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### BELIZE (2013): HIV/AIDS TRaC STUDY Evaluating condom use among Female Sex Workers (FSW)

Third Round (3)

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**BELIZE (2013): HIV/AIDS TRaC Study  
Evaluating Condom Use among FSW  
in Belize City, Cayo, Orange Walk,  
Corozal Town and Stann Creek.  
3<sup>rd</sup> Round**

PSI Research Division  
(2013)

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## SUMMARY

### BACKGROUND & RESEARCH OBJECTIVES

From February to April 2013 PASMO/PSI conducted a TRaC survey between female sex workers (FSW) in five cities of Belize: Belize city, Cayo, Orange Walk, Corozal Town and Stann Creek. The survey addressed issues of HIV/AIDS, risk behaviors and determinants of condom use. This survey is a follow-up of rounds conducted in 2008 and 2010, and seeks to: 1) Monitor trends in behaviors and other key determinants of Opportunity, Ability and Motivation (OAM) between FSW, and 2) Identify the factors that characterize FSW that use condoms with all clients and their stable partners.

### DESCRIPTION OF INTERVENTION

PASMO/PSI is an organization that works through social marketing and educational interventions for the prevention of HIV / AIDS in Central America (Guatemala to Panama). Prioritizing efforts on particularly vulnerable groups (youth, men who have sex with men, sex workers, Garifuna, clients of sex workers, etc.). Based on a behavior framework, several educational and communication activities are designed to convey to people the importance of maintaining healthy sexual behaviors that prevent new HIV infections through 1) interpersonal communication activities (IPC) 2) Mass media campaigns, and 3) social marketing strategies with broad coverage to increase access and availability to male condoms.

In the 2011-2015 period, PASMO implements a Combined Prevention Program funded by the U.S. Agency for International Development (USAID), which includes three components: (a) participation of the target population in at least 3 change behavior activities, (b) conducting HIV and STIs testing, and (c) the reference to services (support groups, workshops to reduce stigma and discrimination, alcoholism and drugs use, counseling against gender violence, etc.). Within that program the use of voucher systems to record the participation of the target population in each program component (behavior change component, biomedical, and reference). Vouchers register with a unique and confidential code to each participant (CUI), which is then entered into the monitoring and information system (MIS). With this strategy it is possible to track individuals and know how many are and what kind of components are involved.

### METODOLOGY

Through time-location strategy a total of 85 in 2008, 252 in 2010 and 299 in 2013 FSW subjects were selected. The survey included questions about demographics, sexual behavior, use of condoms and lubricants, OAM determinants and exposure to PASMO interventions. Univariate analysis was conducted to monitor trends between 2007, 2009 and 2012, controlling for sociodemographic characteristics and city. Significant determinants of consistent condom use with all clients (from beginning to end of sexual intercourse) and stable partners were identified through multivariate logistic regression, controlling for city. To estimate the adjusted means or proportions of each variable in the final model univariate analysis was conducted.<sup>1</sup>

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<sup>1</sup> To obtain more details on the methodology, data collection and other parts from the study contacts the first author to get a copy of the study design.

## MAIN FINDINGS

Highlights from the monitoring analysis:

- ∴ Condom use at last sex with different type of clients has not significant changes between years, but the condom use with the latest client (any type) decreased significantly between young FSWs from 18 to 24 years (from 70.1% in 2010 to 42.1% in 2013,  $p < .001$ ).
- ∴ Consistent condom use with all types of clients decreased significantly from 2010 to 2013 (76.4% to 64.0,  $p < .05$ ) and especially between young FSWs (73.8% to 49.0%,  $p < .05$ ) but not between those FSWs from 25 years or older (77.9% to 80.2% ns).
- ∴ The use of lubricant at last sex act between those FSW that used a condom has significantly decreased from 20.7% to 6.6%.
- ∴ HIV testing has no significant changes between 2010 and 2013 for having the test or receiving the results, but the FSWs that had the test because were referred by PASMO increased significantly in 2013 (from 1.8% to 22.9%  $p < .001$ ).
- ∴ The mean of clients in the last 30 days decreased significantly for new and occasional clients (from 4.3 to 2.9,  $p < .01$  and 5.1 to 2.3,  $p < .001$  respectively) but increased for regular clients (from 3.5 to 6.1  $p < .001$ ) however the total average of clients per month decreases significantly (from 14 to 11.2,  $p < .05$ ).
- ∴ A total of 13.2% of FSWs suffered at least one type of violence (physiological, physical, verbal or sexual), and only 5.8% reported what happened to an institution, organization or support group.
- ∴ The use of coupons has been effective particularly for biomedical services, having a 12.4% of FSWs reporting using them for tests. Only 1.6% of FSWs reported receiving the coupons on an IPC activity in presence.
- ∴ Exposure to IPC activities in presence decreases significantly from 27.5% to 6.0%  $p < .001$ , the same trend is for exposure to mass media messages decreasing from 45.2% to 5.5%  $p < .001$ .

The results of first segmentation analysis indicate that the probability of FSW using condom during last contact with any client increases:

- ∴ When FSWs does not perceive discrimination against them, according to the discrimination scale items mean 2.30 vs. 2.13  $p < .05$  (OR: 2.32). Consistent users reported more adherence to this scales vs. Non users, on a scale of 1 to 4 where 1 is totally disagree and 4 is totally agree..
- ∴ When FSWs have positive self-esteem according to the scale items, mean 2.49 on consistent users vs. 2.33 on inconsistent users ( $p < 0.05$  OR: 2.13), on a scale of 1 to 4.
- ∴ If they report that clients are not the ones who decide to use or not the condom. Consistent users reported more adherence to this statement (mean 2.97) vs. non users (mean 2.73),  $p < .05$  OR: 1.86.

A second segmentation analysis indicates that the probability of condom use with stable partners between FSWs increases:

- ∴ When they have used biomedical services in the last 12 months, consistent condom users reported more adherences to this behavior (84.8%) vs. inconsistent users (60.0%)  $p < .05$  OR: 3.82.
- ∴ If they can identify correctly two ways of HIV prevention (condom use and mutual fidelity) and reject the myth “a person cannot look healthy and have HIV” having more adherences between consistent users (91.4%) vs. non users (74.3%)  $p < .05$  OR: 5.25.
- ∴ When FSWs have positive self-esteem according to the scale items, mean 3.08 on consistent users vs. 2.86 on inconsistent users ( $p < 0.05$  OR: 10.74), on a scale of 1 to 4.

The analysis also indicates that the probability of condom use with stable partners between FSWs reduces:

- ∴ If they agree with the statement “clients bring their own condoms” with more adherence between non users (mean 2.65) vs. users (mean 2.25),  $p < .001$  OR: 0.13.
- ∴ And when they agree that is not them who give the condoms to the clients with more adherences between non users (mean 3.01) vs. users (mean 2.78),  $p < .05$  OR: 0.38.

The Evaluation Analysis table shows that:

- ∴ FSWs exposed to any PASMO activity, were more likely to have an HIV test and with results (O.R. 5.52)
- ∴ FSWs exposed to IPC activity were more likely to be consistent condom uses with all clients (O.R. 18.83).

## PROGRAMMATIC RECOMMENDATIONS

Based on the results some recommendations are:

- ⚡ Reinforce efforts on condoms use promotion, especially in “consistent condom use with all types of clients” 2013 results showed significant decreases between young FSWs. Hypothetically this could be related to their recent arrival to the country which makes them less exposed to prevention messages, but also suggest a more intense exposure to prevention messages on this age rank.
- ⚡ Social Support in terms of positive self-esteem, No discrimination and locus of control for condom use, are the factors that increase the probability of consistent condom use with all types of clients. Messages for FSWs have to reinforce their higher self-esteem and also messages in mass media can be related to no discrimination, trying to reach more to the general population. Locus of control is part of Combination Prevention Program main messages and needs to be always reinforced and used.

## MONITORING TABLE:

Trends on condom use and Opportunity, Ability and Motivation determinants (OAM) in Belize city, Cayo, Orange Walk, Corozal and Stann Creek, 2008, 2010 & 2013.

**Risk group:** Female Sex Workers (FSW), between 18 & 49 years

**Behavior:** Consistent condom use in the last 30 days with all types of clients and stable partner

INDICATORS	Feb 2008 N=85	Aug 2010 N=252	Apr 2013 N=299	Sig.
<b>BEHAVIOR/USE</b>				
<i>Condom use at last sex with</i>	%	%	%	
- New client <sup>1</sup>	82.3 <sup>a</sup>	83.2 <sup>a</sup>	87.9 <sup>a</sup>	NS
- Occasional client <sup>2</sup>	80.6 <sup>a</sup>	93.3 <sup>b</sup>	86.6 <sup>ab</sup>	*
- Regular client <sup>3</sup>	74.1 <sup>a</sup>	88.9 <sup>b</sup>	88.4 <sup>b</sup>	*
- Stable partner <sup>4</sup>	42.1 <sup>a</sup>	48.7 <sup>a</sup>	42.1 <sup>a</sup>	NS
- ^ Last client (any type of client)	97.8 <sup>a</sup>	70.0 <sup>b</sup>	56.4 <sup>c</sup>	***
o 18-24 years	99.3 <sup>a</sup>	70.1 <sup>b</sup>	42.4 <sup>c</sup>	***
o 25 years or older	100 <sup>a</sup>	69.7 <sup>b</sup>	74.1 <sup>b</sup>	***
<i>Consistent condom use in the last 30 days with</i>	%	%	%	
- New clients <sup>5</sup>	93.8 <sup>a</sup>	81.6 <sup>ab</sup>	75.3 <sup>b</sup>	*
- Occasional clients <sup>6</sup>	88.4 <sup>a</sup>	88.2 <sup>a</sup>	71.0 <sup>b</sup>	*
- Regular clients <sup>7</sup>	84.5 <sup>a</sup>	93.3 <sup>a</sup>	68.5 <sup>b</sup>	**
- Stable partner(s) <sup>8</sup>	57.3 <sup>a</sup>	39.7 <sup>b</sup>	32.0 <sup>b</sup>	*
- ^ All types of clients <sup>9</sup>	79.8 <sup>a</sup>	76.4 <sup>a</sup>	64.0 <sup>b</sup>	*
o 18-24 years	71.0 <sup>a</sup>	73.8 <sup>a</sup>	49.0 <sup>b</sup>	*
o 25 years or older	88.5 <sup>a</sup>	77.9 <sup>a</sup>	80.2 <sup>a</sup>	NS
^Consistent condom use with all types of clients in the last 30 days <sup>10</sup> (from the beginning to the end of the sex act).	79.4 <sup>a</sup>	76.5 <sup>a</sup>	55.2 <sup>b</sup>	***
<i>Carrying Condoms</i>	%	%	%	
- ¥ FSW that indicated they had a condom with them at the moment of the interview	76.0 <sup>a</sup>	54.6 <sup>b</sup>	55.8 <sup>b</sup>	**
<i>Lubricant use</i>				
- ^Use of lubricant (between those FSW that used a condom) At last sex act with any type of client	43.7 <sup>a</sup>	20.7 <sup>b</sup>	6.6 <sup>c</sup>	***
<i>HIV Test</i>				
- ^ FSW that had an HIV test in the last 12 months	74.7 <sup>a</sup>	69.2 <sup>a</sup>	66.3 <sup>a</sup>	NS
- FSW that had an HIV test in the last 12 months and received results (from the total of FSW, independently they had the HIV test or not)	71.3 <sup>a</sup>	67.4 <sup>a</sup>	65.1 <sup>a</sup>	NS
- ^ FSW that had an HIV test in the last 12 months, received results and were referred by PASMO (from the total of FSW)	0.9 <sup>a</sup>	1.8 <sup>a</sup>	22.9 <sup>b</sup>	***
- FSW that received post-counseling when receiving results from the HIV test in the last 12 months (from the total of FSW)	57.7 <sup>a</sup>	46.5 <sup>a</sup>	20.7 <sup>b</sup>	***
- FSW that felt discriminated during their last HIV test	nc	nc	25.2	nc
- Have used biomedical services in the last 12 months for an STI or HIV test	9.8 <sup>a</sup>	15.2 <sup>a</sup>	69.1 <sup>b</sup>	***
<i>Mean of partners (from the total of FSW, not only those that reported each type of partner.)</i>	mean	mean	mean	
- Mean of new clients in the last 30 days	6.0 <sup>a</sup>	4.3 <sup>b</sup>	2.9 <sup>c</sup>	**
- Mean of occasional clients in the last 30 days	5.3 <sup>a</sup>	5.1 <sup>a</sup>	2.3 <sup>b</sup>	***
- Mean of regular clients in the last 30 days	3.2 <sup>a</sup>	3.5 <sup>a</sup>	6.1 <sup>b</sup>	***
- Mean of the total of clients in the last 30 days	14.4 <sup>a</sup>	14.0 <sup>a</sup>	11.2 <sup>b</sup>	*
- Mean of stable partners in the last 30 days	0.7 <sup>a</sup>	1.1 <sup>b</sup>	1.3 <sup>b</sup>	***
- Mean of the total of sexual partners in the last 30 days (including clients and stable partners)	15.0 <sup>a</sup>	15.7 <sup>a</sup>	12.0 <sup>a</sup>	NS



INDICATORS	Feb 2008 N=85	Aug 2010 N=252	Apr 2013 N=299	Sig.
<i>Sexually Transmitted Infections (STIs)</i>	%	%	%	
- FSW that had or suspected having a sexually transmitted infection or its symptoms in the last 12 months (from the total of FSW)	34.4 <sup>a</sup>	28.9 <sup>a</sup>	24.0 <sup>a</sup>	NS
- ^ FSW that went to a health center, hospital or clinic during their last STI episode (from those that had an STI)	61.8 <sup>a</sup>	66.7 <sup>a</sup>	44.7 <sup>a</sup>	NS
<b>OPORTUNITY</b>				
<i>Availability</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	
- Clients bring their own condoms	nc	nc	2.31	nc
- Is not her who give condoms to the clients	2.90 <sup>a</sup>	2.60 <sup>b</sup>	2.93 <sup>a</sup>	
<i>Social Norms -Discrimination</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	
- FSW that do not perceive any discrimination against them <sup>11</sup> - Scale	1.94 <sup>a</sup>	2.09 <sup>b</sup>	2.23 <sup>c</sup>	***
<b>ABILITY</b>				
<i>Knowledge</i>	%	%	%	
^Identify correctly two ways of HIV prevention (condom use and mutual fidelity) and rejects the myth (a person cannot look healthy and have HIV).	33.7 <sup>a</sup>	81.3 <sup>b</sup>	70.1 <sup>c</sup>	**
<i>Social Support –Self-esteem</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	
- Positive self-esteem <sup>12</sup> – Scale	3.18 <sup>a</sup>	2.97 <sup>b</sup>	2.92 <sup>b</sup>	
- Negative self-esteem <sup>13</sup> – Scale(r)	2.16 <sup>a</sup>	2.30 <sup>b</sup>	2.49 <sup>c</sup>	
<b>MOTIVATION</b>				
¥ <i>Locus of Control</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	
- Clients are not the ones who decide to use or not a condom (r)	nc	2.27	2.88	***
<b>VIOLENCE</b>				
<i>Psychological violence</i>	%	%	%	
- ^Someone made you feel threatened, scared or in danger for being FSW, in the last 12 months (f10 y f11)	nc	nc	10.4	nc
<i>Verbal violence</i>	%	%	%	
- ^Someone insulted, humiliated or made you feel inadequate for being FSW, in the last 12 months (f20 y f21)	nc	nc	5.4	nc
<i>Physical violence</i>				
-^ Someone have hurt you or made any physical damage to you for being FSW, in the last 12 months (f30 y f31)	nc	nc	6.7	nc
<i>Sexual violence</i>				
- ^Someone have forced you to have sexual intercourse against your will for being FSW, in the last 12 months (f40 y f41)	nc	nc	2.0	nc
<i>Total Psychological, Verbal, Physical or Sexual violence</i>				
-^ Have suffered at least one type of violence for being FSW, in the last 12 months	nc	nc	13.2	nc
<i>Report of violence (any type) to institutions</i>				
-^ FSW that reported what happened to any institution, organization or support group (from the total that suffered any kind of violence in the last 12 months) (f13, f23, f33, f43)	nc	nc	5.8	nc
<i>Access to legal processes</i>				
-^ FSW that feel they can have Access to a legal process if their human rights as female sex worker were not respected (f1 y f2)	nc	nc	4.4	nc

INDICATORS	Feb 2008 N=85	Aug 2010 N=252	Apr 2013 N=299	Sig.
<b>EXPOSURE</b>				
<i>Use of coupons in the last 12 months</i>	%	%	%	
At least one interpersonal communication activity (IPC) in presence (K3. Yes vs no) from the total of FSW	nc	nc	1.6	nc
- Number of times (mean) (that received coupons)	<i>media</i> nc	<i>media</i> nc	<i>media</i> 0.5	nc
- In at least one IPC activity on the internet (K21. Yes vs. no) from the total of FSW	% nc	% nc	% 0.8	nc
- Number of times (mean) (that received coupons)	<i>mean</i> nc	<i>mean</i> nc	<i>mean</i> 0.71	nc
- In biomedical tests (H5, I5 yes vs. no) from the total of FSW	% nc	% nc	% 12.4	nc
<i>In reference services (family planning, gynecologist, counseling for alcohol and drugs, legal support, etc.)</i>				
- Received the coupons (L1. From the total of FSW) (yes vs. no)	nc	nc	2.5	nc
- Used the coupons ( L2 yes vs. no) From the total of FSW	nc	nc	1.01	nc
<i>Completed cycle of Combined prevention using coupons</i>				
- ^ FSW that used at least 3 coupons (in presence or electronic), 1 biomedical and received 1 coupon for references, (even if they did not used it)	nc	nc	0	nc
- FSW that used at least 3 coupons (in presence or electronic), 1 biomedical and received 1 coupon for references, (not only received but used it)	nc	nc	0	nc
<i>Exposure reported directly by participants in the last 12 months (independently if they use or not the coupons):</i>				
<i>IPC PASMO activities<sup>14</sup> (executed by PASMO or a partner organization)</i>	%	%	%	
- ^Participation in IPC activities in presence	23.5 <sup>a</sup> <i>mean</i>	27.5 <sup>a</sup> <i>mean</i>	6.0 <sup>b</sup> <i>mean</i>	***
- Number of times (that FSW participated)	nc %	nc %	1.03 %	nc
- ^Participation in IPC activities using the internet	nc <i>mean</i>	nc <i>mean</i>	2.3 <i>mean</i>	nc
- Number of times (that FSW participated)	nc	nc	0.14	nc
<i>Utilization of biomedical services in the last 12 months</i>	%	%	%	
- For STI symptoms or to get an HIV test (h4, i3) (yes vs. no)	75.7 <sup>a</sup>	74.2 <sup>a</sup>	69.1 <sup>a</sup>	NS
<i>Combined prevention cycle according to self report of participation (independently if they used the coupons or not)</i>	%	%	%	
- ^ FSW that participated in at least 3 IPC activities, biomedical tests, and received references (k10-k20; h4, i3; l1)	nc	nc	2.2	nc
- FSW that participated in at least 3 IPC activities, biomedical tests, and used the reference services (k10-k20; h4, i3; l1 l2)	nc	nc	0	nc
<i>Exposure to PASMO Mass media messages in the last 12 months</i>	%	%	%	
Have used web sources at least once (¿And what now?, Club en Conexión, Mi Zona H, Red Segura,) (yes vs no)	nc	nc	1.3	nc

INDICATORS	Feb 2008 N=85	Aug 2010 N=252	Apr 2013 N=299	Sig.
- Saw the campaign “not all men are the same” (j20, yes vs. no)	nc	nc	0.5	nc
- Saw the campaign “Tienes, Pídelo” (j30, yes vs. no)	nc	nc	1.4	nc
- Saw the campaign “Impresiónalás” (j40, yes vs. no)	nc	nc	1.4	nc
- Exposed to at least one PASMO mass media campaign	47.3 <sup>a</sup>	45.2 <sup>a</sup>	5.5 <sup>b</sup>	***

\*=p<0.05 \*\*=p<0.01 \*\*\*=p<0.001 ns= non-significant nc=non-comparable

^ Donor indicator, ¥ PASMO indicator

(r): These indicators were phrased the opposite way in the questionnaire, for analysis purposes they need to be interpreted the way they are described in this table.

Scales used to measure OAM determinants were from 1 to 4 (1=totally disagree, 2=disagree, 3=agree, 4=totally agree).

Percentages and means were obtained using univariate analysis controlled by the following socio-demographic variables: age, marital status, education level, monthly income, FSW category (fixed vs. Ambulatory) and city which was also the design variable of the study.

<sup>1</sup> Measured between FSW that had at least one new client in the last month (2007 N=85, 2009 N=109, 2012 N=212)

<sup>2</sup> Measured between FSW that had at least one occasional client in the last month (2007 N=85, 2009 N=101, 2012 N=177)

<sup>3</sup> Measured between FSW that had at least one regular client in the last month (2007 N=85, 2009 N=110, 2012 N=214)

<sup>4</sup> Measured between FSW that had at least one stable partner in the last month (2007 N=85, 2009 N=175, 2012 N=188)

<sup>5</sup> Measured between FSW that had at least one new client in the last month (2007 N=85, 2009 N=109, 2012 N=212)

<sup>6</sup> Measured between FSW that had at least one occasional client in the last month (2007 N=85, 2009 N=101, 2012 N=177)

<sup>7</sup> Measured between FSW that had at least one regular client in the last month (2007 N=85, 2009 N=110, 2012 N=214)

<sup>8</sup> Measured between FSW that had at least one stable partner in the last month (2007 N=85, 2009 N=175, 2012 N=188)

<sup>9</sup> In 2010 this indicator was improved including having used the condom from the beginning to the end of the sexual act. In this report this last component was eliminated according to donor requisitions.

<sup>10</sup> This indicator is not comparable between 2008-2010 and 2013 years

<sup>11</sup> No discrimination scale:

- Q11NR Society gives a worthy place to female sex workers P39B
- Q12NR People do not feel uncomfortable in front of a female sex worker P39C
- Q13NR People do not think that female sex workers are sex addicts P39D
- Q14NR People do not think female sex workers are unmoral P39E
- Q15NR People do not think that female sex workers are bad mothers P39F

<sup>12</sup> Positive self-esteem scale:

- Q31N You worth as much as any other person P41A
- Q32N You have a lot of qualifications P41B
- Q34N You are capable as much as any other person P41D
- Q36N You keep a positive attitude for yourself P41F
- Q37N You feel satisfied with yourself P41G

<sup>13</sup> Negative self-esteem (reverse) scale:

- Q33NR Does not feel that have failed in life P41C
- Q35NR Has a lot to feel proud of P41E
- Q38NR Feel that is good for something P41H
- Q39NR Does not feel guilty about her job P41I

<sup>14</sup> Different activities they could be exposed to are: “el reto (pataki)”, “decisions”, “1 2 3 (safe)”, “condoms & laders”, “large cards”, “matchmakers”, “sex busters”, “XY”.

**SEGMENTATION TABLE I:  
Determinants of Opportunity Ability and Motivation (OAM) in Belize city, Cayo,  
Orange Walk, Corozal and Stann Creek, Belize 2013.**

**Risk group:** Female sex workers (FSW) from 18 to 49 years

**Behavior:** Consistent condom use in the last 30 days with all type of clients

INDICATORS	Consistent User N=155 69.5%	Non consistent user N=68 30.5%	OR	Sig.
<b>OPPORTUNITY</b>				
<i>Social Norms -Discrimination</i> - FSW that do not perceive any discrimination against them <sup>1</sup> - Scale	Mean 2.30	Mean 2.13	2.32	*
<b>ABILITY</b>				
<i>Social Support –Self-esteem</i> - Higher self-esteem <sup>2</sup> – Scale(r)	Mean 2.49	Mean 2.33	2.13	*
<b>MOTIVATION</b>				
<i>Locus of control</i> - Clients are not the ones who decide to use or not a condom (r)	Mean 2.97	mean 2.73	1.86	*

\*=p<0.05      \*\*=p<0.01      \*\*\*=p<0.001

Scales used to measure OAM determinants were from 1 to 4 (1=totally disagree, 2=disagree, 3=agree, 4=totally agree).

Omnibus  $\chi^2$  (df=4): 27.746, p=0.000

R<sup>2</sup> (Cox Snell): 0.117

Hosmer-Lemeshow (df=8): 13.510, p=0.095

(r): These indicators where phrased the opposite way in the questionnaire, for analysis purposes they need to be interpreted the way they are described in this table.

<sup>1</sup> No discrimination scale:

- Q11NR Society gives a worthy place to female sex workers P39B
- Q12NR People do not feel uncomfortable in front of a female sex worker P39C
- Q13NR People do not think that female sex workers are sex addicts P39D
- Q14NR People do not think female sex workers are unmoral P39E
- Q15NR People do not think that female sex workers are bad mothers P39F

<sup>2</sup> Negative self-esteem (reverse) scale:

- Q33NR Does not feel that have failed in life P41C
- Q35NR Has a lot to feel proud of P41E
- Q38NR Feel that is good for something P41H
- Q39NR Does not feel guilty about her job P41I

**SEGMENTATION TABLE II:  
Determinants of Opportunity Ability and Motivation (OAM) in Belize city, Cayo,  
Orange Walk, Corozal and Stann Creek, Belize 2013.**

**Risk group:** Female sex workers (FSW) from 18 to 49 years

**Behavior:** Consistent condom use in the last 30 days with stable partner

INDICATORS	Consistent User N=73 65.8%	Non consistent user N=38 34.2%	OR	Sig.
<b>BEHAVIOR</b>				
<i>HIV diagnosis</i> - Have used biomedical services in the last 12 months for an STI or HIV test	% 84.8	% 60.0	3.82	*
<b>OPPORTUNITY</b>				
<i>Availability</i> - Clients bring their own condoms - Is not you who give condoms to the clients	<i>Mean</i> 2.25 2.78	<i>Mean</i> 2.65 3.01	0.13 0.38	*** *
<b>ABILITY</b>				
<i>Knowledge</i> - Identify correctly two ways of HIV prevention (condom use and mutual fidelity) and rejects the myth (a person cannot look healthy and have HIV). (UNGASS indicator 14)	% 91.4	% 74.3	5.25	*
<i>Social Support –Self-esteem</i> - Positive self-esteem <sup>3</sup> – Scale	<i>Mean</i> 3.08	<i>Mean</i> 2.86	10.74	*

\*=p<0.05      \*\*=p<0.01      \*\*\*=p<0.001

Scales used to measure OAM determinants were from 1 to 4 (1=totally disagree, 2=disagree, 3=agree, 4=totally agree).

Omnibus  $\chi^2$  (df=6): 35.422, p=0.000

R<sup>2</sup> (Cox Snell): 0.273

Hosmer-Lemeshow (df=8): 12.116, p=0.146

(r): These indicators were phrased the opposite way in the questionnaire, for analysis purposes they need to be interpreted the way they are described in this table.

<sup>3</sup> Positive self-esteem scale:

- Q31N You worth as much as any other person P41A
- Q32N You have a lot of qualifications P41B
- Q34N You are capable as much as any other person P41D
- Q36N You keep a positive attitude for yourself P41F
- Q37N You feel satisfied with yourself P41G

## EVALUATION TABLE

Factors associated with behavior outcomes in Belize, 2012.

**Risk Group** Female Sex Workers (FSW) between 18-49 year.

<b>Matched Sample (N=282)</b>						
Behavior	Type of Exposition	<b>Model 1</b> (Exposed to any PASMO activity)			<b>Model 2</b> (comparative of exposition to each component )	
		O.R Adjusted	Interval		O.R Adjusted	interval
<b>Use a condom with all type of clients the last thirty days.</b>	Any PASMO Activity	.497611	.2046908	1.209712	.2769233	.0998498 .7680183
	<b>IPC</b>	1.500173	.3617849	6.2206	<b>18.83696</b>	<b>1.408943 251.842</b>
	Biomedical	.4452613	.1780891	1.11325	.213063	.0808165 .5617152
	Complimentary	1.053992	.2355607	4.715974	.5529542	.0575531 5.312634
	Received free condoms in the last twelve	4.567906	1.963136	10.62879	3.312241	1.081365 10.14546
	Has been approached by a HIV educator	1.2154	.7250991	2.037235	1.473498	.754718 2.87683
Use a condom with occasional client the last thirty days.	Any PASMO Activity	.3984546	.0925819	1.714872	.173625	.0320834 .939604
	<b>IPC</b>	2.89376	.280914	29.809	---	----
	Biomedical	.3479128	.0776999	1.55783	.0427684	.0035631 .513352
	Complimentary	2.89376	.280914	29.8093	---	----
	Received free condoms in the last twelve	2.249758	.8258795	6.128508	1.855765	.6785021 5.075687
	Has been approached by a HIV educator	1.610859	.510422	5.083768	12.52063	.092537 1694.091
Use a condom with new client the last thirty days.	Any PASMO Activity	1.245281	.3594611	4.314024	1.798172	.2695236 11.9968
	<b>IPC</b>	1.18302	.2027076	6.9042	14.646	.638509 335.9841
	Biomedical	.966075	.2683258	3.478238	1.210726	.1550743 9.452612
	Complimentary	1.18302	.2027076	6.904212	.1274667	.0070749 2.296526
	Received free condoms in the last twelve	3.399565	.8784301	13.15647	2.360867	.4133662 13.48366.3400101
	Has been approached by a HIV educator	1.050228	.4570787	2.413107	.3400101	.0785025 1.472653

		<b>Model 1</b> (Exposed to any PASMO activity)			<b>Model 2</b> (comparative of exposition to each component )		
Behavior	Type of Exposition	O.R Adjusted	Interval		O.R Adjusted	interval	
Use a condom with regular clients the last thirty days.	Any PASMO Activity	.4501266	.195545	1.03615	.4527571	.1468319	1.39608
	IPC	.512649	.0812718	3.23371	-----	-----	
	Biomedical	.4380938	.1822273	1.05322	.3416475	.0979198	1.192027
	Complimentary	1.41198	.1502431	13.26975	-----	-----	
	Received free condoms in the last twelve	2.763027	1.15157	6.629487	1.819391	.6305016	5.250081
	Has been approached by a HIV educator	1.09095	.6330808	1.87996	1.646306	.5262449	5.15030
<b>Use a condom during the last sex intercourse</b>	Any PASMO Activity	.5222235	.24919	1.094415	.6621377	.2750733	1.593853
	<b>IPC</b>	<b>5.514175</b>	<b>1.187157</b>	<b>25.61255</b>	-----	-----	
	Biomedical	.4573372	.2160878	.9679275	5458712	.2210014	1.348296
	<b>Complimentary</b>	<b>5.054991</b>	<b>.079686</b>	<b>23.667</b>	2.047726	.3830733	10.94616
	Received free condoms in the last twelve	2.663907	1.311949	5.409055	1.169089	.4838984	2.824495
	Has been approached by a HIV educator	2.852971	1.274891	6.384425	3.627076	.8137977	16.16578
<b>Use a condom with affective partners.</b>	Any PASMO Activity	2.403339	.8840334	6.53373	1.145662	.3161342	4.151852
	<b>IPC</b>	<b>3.804327</b>	<b>1.002547</b>	<b>14.43613</b>	6.288218	.2397982	164.8957
	Biomedical	2.70322	.9682212	7.547241	1.385225	.3213476	5.97125
	Complimentary	4.279451	.9724968	18.83163	.151789	.015572	1.479581
	Received free condoms in the last twelve	2.311915	1.013725	2.272611	1.820573	.6731537	4.92381
	Has been approached by a HIV educator	1.448714	.563847	3.722238	1.150737	.5487092	2.41329
Refuses main myth about HIV transmission.	Any PASMO Activity	1.275896	.5876706	2.770107	1.976524	.8192051	4.768826
	IPC	1.3054	.3863988	4.410262	1.805913	.2397572	13.6026
	Biomedical	1.181889	.5383284	2.594814	1.995977	.7838166	5.08272
	Complimentary	.835288	.2593335	2.690381	1.227484	.3091603	4.873577
	Received free condoms in the last twelve	2.551712	1.321406	4.927507	2.506002	1.096713	5.726247
	Has been approached by a HIV educator	.9474367	.5954473	1.507499	.657860	.3850161	1.12405

		<b>Model 1</b> (Exposed to any PASMO activity)			<b>Model 2</b> (comparative of exposition to each component )		
Behavior	Type of Exposition	O.R Adjusted	Interval		O.R Adjusted	interval	
<b>Took a HIV test and received results in the past 12 months.</b>	<b>Any PASMO Activity</b>	2.874179	.9228692	8.95133	<b>5.523398</b>	<b>1.234449</b>	<b>24.7138</b>
	IPC	1.704061	.5081637	5.714347	.1363507	.0100561	1.848777
	<b>Biomedical</b>	<b>9.381072</b>	<b>1.822076</b>	<b>48.29903</b>	<b>33.99392</b>	<b>3.468</b>	<b>333.214</b>
	Complimentary	2.294324	.6028279	8.73204	.183149	.0157915	2.12415
	Received free condoms in the last twelve	1.517123	.9080386	2.534764	1.669972	.7427173	3.75486
	Has been approached by a HIV educator	1.244851	.6699156	2.3132	.2878332	.1398783	.5922861
Had symptoms STI	Any PASMO Activity	.9648926	.4639717	2.006626	1.03041	.4577401	2.319562
	IPC	.8198603	.2418463	2.779331	.7721566	.116893	5.100612
	Biomedical	1.197665	.5707153	2.5133	1.235559	.5324356	2.867213
	Complimentary	.607490	.1581082	2.334126	.4147446	.0420517	4.090514
	Received free condoms in the last twelve	.5797119	.338814	.9918891	.5480221	.2702908	1.11113
	Has been approached by a HIV educator	1.047045	.6541906	1.675815	1.132618	.6865	1.868642

Matched through Exact Matching (N=282 L1=0.09221289) by:

Income level, if has high school level vs. Other educational levels, sex worker with a boss vs. no boss,

Exposure categories:

- IPC: Exposed to any informative activity, educational or directed communication by PASMO or its partners.
- Biomedical: took a HIV test or any other STI test under reference of PASMO or its partners.
- Complimentary: received any type of complimentary information for services



## POPULATION CHARACTERISTICS

**Risk group:** Female sex workers (FSW) from 18 to 49 years in Belize city, Cayo, Orange Walk, Corozal and Stann Creek, 2008, 2010 & 2013.

POPULATION CHARACTERISTICS	Feb 2008 N=85	Aug 2010 N=252	Apr 2013 N=299
<i>City (design variable)</i>	%	%	%
- Belize	58.8	39.3	13.7
- Cayo	1.2	15.5	41.8
- Orange Walk	29.4	21.4	38.8
- Corozal	8.2	9.5	1.3
- Stann Creek	2.4	14.3	4.3
<i>Category</i>	%	%	%
- Fixed	52.9	88.1	29.4
- Ambulatory	47.1	11.9	70.6
<i>Age groups</i>	%	%	%
- 18 a 24 years	41.2	50.0	57.5
- 25 a 34 years	48.2	39.7	32.4
- 35 years or more.	10.6	10.3	10.0
- Age mean	<i>mean</i> 25.9	<i>mean</i> 25.7	<i>mean</i> 24.5
<i>Education level</i>	%	%	%
- No education	7.1	4.4	6.4
- incomplete elementary	18.8	28.6	25.4
- Incomplete high school	57.6	47.2	64.9
- completed high school	11.8	11.9	2.7
- university studies	4.7	7.9	0.7
<i>Marital status</i>	%	%	%
- Single	61.2	72.2	72.9
- Married	20.0	17.5	6.0
- Separated	10.6	7.5	16.4
- Divorced	7.1	1.2	3.0
- Widow	1.2	1.6	1.7
<i>Residence document</i>	%	%	%
- No	n/a	n/a	50.2
- Yes	n/a	n/a	49.8
<i>Monthly personal income (in US dollars)</i>	%	%	%
- Less than \$376	15.3	9.9	11.2
- From \$377 to \$939	37.6	57.1	40.5
- From \$940 to \$1502	40.0	25.4	24.1
- \$1503 or more	7.1	7.5	24.1
<i>Children</i>	%	%	%
- No children	18.8	22.6	48.2
- Have 1 to 3 children	67.1	65.9	41.1
- Have more than 3 children	14.1	11.5	10.7
<i>Number of persons that depend of your monthly income</i>	%	%	%
No dependents	12.9	9.1	16.4
Have 1 to 3 dependents	54.1	57.1	70.2
Have more than 3 dependents	32.9	33.7	13.4

## RELIABILITY ANALYSIS

**Risk group:** Female sex workers (FSW) from 18 to 49 years in Belize city, Cayo, Orange Walk, Corozal and Stann Creek, 2008, 2010 & 2013.

Composed variables	April 2013 (N=299) Alfa de Cronbach
<b>OPORTUNITY</b>	
<i>Proximity: Scale of FSW whom have easy access to condoms (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. P26 You buy condoms near the place you work at	
2. P27 You would eel comfortable buying condoms in a store near your place of work	
3. P30 It is easy to find a grocery store that sells condoms	0.808
4. P31 It is easy to find a place to buy sexual lubricants	
5. P32 You give the condoms to your clients	
6. P41 It is easy to get condoms in your place of work or near by (P36A)	
7. P42 It is possible to find condoms in less tan 10 minutes from the place you work at. (P36B)	
8. P43 apart from pharmacies, it is easy to find places that sell condoms (P36C)	
<i>Social Norms: Scale of FSW whom have a positive opinion on social norms related to HIV and condoms subjects (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. Q2 All the persons have to get an HIV test at least once a year	0.774
2. Q3 Every person should have a condom with them all the time	
3. Q4 All the persons that we don't like also deserve respect	
4. Q5 The condoms always need to be used to have sex	
<i>No Discrimination: Scale of FSW whom affirm not suffering discrimination (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. Q11NR Society gives a worthy place to female sex workers P39B	
2. Q12NR People do not feel uncomfortable in front of a female sex worker P39C	0.832
3. Q13NR People do not think that female sex workers are sex addicts P39D	
4. Q14NR People do not think female sex workers are unmoral P39E	
5. Q15NR People do not think that female sex workers are bad mothers P39F	
6. Q16NR People do not reject sex workers P39G	
<b>ABILITY</b>	
<i>Social Support – emotional support: Scale of FSW whom affirm having emotional support (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. Q21 Many persons make you feel loved P40A	0.783
2. Q22 You care for most of the people P40B	
3. Q23 Usually you do not feel alone P40C	
<i>Social support – Positive self-esteem Scale of FSW whom affirm having positive self-esteem (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. Q31N You worth as much as any other person P41A	
2. Q32N You have a lot of qualifications P41B	0.754
3. Q34N You are capable as much as any other person P41D	
4. Q36N You keep a positive attitude for yourself P41F	
5. Q37N You feel satisfied with yourself P41G	
<i>Social Support - Negative Self- esteem (r) reversed. Scale of FSW whom affirm NOT having negative self-esteem (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. Q33NR Does not feel that have failed in life P41C	0.728
2. Q35NR Has a lot to feel proud of P41E	
3. Q38NR Feel that is good for something P41H	
4. Q39NR Does not feel guilty about her job P41I	

Composed variables	April 2013 (N=299) Alfa de Cronbach
<i>Social Support - Scale of FSW whom having support from their colleagues (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. Q41 Your colleagues encourage you to use condoms P42A	0.782
2. Q42 Your colleagues ask you if you are carrying condoms when you are about to go with the client P42B	
3. Q43 If you do not have condoms your colleagues give you one P42C	
4. Q44 You encourage your colleagues to use condoms	
<b>MOTIVATION</b>	
<i>Outcome expectation – Condom features. Scale of FSW who have positive opinions regarding condoms (1=totally disagree, 2=disagree, 3=agree, 4=totally agree)</i>	
1. S4 Condoms are attractive	0.965
2. S5 Condoms are fun	
3. S6 Condoms are exciting	
4. S7 Condoms are sexy	

(r): These indicators were phrased the opposite way in the questionnaire, for analysis purposes they need to be interpreted the way they are described in this table.