
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.126	0.7466	0.866	-1.3378	1.5890
Disclosed status as sex worker (0=no, 1=yes)	0.459	0.5399	0.395	-0.5990	1.5174
Ever suspected contracting HIV (0=no, 1=yes)	-0.322	0.5638	0.568	-1.4270	0.7829
Risk index					
Low risk – reference					
Medium risk	-0.869	0.7418	0.242	-2.3226	0.5853
High risk	-0.073	0.7331	0.921	-1.5097	1.3642
Stigma and discrimination index					
Low – reference					
Medium	0.053	0.5897	0.929	-1.1029	1.2087
High	0.065	0.6048	0.914	-1.1201	1.2507
Constant	-1.888	1.5159	0.213	-4.8589	1.0835
High Exposure – Model					
Age					
18-24 years – reference					
25-30 years	0.153	0.2950	0.604	-0.4250	0.7312
31 years and above	-0.132	0.3180	0.679	-0.7550	0.4917
Education					
Under 1 year – reference					
1-6 years	-0.253	0.3895	0.515	-1.0168	0.5101
7 years and above	-0.074	0.4046	0.854	-0.8675	0.7187
Income					
Under $150 – reference					
$150 - $250	0.351	0.4871	0.471	-0.6036	1.3058
$250 - $300	0.342	0.5495	0.534	-0.7352	1.4188
$300 - $500	-0.358	0.4712	0.448	-1.2811	0.5660
$500 and above	-0.723	0.4948	0.144	-1.6926	0.2471
Marital status					
Single - reference					
Having partner/boyfriend	0.214	0.5270	0.684	-0.8188	1.2472
Married(having husband)	0.240	0.5561	0.666	-0.8503	1.3297
Divorced/separated/widowed	-0.140	0.4821	0.771	-1.0851	0.8049

Table 9 *Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of getting HIV finger prick testing in the past 6 months (Continued)*

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.213	0.3612	0.555	-0.4945	0.9214
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.343	0.3715	0.356	-0.3855	1.0707
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	-0.716	0.3491	0.040	-1.3999	-0.0316
Disclosed status as sex worker (0=no, 1=yes)	0.166	0.2257	0.461	-0.2761	0.6087
Ever suspected contracting HIV (0=no, 1=yes)	-0.340	0.2266	0.134	-0.7840	0.1043
Risk index					
Low risk – reference					
Medium risk	0.140	0.2577	0.586	-0.3648	0.6454
High risk	0.227	0.2902	0.433	-0.3413	0.7963
Stigma and discrimination index					
Low – reference					
Medium	-0.303	0.2526	0.231	-0.7978	0.1922
High	-0.178	0.2921	0.542	-0.7509	0.3942
Constant	1.469	0.7408	0.047	0.0173	2.9214

19.4.4. Stigma and Discrimination

Table 10 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of being in high stigma and discrimination

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by geographic area					
Flagship CoE	0.419	0.0334	0.000	0.353	0.484
Flagship TA (GF)	0.508	0.0288	0.000	0.451	0.564
Non-Flagship (GF)	0.425	0.0287	0.000	0.369	0.481
No Program	0.617	0.0284	0.000	0.561	0.673
Comparison of probability of outcome between the geographic areas					
No program – reference					
Flagship CoE	-0.198	0.0436	0.000	-0.284	-0.113
Flagship TA (GF)	-0.109	0.0402	0.007	-0.188	-0.031
Non-Flagship (GF)	-0.192	0.0401	0.000	-0.271	-0.113
Flagship CoE Model					
Age					
18-24 years – reference					
25-30 years	-0.951	0.3840	0.013	-1.704	-0.198
31 years and above	-0.422	0.4555	0.354	-1.315	0.471
Education					
Under 1 year – reference					
1-6 years	-1.052	0.7060	0.136	-2.436	0.331
7 years and above	-2.078	0.7360	0.005	-3.521	-0.635
Income					
Under $150 – reference					
$150 - $250	-0.670	0.5916	0.257	-1.830	0.489
$250 - $300	-1.026	0.6576	0.119	-2.315	0.263
$300 - $500	-0.954	0.5565	0.086	-2.045	0.136
$500 and above	-0.826	0.6307	0.190	-2.062	0.410
Marital status					
Single - reference					
Having partner/boyfriend	0.158	0.5382	0.769	-0.897	1.213
Married (having husband)	-0.024	0.6101	0.969	-1.219	1.172
Divorced/separated/widowed	0.033	0.5430	0.951	-1.031	1.098
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.544	0.4078	0.183	-1.343	0.256
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.220	0.4854	0.651	-0.732	1.171
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.120	0.4797	0.802	-0.820	1.060
Disclosed status as sex worker (0=no, 1=yes)	0.051	0.3117	0.871	-0.560	0.662
Ever suspected contracting HIV (0=no, 1=yes)	0.502	0.3321	0.130	-0.149	1.153
Risk index					
Low risk – reference					
Medium risk	-0.219	0.3569	0.539	-0.919	0.480
High risk	0.311	0.3602	0.388	-0.395	1.017
Constant	2.014	1.0091	0.046	0.036	3.992
Flagship TA (GF) Model					
Age					
18-24 years – reference					
25-30 years	-0.873	0.3420	0.011	-1.543	-0.202
31 years and above	-0.764	0.4081	0.061	-1.564	0.036

Table 10 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of being in high stigma and discrimination (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Education					
Under 1 year – reference					
1-6 years	-0.212	0.4208	0.614	-1.037	0.613
7 years and above	-1.008	0.4566	0.027	-1.903	-0.113
Income					
Under $150 – reference					
$150 - $250	0.696	0.4706	0.139	-0.226	1.619
$250 - $300	-0.567	0.5491	0.302	-1.643	0.509
$300 - $500	0.202	0.4702	0.667	-0.719	1.124
$500 and above	-0.015	0.4933	0.976	-0.981	0.952
Marital status					
Single - reference					
Having partner/boyfriend	-0.456	0.5672	0.421	-1.568	0.655
Married (having husband)	-0.979	0.6558	0.136	-2.264	0.307
Divorced/separated/widowed	-0.567	0.5585	0.310	-1.662	0.528
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.602	0.3521	0.087	-1.292	0.088
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.179	0.3835	0.641	-0.931	0.573
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.170	0.3460	0.623	-0.508	0.848
Disclosed status as sex worker (0=no, 1=yes)	-0.319	0.2653	0.229	-0.839	0.201
Ever suspected contracting HIV (0=no, 1=yes)	0.008	0.2677	0.977	-0.517	0.532
Risk index					
Low risk – reference					
Medium risk	0.109	0.2889	0.705	-0.457	0.676
High risk	0.039	0.3584	0.914	-0.664	0.741
Constant	1.805	0.8395	0.032	0.160	3.450
Non-Flagship (GF) – Model					
Age					
18-24 years – reference					
25-30 years	-0.817	0.3299	0.013	-1.464	-0.171
31 years and above	-0.326	0.3710	0.379	-1.053	0.401
Education					
Under 1 year – reference					
1-6 years	0.605	0.4193	0.149	-0.217	1.427
7 years and above	-0.194	0.4652	0.676	-1.106	0.717
Income					
Under $150 – reference					
$150 - $250	-0.761	0.4218	0.071	-1.588	0.065
$250 - $300	-1.011	0.5359	0.059	-2.061	0.039
$300 - $500	-1.267	0.4454	0.004	-2.140	-0.394
$500 and above	-0.844	0.5064	0.095	-1.837	0.148
Marital status					
Single - reference					
Having partner/boyfriend	0.507	0.5710	0.374	-0.612	1.626
Married (having husband)	-0.105	0.6704	0.876	-1.419	1.209
Divorced/separated/widowed	0.222	0.5604	0.692	-0.876	1.320
Duration living in current location					
Less than 12 months – reference					
12 months and above	0.076	0.4100	0.853	-0.728	0.880
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.547	0.4564	0.230	-1.442	0.347

Table 10 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of geographic area on the probability of being in high stigma and discrimination (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.265	0.4122	0.520	-0.543	1.073
Disclosed status as sex worker (0=no, 1=yes)	0.372	0.2618	0.155	-0.141	0.885
Ever suspected contracting HIV (0=no, 1=yes)	0.502	0.2696	0.062	-0.026	1.031
Risk index					
Low risk – reference					
Medium risk	-0.374	0.3108	0.228	-0.984	0.235
High risk	-0.640	0.3127	0.041	-1.253	-0.027
Constant	0.391	0.7674	0.610	-1.113	1.895
No Program Model					
Age					
18-24 years – reference					
25-30 years	0.235	0.3059	0.442	-0.364	0.835
31 years and above	0.637	0.3700	0.085	-0.088	1.363
Education					
Under 1 year – reference					
1-6 years	0.818	0.3464	0.018	0.139	1.497
7 years and above	-0.178	0.3825	0.642	-0.928	0.572
Income					
Under $150 – reference					
$150 - $250	-0.253	0.3885	0.515	-1.014	0.508
$250 - $300	-0.404	0.4910	0.411	-1.366	0.558
$300 - $500	-0.950	0.4220	0.024	-1.777	-0.122
$500 and above	-0.337	0.5420	0.534	-1.399	0.725
Marital status					
Single - reference					
Having partner/boyfriend	0.478	0.5976	0.424	-0.694	1.649
Married (having husband)	-0.024	0.6967	0.973	-1.389	1.342
Divorced/separated/widowed	-0.136	0.5688	0.811	-1.251	0.979
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.717	0.5919	0.226	-1.877	0.443
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.201	0.6632	0.762	-1.099	1.501
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.390	0.3208	0.224	-0.238	1.019
Disclosed status as sex worker (0=no, 1=yes)	-0.260	0.2641	0.325	-0.778	0.258
Ever suspected contracting HIV (0=no, 1=yes)	-0.270	0.2868	0.346	-0.832	0.292
Risk index					
Low risk – reference					
Medium risk	-0.002	0.3051	0.994	-0.600	0.596
High risk	0.341	0.3468	0.326	-0.339	1.020
Constant	0.500	0.7077	0.479	-0.887	1.888

Table 11 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of being in high stigma and discrimination

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Average probability of outcome by program exposure					
No exposure	0.596	0.0203	0.000	0.556	0.636
Some exposure	0.522	0.0420	0.000	0.440	0.604
High exposure	0.378	0.0230	0.000	0.333	0.423
Comparison of probability of outcome between the levels of program exposure					
No exposure – reference					
Some exposure	-0.074	0.0466	0.113	-0.165	0.017
High exposure	-0.218	0.0304	0.000	-0.277	-0.158
No Exposure Model					
Age					
18-24 years – reference					
25-30 years	-0.347	0.2176	0.111	-0.773	0.080
31 years and above	-0.068	0.2523	0.788	-0.562	0.427
Education					
Under 1 year – reference					
1-6 years	-0.021	0.2946	0.944	-0.598	0.557
7 years and above	-0.433	0.3159	0.170	-1.053	0.186
Income					
Under $150 – reference					
$150 - $250	-0.084	0.2849	0.768	-0.642	0.474
$250 - $300	-0.278	0.3429	0.418	-0.950	0.394
$300 - $500	-0.483	0.3023	0.110	-1.075	0.110
$500 and above	-0.462	0.3412	0.176	-1.130	0.207
Marital status					
Single - reference					
Having partner/boyfriend	-0.259	0.3898	0.507	-1.022	0.505
Married(having husband)	-0.372	0.4762	0.435	-1.305	0.561
Divorced/separated/widowed	-0.569	0.3879	0.142	-1.329	0.191
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.418	0.2573	0.104	-0.923	0.086
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	0.259	0.3061	0.398	-0.341	0.859
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.118	0.2245	0.598	-0.322	0.558
Disclosed status as sex worker (0=no, 1=yes)	0.128	0.1801	0.478	-0.225	0.481
Ever suspected contracting HIV (0=no, 1=yes)	0.387	0.1952	0.047	0.004	0.770
Risk index					
Low risk – reference					
Medium risk	0.076	0.2058	0.714	-0.328	0.479
High risk	0.045	0.2191	0.836	-0.384	0.475
Constant	1.217	0.5307	0.022	0.176	2.257
Some Exposure Model					
Age					
18-24 years – reference					
25-30 years	-0.444	0.4978	0.373	-1.419	0.532
31 years and above	-0.117	0.5957	0.844	-1.285	1.050
Education					
Under 1 year – reference					
1-6 years	-0.454	0.5374	0.398	-1.507	0.599
7 years and above	-0.409	0.6041	0.498	-1.593	0.775

Table 11 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of being in high stigma and discrimination (Continued)

Variable	Probability	Robust Std. Err.	Sig. Level	95% Conf. Interval	
Income					
Under $150 – reference					
$150 - $250	-0.855	0.6293	0.174	-2.088	0.379
$250 - $300	-1.205	0.7325	0.100	-2.640	0.231
$300 - $500	-0.630	0.6347	0.321	-1.874	0.614
$500 and above	-1.502	0.7893	0.057	-3.049	0.045
Marital status					
Single - reference					
Having partner/boyfriend	0.714	0.7304	0.328	-0.718	2.145
Married(having husband)	0.389	0.8971	0.665	-1.369	2.147
Divorced/separated/widowed	0.312	0.7637	0.683	-1.185	1.809
Duration living in current location					
Less than 12 months – reference					
12 months and above	-1.131	0.6473	0.081	-2.399	0.138
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.337	0.7745	0.663	-1.855	1.181
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.910	0.6969	0.192	-0.456	2.276
Disclosed status as sex worker (0=no, 1=yes)	-0.373	0.3915	0.341	-1.140	0.394
Ever suspected contracting HIV (0=no, 1=yes)	-1.017	0.4218	0.016	-1.844	-0.191
Risk index					
Low risk – reference					
Medium risk	-0.093	0.4955	0.851	-1.064	0.878
High risk	0.297	0.4811	0.536	-0.645	1.240
Constant	1.863	1.0182	0.067	-0.132	3.859
High Exposure – Model					
Age					
18-24 years – reference					
25-30 years	-0.565	0.2613	0.031	-1.077	-0.053
31 years and above	-0.496	0.3256	0.128	-1.134	0.142
Education					
Under 1 year – reference					
1-6 years	0.193	0.3565	0.589	-0.506	0.891
7 years and above	-0.817	0.3852	0.034	-1.572	-0.062
Income					
Under $150 – reference					
$150 - $250	0.010	0.3972	0.979	-0.768	0.789
$250 - $300	-0.521	0.4578	0.255	-1.419	0.376
$300 - $500	-0.819	0.4033	0.042	-1.610	-0.029
$500 and above	-0.346	0.4277	0.418	-1.185	0.492
Marital status					
Single - reference					
Having partner/boyfriend	0.347	0.4367	0.427	-0.509	1.203
Married(having husband)	-0.339	0.5238	0.517	-1.366	0.687
Divorced/separated/widowed	0.206	0.4153	0.620	-0.608	1.020
Duration living in current location					
Less than 12 months – reference					
12 months and above	-0.532	0.3336	0.111	-1.186	0.122
Duration working in current workplace					
Less than 12 months – reference					
12 months and above	-0.091	0.3406	0.790	-0.758	0.577
Duration engaged in sex work					
Less than 12 months – reference					
12 months and above	0.167	0.3133	0.593	-0.447	0.782
Disclosed status as sex worker (0=no, 1=yes)	0.011	0.2153	0.959	-0.411	0.433
Ever suspected contracting HIV (0=no, 1=yes)	0.425	0.2190	0.052	-0.004	0.854

Table 11 Inverse-probability-weighed regression adjustment (IPWRA) model: The effect of program exposure on the probability of being in high stigma and discrimination (Continued)

Risk index					
Low risk – reference					
Medium risk	-0.002	0.2556	0.994	-0.503	0.499
High risk	-0.034	0.2657	0.899	-0.554	0.487
Constant	0.236	0.6430	0.713	-1.024	1.497

19.4.5. Cost Allocation

Management Costs

The mean management cost was $83,650.66 ($36,020.00-$165,280.00; STD $71,020.90). The costs of insurance, benefits, and salary for program and non-program staff , the executive director, HDM/program manager, M&E officer, Training & Development, FP/HIV Counselor, UIC contract staff, contact tracing officer etc. were included under the Management costs at the central and field offices. The total cost of management/support for Flagship CoE was $165,280, $49,652 for Flagship TA and $36,020 for Non-Flagship sites.

IP Field office – Outreach staff Costs

The mean IP field office cost was $24,618.33 ($36,020.00-$165,280.00; STD $13,914.28). The IP Field office – outreach staff costs refer to the costs associated with incentives and phone cards for outreach workers and salary for the EW manager. The total outreach cost at the IP field offices was $38,306 for Flagship CoE, $25,061 for Flagship –TA program and $10,488 for Non-Flagship sites. This element accounted for 18% of the total Flagship CoE costs.

Flagship TA Costs

Flagship Technical Assistance was the core component of the SMARTgirl program and used as a key differentiating factor between Flagship-TA and Non-Flagship sites where Flagship-TA sites received TA from the Flagship CoE program. The cost of the flagship TA incudes salary, benefit, and insurance for program and non-program staff, transportation, communication, Training/workshop for implementing partners, Monitoring & evaluation (including field visits) and, other (overhead and consultant) costs. The cost allocated to flagship TA was $16,361 and, this constituted about 12 percent of the Flagship-TA program costs. This allocation was only application to Flagship-TA sites.

Administration Costs

The mean management cost was $44,884.66 ($11,381-$106,422.00; STD $53,363.02). The administration costs refer to the costs associated with non-program staff, (the finance manager), office expenses (office rental, electricity, water, office supplies, copier, printer, and ink) and capital costs (assets lasting more than one year, e.g. furniture and equipment). Capital costs were straight-line amortized over a useful life of 5 years to annualize the costs. The total administration costs both at central and filed offices was $106,422 for Flagship-CoE program, $11,381 for Flagship-TA and $16,851 for the Non-Flagship program and it accounted for about 49 percent of the total Flagship CoE costs.