



**INTEGRATED HIV AND SEXUALLY TRANSMITTED INFECTIONS
(STIs) BIOLOGICAL AND BEHAVIOURAL SURVEILLANCE SURVEY
AMONG KEY POPULATIONS IN SOMALIA**

Final Report

AUGUST 2017



International Organization for Migration
The UN Migration Agency

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Publisher: International Organization for Migration
17 route des Morillons
P.O. Box 17
1211 Geneva 19
Switzerland
Tel: +41 22 717 9111
Fax: +41 22 798 6150
E-mail: hq@iom.int
Website: www.iom.int

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This report was written by Calistus Masika (Lead Research Consultant) with technical support from Kelsi Kriitmaa (Senior Health Technical Advisor, International Organization for Migration (IOM)), respondent-driven sampling statisticians (Paul Macharia, Zoran Dominkovic and Sandra Sevic), Somalia national consultants (Ahmed Adam and Deq Sudi Tarabi), and Technical Working Groups (TWGs) in Mogadishu and Garowe. The TWG in Mogadishu was comprised of the South Central AIDS Commission, Ministry of Health, IOM health coordinator in Mogadishu, UNICEF, People Living with HIV Network and Swis Kalmo. The TWG in Garowe was comprised of the Puntland AIDS Commission, Ministry of Health, UNICEF, World Health Organization, IOM health coordinator in Puntland, United Nations Development Programme, local non-governmental organizations Badbado, Somali Red Crescent Society, Health Opportunities for People Everywhere, World Vision International, Puntland Center for Human Rights and Democracy.

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Contents

Acknowledgements	iii
List of tables	v
List of figures	viii
Abbreviations and acronyms	ix
Executive summary	x
Background	x
Methodology	x
Findings.....	x
Conclusion and recommendations	xii
1. Introduction.....	1
1.1. Background	1
1.2. Previous IBBS studies in Somaliland.....	1
1.3. IBBS justification	2
1.4. Study objectives.....	2
2. Methodology	3
2.1. Formative research stage.....	3
2.2. Study sites and target population	3
2.3. Study design and sampling techniques.....	3
2.4. Sample size	5
2.5. Operational definition of key terms and target populations.....	5
2.6. Eligibility.....	6
2.7. Screening for eligibility.....	6
2.8. Study variables.....	6
2.9. Population size estimation	7
2.10. Data collection	8
2.11. Compensation for respondents' travel and time	10
2.12. HIV and syphilis testing	12
2.13. Testing quality assurance	13
2.14. Training of research field team	13
2.15. Data analysis	14
2.16. Ethical considerations	14
3. Findings	15
3.1. Mogadishu female sex workers.....	15
3.2. Mogadishu uniformed personnel.....	33
3.3. Mogadishu port workers.....	41
3.4. Mogadishu truckers	49
3.5. Bossaso female sex workers.....	57
3.6. Bossaso uniformed personnel.....	73
3.7. Bossaso port workers.....	81
3.8. Bossaso truckers	89

4. Discussion	98
4.1. Sociodemographic characteristics and HIV/syphilis prevalence.....	98
4.2. Comparison of key indicators across Mogadishu and Bossaso study groups.....	98
5. Conclusion	103
6. Limitations of the study.....	104
7. Recommendations.....	105
References.....	107
Appendix	108

List of tables

Table 1:	Indicators used to determine sample size from IBBS survey with FSW in 2014	5
Table 2:	GARPR indicators among key populations included in the Somalia IBBS	9
Table 3:	Response rate and eligibility of Mogadishu FSWs	15
Table 4:	Sociodemographic characteristics of Mogadishu FSWs.....	18
Table 5:	HIV and syphilis prevalence among Mogadishu FSWs.....	19
Table 6:	Patterns of STI care and treatment seeking behaviour among Mogadishu FSWs	20
Table 7:	Knowledge on transmission of HIV and STI among Mogadishu FSWs.....	21
Table 8:	General sexual history of Mogadishu FSWs.....	21
Table 9:	Sexual history of Mogadishu FSWs with paying clients	23
Table 10:	Sexual history of Mogadishu FSWs with non-paying partners	24
Table 11:	Availability and use of male condom among Mogadishu FSWs	25
Table 12:	Availability and use of female condom among Mogadishu FSWs	26
Table 13:	HIV testing history and avoidance of HIV services among Mogadishu FSWs	26
Table 14:	Stigma and discrimination related to HIV and AIDS among Mogadishu FSWs	27
Table 15:	Physical and sexual violence among Mogadishu FSWs.....	28
Table 16:	Programme coverage among Mogadishu FSWs	29
Table 17:	Alcohol and drug use among Mogadishu FSWs in the past three months	30
Table 18:	Factors associated with condom use at last sex with a client (transactional sex) among Mogadishu FSWs	31
Table 19:	Factors associated with having an HIV test in the past 12 months and knowing the result among Mogadishu FSWs	32
Table 20:	Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission among Mogadishu FSWs	32
Table 21:	Sociodemographic characteristics of Mogadishu uniformed personnel	33
Table 22:	HIV and syphilis prevalence among Mogadishu uniformed personnel	34
Table 23:	Patterns of STI care and treatment seeking behaviour among Mogadishu uniformed personnel.....	34
Table 24:	Knowledge of transmission of HIV and STI among Mogadishu uniformed personnel.....	35
Table 25:	General sexual history of Mogadishu uniformed personnel	36
Table 26:	Sexual history of Mogadishu uniformed personnel with paying clients.....	37
Table 27:	Sexual history of Mogadishu uniformed personnel with non-paying partners	37
Table 28:	Availability and use of male condom among Mogadishu uniformed personnel	38
Table 29:	Availability and use of female condom among Mogadishu uniformed personnel.....	38
Table 30:	HIV testing history and avoidance of HIV services among Mogadishu uniformed personnel.....	39



Table 31:	Physical and sexual violence among Mogadishu uniformed personnel	39
Table 32:	Programme coverage among Mogadishu uniformed personnel.....	40
Table 33:	Alcohol and drug use among Mogadishu uniformed personnel in the past three months.....	40
Table 34:	Sociodemographic characteristics among Mogadishu port workers.....	41
Table 35:	HIV and syphilis prevalence among Mogadishu port workers.....	42
Table 36:	Patterns of STI care and treatment seeking behaviour among Mogadishu port workers	43
Table 37:	Knowledge on transmission of HIV and STI among Mogadishu port workers.....	43
Table 38:	General sexual history of Mogadishu port workers.....	44
Table 39:	Sexual history of Mogadishu port workers with paying clients	45
Table 40:	Sexual history of Mogadishu port workers with non-paying partners	45
Table 41:	Availability and use of male condom among Mogadishu port workers	46
Table 42:	Availability and use of female condom among Mogadishu port workers	46
Table 43:	HIV testing history and avoidance of HIV services among Mogadishu port workers	47
Table 44:	Physical and sexual violence among Mogadishu port workers	47
Table 45:	Programme coverage among Mogadishu port workers	48
Table 46:	Alcohol and drug use among Mogadishu port workers in the past three months.....	48
Table 47:	Sociodemographic characteristics of Mogadishu truckers	49
Table 48:	HIV and syphilis prevalence among Mogadishu truckers	50
Table 49:	Patterns of STI care and treatment seeking behaviour among Mogadishu truckers.....	51
Table 50:	Knowledge on transmission of HIV and STI among Mogadishu truckers	51
Table 51:	General sexual history of Mogadishu truckers	52
Table 52:	Sexual history of Mogadishu truckers with paying clients.....	53
Table 53:	Sexual history of Mogadishu truckers with non-paying partners	53
Table 54:	Availability and use of male condom among Mogadishu truckers.....	54
Table 55:	Availability and use of female condom among Mogadishu truckers.....	54
Table 56:	HIV testing history and avoidance of HIV services among Mogadishu truckers.....	55
Table 57:	Physical and sexual violence among Mogadishu truckers	55
Table 58:	Programme coverage among Mogadishu truckers.....	56
Table 59:	Alcohol and drug use among Mogadishu truckers in the past three months.....	56
Table 60:	Response rate and eligibility of Bossaso FSWs	57
Table 61:	Sociodemographic characteristics of Bossaso FSWs.....	60
Table 62:	HIV and syphilis prevalence among Bossaso FSWs.....	61
Table 63:	Patterns of STI care and treatment seeking behaviour among Bossaso FSWs	61
Table 64:	Knowledge on transmission of HIV and STI among Bossaso FSWs	63
Table 65:	General sexual history of Bossaso FSWs.....	63
Table 66:	Sexual history of Bossaso FSWs with paying clients	65
Table 67:	Sexual history of Bossaso FSWs with non-paying partners	66
Table 68:	Availability and use of male condom among Bossaso FSWs	67
Table 69:	Availability and use of female condom among Bossaso FSWs	68
Table 70:	HIV testing history and avoidance of HIV services among Bossaso FSWs	69
Table 71:	Stigma and discrimination related to HIV and AIDS among Bossaso FSWs	70
Table 72:	Physical and sexual violence among Bossaso FSWs.....	70
Table 73:	Programme coverage among Bossaso FSWs	71
Table 74:	Alcohol and drug use among Bossaso FSWs in the past three months	72
Table 75:	Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission among Bossaso FSWs	73
Table 76:	Sociodemographic characteristics of Bossaso uniformed personnel	74
Table 77:	HIV and syphilis prevalence among Bossaso uniformed personnel	75
Table 78:	Patterns of STI care and treatment seeking behaviour	75
Table 79:	Knowledge on transmission of HIV and STI among Bossaso uniformed personnel.....	75
Table 80:	General sexual history of Bossaso uniformed personnel	76
Table 81:	Sexual history of Bossaso uniformed personnel with paying clients.....	77
Table 82:	Sexual history of Bossaso uniformed personnel with non-paying partners	77

Table 83:	Availability and use of male condom	78
Table 84:	Availability and use of female condom	78
Table 85:	HIV testing history and avoidance of HIV services among Bossaso uniformed personnel.....	79
Table 86:	Physical and sexual violence among Bossaso uniformed personnel	79
Table 87:	Programme coverage among Bossaso uniformed personnel.....	80
Table 88:	Alcohol and drug use in the past three months	81
Table 89:	Sociodemographic characteristics of Bossaso port workers.....	82
Table 90:	HIV and syphilis prevalence among Bossaso port workers.....	83
Table 91:	Patterns of STI care and treatment seeking behaviour among Bossaso port workers ...	83
Table 92:	Knowledge on transmission of HIV and STI among Bossaso port workers.....	84
Table 93:	General sexual history of Bossaso port workers.....	84
Table 94:	Sexual history of Bossaso port workers with paying clients	85
Table 95:	Sexual history of Bossaso port workers with non-paying partners	86
Table 96:	Availability and use of male condom among Bossaso port workers	86
Table 97:	Availability and use of female condom among Bossaso port workers	87
Table 98:	HIV testing history and avoidance of HIV services among Bossaso port workers	87
Table 99:	Physical and sexual violence among Bossaso port workers	88
Table 100:	Programme coverage among Bossaso port workers	88
Table 101:	Alcohol and drug use among Bossaso port workers in the past three months.....	89
Table 102:	Sociodemographic characteristics of Bossaso truckers	90
Table 103:	HIV and syphilis prevalence among Bossaso truckers	90
Table 104:	Patterns of STI care and treatment seeking behaviour among Bossaso truckers.....	91
Table 105:	Knowledge on transmission of HIV and STI among Bossaso truckers	91
Table 106:	General sexual history of Bossaso truckers	92
Table 107:	Sexual history of Bossaso truckers with paying clients.....	93
Table 108:	Sexual history of Bossaso truckers with non-paying partners.....	93
Table 109:	Availability and use of male condom among Bossaso truckers	94
Table 110:	Availability and use of female condom among Bossaso truckers.....	94
Table 111:	HIV testing history and avoidance of HIV services among Bossaso truckers.....	95
Table 112:	Physical and sexual violence among Bossaso truckers	95
Table 113:	Programme coverage among Bossaso truckers.....	96
Table 114:	Alcohol and drug use among Bossaso truckers in the past three months.....	97

List of figures

Figure 1:	Data collection flow procedure/chart among FSW team	9
Figure 2:	Data collection flow procedure among truckers, uniformed personnel and port workers	10
Figure 3:	Front side of the Somalia IBBS coupon	11
Figure 4:	Back side of the Somalia IBBS coupon	11
Figure 5:	Serial HIV rapid testing strategy	12
Figure 6:	Syphilis testing strategy	13
Figure 7:	Mogadishu FSW recruitment tree	16
Figure 8:	Mogadishu FSW recruits per seed	16
Figure 9:	Mogadishu FSW recruits per wave	17
Figure 10:	Mogadishu convergence plots on key indicators.....	17
Figure 11:	Bossaso FSW recruitment tree	58
Figure 12:	Bossaso FSW recruits per wave	58
Figure 13:	Bossaso FSW recruits per seed.....	59
Figure 14:	Bossaso convergence plots on key indicators.....	59
Figure 15:	Comparison of GARPR indicators among FSWs.....	99
Figure 16:	Comparison of selected indicators among FSWs.....	99
Figure 17:	Comparison of GARPR indicators among uniformed personnel.....	100
Figure 18:	Comparison of selected indicators among uniformed personnel	100
Figure 19:	Comparison of GARPR indicators among port workers.....	101
Figure 20:	Comparison of selected indicators among port workers.....	101
Figure 21:	Comparison of GARPR indicators among truckers	101
Figure 22:	Comparison of selected indicators among truckers	102

Abbreviations and acronyms

FSW	Female sex worker
GARPR	Global AIDS Response Progress Reporting
HIV	Human immunodeficiency virus
IBBS	Integrated Biological and Behavioural Surveillance
IDU	Injectable drug use
IOM	International Organization for Migration
MoH	Ministry of Health
RDS	Respondent-driven sampling
SD	Standard Diagnostics
SS-PSE	Successive sampling-population size estimation
STI	Sexually transmitted infection
TLS	Time location sampling
TWG	Technical Working Group
UNAIDS	United Nations Programme on HIV/AIDS
USD	United States dollars
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

Executive summary

Background

At the time of implementing the 2017 Integrated Biological and Behavioural Surveillance (IBBS) survey, two previous rounds of IBBS studies involving female sex workers had been conducted in Somaliland, in 2008 and 2014. In 2008, an IBBS study was implemented in Hargeisa, involving 237 female sex workers (FSW) using respondent driven sampling (RDS). A human immunodeficiency virus (HIV) prevalence of 5.1 per cent (2008) and 4.8 per cent (2014) was established. Both studies were conducted in Hargeisa, Somaliland involving FSWs. Other key population groups at higher risk of HIV transmission or infection, such as uniformed personnel, port workers and truckers, were not included in the surveys. However, understanding the disease burden among these populations is key to the success of the Somalia HIV response. This integrated HIV and sexually transmitted infections (STIs) biological and behavioural surveillance (IBBS) survey among key populations in Somalia, included FSWs, uniformed personnel, port workers and truckers, establishing a baseline for the four survey groups.

Methodology

The 2017 IBBS survey involved four study groups: FSW, uniformed personnel, port workers and truckers. A total sample size of 2,288 respondents (n=286 per group) were recruited in Mogadishu and Bossaso. Data was collected between April 2017 and May 2017. RDS was used to recruit FSW (RDS), and time location sampling (TLS) was used for uniformed personnel, port workers and truckers. Consenting participants aged 18 years and above meeting other eligibility criteria (established by a screener) were recruited, interviewed, and their HIV and syphilis tests undertaken. Somalia HIV and syphilis testing algorithms were adopted. Serial HIV testing involved use of three tests (SD Bioline for HIV, Abon and Stat-Pack) while testing for syphilis involved use of SD Bioline for syphilis and rapid plasma reagin (RPR) tests. Respondents testing positive for HIV and/or syphilis were counselled and linked to care and treatment at Banadir Hospital and Bossaso General Hospital. Biological data was captured on paper-based data collection tools, whereas behavioural data was captured using a mobile phone data collection application, mFieldwork. Behavioural data was cleaned and merged with biological data. Analysis of RDS was conducted in RDS-Analyst (RDS-A) for univariate and bivariate analysis using Gile's sequential sampler estimator. This estimator takes into account network characteristics and generates adjusted proportions called "estimated population proportions" with corresponding 95 per cent confidence intervals. Both univariate and bivariate analysis of TLS data were conducted using Stata version 12.

X

Findings

Most participants were aged between 25 and 34 years. A high proportion had either no education or primary education. Although the majority of participants participants (truckers, port workers and uniformed services) were married, most FSWs were either separated or divorced. The majority of participants had stayed in Mogadishu or Bossaso for than two years at the time of this data collection. Truckers significantly travel to neighbouring countries with varied duration of stay outside the country before visiting their families.

Mogadishu

Female sex workers

The mean age of FSWs in Mogadishu is 29.8 years with the majority aged between 25 and 34 years, with no education (86.8%). The prevalence of HIV is 2.9 per cent, whereas syphilis prevalence is 6.3 per cent (ever infected) and 1.8 per cent (active infection). HIV composite knowledge is 8.2 per cent. In addition, 23.1 per cent report condom use during last transactional sex, and only 11.6 per cent know their HIV status. Lastly, coverage of HIV prevention programmes is low (6.7%).

Uniformed personnel

The mean age of uniformed personnel respondents is 32.3 per cent with a larger proportion being aged 25–34 years having secondary education (39.2%). HIV prevalence is 0.2 per cent among uniformed personnel, while syphilis prevalence is 1.6 per cent (non-active) and zero (active). HIV composite knowledge level is 35.8 per cent. Of the uniformed personnel, 27.7 per cent reported condom use during last transactional sex. Coverage of HIV prevention programmes is 0.4 per cent, and only 9.2 per cent know their HIV status.

Port workers

The mean age of port workers who participated in this survey in Mogadishu is 33.1 years, mostly aged between 25 and 34 years and having no education (79.5%). Prevalence of HIV is 0.2 per cent, while syphilis prevalence is 1.5 per cent (non-active) and 0.9 per cent (active). Low HIV composite knowledge score (2.2%) recorded in addition to few port workers (3.5%) who know their HIV status; 24.4 per cent reported condom use during last transactional sex. In addition, only 0.45 per cent had accessed HIV prevention programmes.

Truckers

The mean age of truckers in Mogadishu is 31 years, while nearly two thirds (65%) have no education. The proportion of those who frequently visit neighbouring countries is 91.3 per cent, more than half (55.2%) travelling on a monthly basis. HIV prevalence among truckers is 0.5 per cent, while syphilis prevalence is 1.2 per cent (non-active) and zero active. Like other study groups, both HIV composite knowledge (21.3%) and condom use during last transactional sex (24.4%) is low. Only 14.2 per cent of truckers in Mogadishu know their HIV status. Lastly, coverage of HIV prevention programme among truckers is 5.1 per cent.

Bossaso

Female sex workers

The mean age of FSWs in Bossaso is 28.4 years, while slightly more than half of them aged between 25 and 34 years; 67.3 per cent have no education. Furthermore, most of them are either divorced (82.4%) or widowed (9.4%). The HIV prevalence is highest (4.5%) among this study population compared with other study groups. However, syphilis prevalence is lower at 1.1 per cent (both ever infected and active infection). The HIV composite knowledge score is 22.5 per cent. A significantly higher proportion of respondents (64.2%) compared to other study groups used condom during last transactional sex. However, coverage of HIV prevention programmes for FSW is at 0.2 per cent, probably linked to the finding showing that 69.8 per cent of FSW in Bossaso avoid HIV services because of stigma and discrimination.

Uniformed personnel

Uniformed personnel have a mean age of 32.8 years. While 61.8 per cent are married, half of them have no education. HIV prevalence is 1.1 per cent, whereas syphilis prevalence is 0.7 per cent (both active and previous infection). The uniformed team is characterized by low HIV composite knowledge (24.4%), high condom usage at last transactional sex (75.8%), and fewer respondents who know their HIV status (38.2%). In addition, 45 per cent reported avoidance of HIV programmes because of stigma and discrimination with resulting low coverage of HIV prevention programme (5.9%).

Port workers

The mean age of port workers in Bossaso is 31.5 years. Like other study groups, many of them (77.6%) have no education. This group also has a low HIV prevalence (1.2%) and syphilis prevalence (1.8%). Aside from low HIV composite knowledge (7.7%), only 20.8 per cent used condom during their last transactional sex. Only 8.9 per cent know their HIV status. This is consistent with the finding from this same study showing high proportion (73.8%) of truckers citing avoidance of HIV programmes due to stigma and discrimination.

Truckers

The mean age of truckers in this survey is 32.5 years. Half (50.8%) are aged between 25 and 34 years and have primary education (46.7%). HIV prevalence among truckers in Bossaso is 0.4 per cent, whereas syphilis prevalence is 0.2 per cent (both active and previous infection). Truckers also have low HIV composite knowledge level (8.6%). In addition, condom usage during last transactional sex is 38.8 per cent. Only 10.9 per cent know their HIV status, while 75.3 per cent avoid HIV prevention programmes due to stigma and discrimination.

Conclusion and recommendations

There is variation in HIV and syphilis prevalence across the four study groups in each of the two sites. Generally, HIV prevalence is below 5 per cent but highest among FSWs in Bossaso (4.5%) and Mogadishu (2.9%). Port workers in Bossaso comprise a client's group with highest HIV prevalence (1.2%). Non-active syphilis, an indication of previous syphilis infection, is higher than active syphilis at 6.3 per cent in Mogadishu. While this IBBS is the first ever to be conducted in South Central Somalia and Puntland, it provides baseline data on a wide array of indicators to guide the redesign of HIV programme in Somalia. The variation across key indicators (including Global AIDS Response Progress Reporting indicators) across study groups and sites indicate the need to target and tailor HIV response intervention to address specific HIV programming gaps identified from this survey. These gaps include the following: (a) low condom usage during transactional and non-transactional sex with clients; (b) low proportion of key populations who know their HIV status; (c) less than 25 per cent coverage of HIV prevention programmes for key populations; and (d) high proportion of key populations avoiding access to HIV programmes due to stigma and discrimination associated with either HIV services or sex work. Key interventions, such as design and optimization of a peer education programme, could significantly improve key indicators such as HIV programme coverage and increase access to HIV services due minimal stigma and discrimination. While this survey acts as a baseline, future IBBS surveys should be conducted to track progress of key indicators. Such future IBBS surveys will help to measure the success of the HIV response in Somalia. In future IBBS surveys, it will be good to follow up studies with the four groups included in this IBBS survey. It is recommended that future IBBS surveys explore inclusion of additional key population groups at higher risk of HIV.

1. Introduction

1.1. Background

In 2014, estimates showed more than 30,000 people were living with human immunodeficiency virus (HIV) across Somalia, including 9,531 in Somaliland, 16,363 in South Central and 3,832 in Puntland (UNAIDS, 2015). In addition, the same report indicated a total of 2,338 new HIV infections among adults aged 15 years and above recorded the same year. Previous studies in Somalia have shown HIV to be a concentrated epidemic, particularly among female sex workers (FSW); therefore, reducing prevalence among FSW and their clients is a critical measure of a national-level response to HIV. The 2016 mapping and size estimation of key population in Somalia established existence of an estimated 963, 1,126 and 911 FSWs in Mogadishu, Hargeisa and Bossaso, respectively. Clients of FSW (truckers, port workers, seafarers, fishermen, khat clients, tea clients and uniformed personnel) were estimated between 2,202 and 2,599 in Mogadishu and between 3,469 and 3,530 in Bossaso, while clients in Hargeisa were estimated at 1,559–1,828 (International Organization for Migration (IOM), forthcoming (b)). The majority of FSW meet their clients and transact sex either at their homes or the homes of the clients, especially on Thursdays and Fridays during evening hours. Across the literature, the aforementioned clients of FSW have been reported to engage in sexual relations with FSW (IOM, forthcoming (a); UNAIDS, 2014; Kriitmaa et al., 2010). Several factors have been cited to exacerbate their vulnerability to HIV infection or transmission; these factors include alcohol and khat consumption, low literacy levels, mobility (particularly among truckers), religious and cultural practices against use of condoms and limited access to HIV prevention activities.

1.2. Previous IBBS studies in Somaliland

Two rounds of integrated biological and behavioural surveillance (IBBS) surveys involving FSW have previously been conducted in Somaliland, in 2008 and 2014. In 2008, an IBBS study was implemented in Hargeisa involving 237 FSWs using respondent-driven sampling (RDS) (World Health Organization (WHO), UNAIDS and IOM, 2010). With an average age of 29 years, most of FSW had never attended school. In the 2008 IBBS, 6.9 per cent of FSW participants were refugees, whereas 29.8 per cent were economic migrants (Kriitmaa et al., 2010). The majority (57.2%) of participants in the 2008 IBBS were born in Ethiopia compared to 82.1 per cent in the 2014 IBBS whose place of birth was Somaliland (IOM, forthcoming (a); Kriitmaa et al., 2010). An HIV prevalence of 5.2 per cent and a syphilis prevalence of 3.1 per cent was established in this first round of IBBS survey, which was slightly higher than the 4.8 per cent recorded in 2014 (IOM, forthcoming (a)). The proportion of FSW who reported use of condoms in their last transactional sex prior to the study was 24 per cent in 2008, compared to 31.5 per cent in 2014. Most of FSW across the two IBBS studies had their vaginal sexual debut at less than 18 years, though most of them had their first paid sex at the age of 18 years and above. Although the 2008 IBBS indicated 36.7 per cent of FSW met their clients by the roadside, the majority of FSW in the 2014 IBBS met their clients either at their homes or clients' home. This concurs with recent studies including the 2016 mapping and size estimation study, which showed that homes are the major venue for both meeting clients and where FSW engage in sex (IOM, forthcoming (b)). Though khat sellers, truck drivers and businessmen were cited by FSW participants in the 2008 IBBS survey as frequent clients, the majority of FSW participants did not know the occupation of their clients (Kriitmaa et al., 2010). Truckers, khat sellers and businessmen in Hargeisa were cited by FSW in the 2014 IBBS survey as their most frequent clients.

Few FSW respondents in the two previous round of IBBS surveys in Hargeisa knew where to obtain an HIV test. Prior to the IBBS surveys, only 2.4 per cent of FSW in 2008 and 21.3 per cent in 2014 reported having had an HIV test in the last 12 months and received the

results. Self-reported access to condoms from HIV programmes among FSW was very low across the two IBBS studies, with 0.7 per cent in 2008 and 3.8 per cent in 2014. More than half of FSW reported preferring to access condoms through pharmacies (IOM, 2014). Only 4.3 per cent of FSW in 2008 and 15.7 per cent in 2014 reported consistent use of condoms with clients one month prior to the study, with the majority of FSW having poor composite knowledge about HIV prevention (10.4% in 2014 and 6.3% in 2008). These two IBBS studies, however, were limited to FSW only and did not include other categories of key populations, such as truckers, uniformed personnel and port workers who constitute key FSW clients.

1.3. IBBS justification

The previous two rounds of IBBS surveys in Somalia were conducted in Hargeisa in 2008 and 2014 focusing on FSW only. These surveys did not focus with other key populations who engage with FSW, including truckers, uniformed personnel and port workers. This IBBS survey provides baselines data that will enable tracking HIV prevalence among key populations in the three study sites (Mogadishu, Bossaso and Hargeisa), consequently providing useful indication of HIV prevention programme performance. The findings of this IBBS survey provides the national HIV programme with strategic information on current HIV and syphilis prevalence, as well as information on HIV and sexually transmitted infections-related (STI) related behaviours and risks. This information is essential for targeted planning of key population programmes towards realization of the 90-90-90 goal among key populations by 2020.

1.4. Study objectives

The overall objective of the survey was to undertake integrated HIV and STI IBBS among key populations in Somalia.

The specific objectives of this study included:

- (a) To establish both baseline (client groups) and trend data (FSW) for HIV and STI (syphilis) prevalence among key populations in Mogadishu and Bossaso;
- (b) To determine risk behaviours and knowledge of HIV and STI among key populations in Mogadishu and Bossaso; and
- (c) To establish an association between sociodemographic characteristics and HIV/STI risk behaviours among key populations in Mogadishu and Bossaso.

2. Methodology

2.1. Formative research stage

The formative research stage aimed to convene zonal partners and stakeholders to consult on the four key populations groups, as well as discuss the feasibility of conducting the IBBS surveys in the two study locations. This stage involved the following:

- (a) Review of previous studies conducted in Somalia especially on key population risks, size estimates, locations, accessibility and potential barriers to the survey.
- (b) Formation of zonal technical working groups (TWGs) comprising experts from the Ministries of Health (MoH), AIDS Commissions, UN agencies and local non-governmental organizations (NGOs) working with key populations. During these TWG meetings, the study methodology, including sampling techniques, survey logistics and level of compensation for participant's time and travel, will be discussed and agreed upon.
- (c) Pre-study meetings with gatekeepers at prospective data collection sites/venues, and identification of potential RDS seeds was conducted.

2.2. Study sites and target population

The study was undertaken in two locations: Mogadishu and Bossaso. According to the Global AIDS Response Progress Reporting (GARPR) report (2017), major towns and cities play a critical role in the HIV response because of their large and increasing number of people living with HIV and the increased vulnerability to HIV transmission associated with city dynamics, such as population density, migration, inequalities and high concentrations of key affected populations. Furthermore, such major towns and cities have a critical opportunity to provide leadership in the HIV response as drivers of economic and educational opportunity, innovation, accessible service delivery and inclusive, participatory approaches to governance. This IBBS survey targeted four study groups of key populations, namely FSWs, truckers (truck drivers and their assistants), uniformed personnel (police/military) and port workers. These groups were prioritized based on available data, funding and feasibility of implementing an IBBS in Somalia across different groups concurrently.

2.3. Study design and sampling techniques

A cross-sectional study involved recruiting respondents using two sampling techniques: RDS and TLS.

2.3.1. Respondent-driven sampling

RDS is a variant of chain-referral sampling that produces data that are representative of the target population. RDS resembles snowball sampling whereby members of the population recruit other members of the population within their social networks. However, unlike snowball sampling, recruitment is done in a controlled manner (maximum of three peers recruited by a participant) while collecting data that can be used to adjust for the biases encountered in persons recruiting from their social networks. Seeds refer the initial FSW who start the chains of recruitment among their social networks. Eight FSW seeds were purposely selected in each of the two study sites to

reflect the diversity of social networks in the respective two study sites in order to logistically enable the survey to reach equilibrium within a feasible time period, and also to ensure diversity across networks. During selection of the initial seeds, preference was given to FSW who were well connected within their networks (among their peers) and well regarded and respected by their peers. A Global Fund sub-recipient NGO working with FSWs in Bossaso (Badbado) and the central laboratory in Mogadishu supported the study through provision of survey space at their premises. These spaces allowed for safety and privacy of participants and the research teams. This also allowed for smooth administration of the behavioural questionnaire and HIV and syphilis testing. To avoid long waiting times among participants, two interviewers and two nurse counsellors conducted HIV and syphilis tests, working concurrently. Due to the sensitivity of the study in Somalia, posters or signage advertising the study were not be used.

2.3.2. Time location sampling

TLS was used to recruit respondents among truckers, uniformed personnel and port workers. TLS is a probability-based method for enrolling members of a key population at times and places where they congregate. TLS is a procedure in which venues (e.g. truck stops, ports, hotels) and their associated attendance periods are the primary sampling units. A sampling frame comprising of a comprehensive list of venues where the key populations can be found and the days of the week and the hours of the day when they can be found in number was created and agreed upon during TWG meetings. Additional information on possible sampling units was derived from the mapping and size estimation study conducted from December 2015 to March 2016. Prior to this IBBS survey, fieldwork preparation for TLS was conducted at the locations where the IBBS would be conducted (truck stops, uniformed service bases, central laboratories, police stations and ports).

Appropriate buildings near or within the truck stops, central laboratory (Mogadishu) ports and police/military bases were rented out to create sufficient space for interviewing and administering the biological testing component. The venues were randomly selected from the sampling units created during the formative stage. Each venue, constituting a sampling unit, was assigned a consecutive number. A computer software, Research Randomizer, was then used to generate random numbers.

Appropriate days and time were identified as Sundays through Thursdays from 7 a.m. to 12 p.m. During data collection, all seemingly eligible people who were at the venues within operating hours were consecutively approached and asked to complete a brief eligibility interview. During training, screeners were trained to approach potential participants by identifying themselves, their purpose and to confidentially conduct brief eligibility interviews. However, due to security risks in Somalia, identification badges were not used. Individuals who agreed to participate in the IBBS survey were accompanied to the rented venue located within/next to the truck stops, port or police/military base for interview and subsequent syphilis and HIV testing. In cases where recruitment was extremely slow, members of the target group (in company of a screener) were used to mobilize peers who were at the venue or data collection site for eligibility screening. All eligible individuals were asked to participate. Participants were asked for verbal informed consent for conducting the survey interview and testing for HIV and syphilis. On successful completion of the behavioural and biological components of the interview, each participant was given USD 4 (apart from truckers in Mogadishu who were given USD 7, as USD 4 was not feasible among this study group) to compensate for their time to participate in the survey. At each data collection point, the survey team had representation from a Global Fund sub-recipient who worked with that particular key population group.

2.4. Sample size

The sample size generated was based on the surveillance purpose of tracking important changes in the HIV epidemic over time; that is from earlier estimates of HIV prevalence (i.e. IBBS surveys conducted in Hargeisa). Each of the three study sites, and each population group, constituted a separate survey with a sample size needed to track changes at each study site and population group over time. The sample size calculation, using the formula below, took into consideration eight key indicators used in the previous IBBS surveys as shown in Table 1.

$$N = \text{Deff} [(Z)^2 P(1-P) / W^2]$$

Where:

- Deff – Design effect of 2.0
- N – Desired sample size
- Z α – Standard normal deviate at the significance level ($\alpha = 0.05$, two-sided) corresponding to 1.96
- P – Expected proportion with outcome of interest
- W – Degree of accuracy, at 0.05

Table 1: Indicators used to determine sample size from IBBS survey with FSW in 2014

No.	Indicator	Population estimation	Resulting sample size (N)	With design effect (x2)
1	% FSW infected with HIV	4.8%	70	140
2	Condom use at last sex	20.6%	332	663
3	Condom used consistently with clients in past month	13.3%	177	354
4	Ever heard of male condom	72.3%	366	732
5	Less than 5 clients in past 30 days	35.6%	367	734
6	% FSW who had HIV test in past 12 months and knew result	21.3%	258	516
7	Ever had HIV test	4.0%	320	640
8	% FSW who correctly identified ways of preventing transmissions and rejected major misconceptions	10.4%	143	286

Using a design effect of 2.0, as recommended in both RDS and TLS studies, the resulting sample size ranges between 140 and 734. The indicator on percentage of FSW who correctly identify ways of preventing transmission and reject major misconceptions (GARPR 5.1) was used, as it struck a balance of feasibility and acceptable precision in the Somaliland context. Thus, a sample size of 286 was used per key population group. Consequently, a total of 1,144 respondents were recruited in Mogadishu and Bossaso.

2.5. Operational definition of key terms and target populations

- Key population – Groups at increased risk of HIV infection or transmission, in the Somali context comprising of FSWs, truckers, police, military officers and port workers
- Truckers – Long-distance and intra-city truck drivers and their assistants in Mogadishu or Bossaso
- Uniformed personnel – Individuals who belong to any uniformed services including military and police in Mogadishu and Bossaso

- FSW – Women who had engaged in sexual activity with men in exchange for money, favour or goods in the last 12 months in Mogadishu and Bossaso
- Port workers – Individuals working as manual labourers at the ports of Mogadishu and Bossaso

2.6. Eligibility

Inclusion

- Aged 18 years and above
- Had to be a FSW, trucker, uniformed personnel or port worker (meet the operational definition outlined previously)
- In possession of a valid referral coupon (RDS/FSW only)
- Approached by study staff in designated venue/time (TLS/client groups only)
- Capable and willing to provide informed consent to participate (see further information on informed consent below)
- Working and/or living in any of the two respective study sites: Mogadishu and Bossaso (defined as primary residence/where person lives the majority of time)

Exclusion

- Previous participation in this round of IBBS survey
- Inability to provide informed consent (including persons incapable of providing consent or under the influence of alcohol or drugs)

2.7. Screening for eligibility

Whenever a potential participant was presented to the study site, the screener examined and verified the authenticity of the coupon (FSW team only) presented to exclude possibility of double participation, in addition to other eligibility criteria. Eligibility was assessed using a short questionnaire covering the aforementioned criteria. In case the screener still remained unconvinced about potential participant's eligibility, he/she was under instruction to pose additional non-standardized questions to confirm eligibility.

2.8. Study variables

This IBBS survey examined the following biological and behavioural variables:

- HIV prevalence and STI (syphilis) prevalence
- Demographic characteristics: Age, nationality, marital status and others
- Knowledge on HIV and STI transmission
- Sexual history
- Sexual history: Paying clients
- Sexual history: Non-paying clients
- Condoms: Male and female
- Population size estimation

- HIV testing history
- Stigma and discrimination
- Physical and sexual violence
- Programme coverage
- Alcohol and drug use

2.9. Population size estimation

Estimation of key population sizes when implementing IBBS surveys is currently recommended (GARPR, 2017). The survey included questions on size estimation of key populations in Mogadishu and Bossaso. Both the multiplier method and the wisdom of the crowd method were used.

2.9.1. Health service multiplier

Procedures for a service multiplier entail obtaining programme data from a clinic or other programme servicing the key population on the total number of key population members who accessed that service during a specific period (e.g. number of FSW accessing voluntary counselling and testing (VCT) centre for HIV testing) (UNAIDS and WHO, 2010). Existence of this critical information was sought for during the zonal stakeholder TWG meeting. Unfortunately, existing programmes in Somalia have not captured data specific to target population, such as HIV testing data among FSWs or any other key population category. During administration of the survey questionnaire, all respondents were asked whether they accessed this service during the specified time period. The number of key population members from the service data count and the proportion reporting having accessed this service in the survey questionnaire provide the parameters for computation of population estimates. To strengthen accuracy, the initial plan was to ensure that service data counts included all the key population members accessing the service, unduplicated (no one counted twice), and that service data were for the appropriate period (for the last 12 months prior to the current IBBS survey). Using these two data sources, the multiplier method provides a population size estimate with the following formula:

$$N = n / p$$

Where N is the estimated key population size, n is the total number of key population who accessed the health service (e.g. HIV testing), and p is the proportion of the key population reporting in the current IBBS survey to have accessed health service (HIV testing).

2.9.2. Successive sampling-population size estimation

Successive sampling-population size estimation (SS-PSE) along with network size imputation allows population size estimates to be made based on theoretical decline in network size over sampling wave in RDS. This new experimental method requires only an RDS survey (though better with additional estimates to compare, inform prior) to be computed within RDS Analyst software. This method provides a promising alternative to other methods commonly used to estimate the size of hard-to-reach populations. SS-PSE relies only on data already collected in an RDS study. FSW population size estimates are presented in form of mean, median and mode. The results of this estimation should be interpreted with caution.

2.9.3. Wisdom of the crowd

The survey also produced an estimate of the number of each key population in the survey location through the synthesis of survey participant opinions, also called the wisdom of the crowd method (Surowiecki, 2004). Participants in the IBBS were asked their best estimate of the number of key

population members like them in their location. Such an approach produces a measure of the perception of community members of the population size of the key population. The wisdom of the crowd method theorizes that members of the population have specialized information on the population and that personal opinion formulated in private was not influenced by others' responses. The estimate was examined as the median, mode and mean responses and compared to the other size estimation methods.

2.10. Data collection

This IBBS survey collected both behavioural and biological data from participants. Data items included indicators needed to track the HIV epidemic and the national response for key populations, conforming to international standards (e.g. GARPR indicators as shown in Table 2 and Somalia Key Performance Indicators), national programme needs and comparability with similar surveys in the region. The questionnaire collected data on sociodemographic indicators, sexual behaviours potentially correlated with HIV, self-report STI symptoms, stigma and discrimination, risk perceptions, and knowledge, attitude and practices around HIV and AIDS. The majority of questions in the previous IBBS surveys in Somalia were included in order to compare trends. The behavioural questionnaire was programmed into a mobile application, mFieldwork, and administered by a trained interviewer in the local language. The behavioural questionnaire was translated into Somali. Biological data was collected on paper, and data entry was done by the site supervisor on password-protected laptops at the end of each day. The site supervisor also stored a back-up copy of the files on a flash drive that was kept in a locked cabinet. The biological participant records were devoid of any participant identifiable information, only unidentifiable unique sequential coupon code and a unique laboratory code. Pretesting of the questionnaire was conducted at the survey sites prior to the full-scale study to establish effectiveness of the behavioural questions.

Based on lessons learned from previous similar studies in Hargeisa, this study conducted FSW interviews at Global Fund sub-recipient office (Badbado in Bossaso) and the Central laboratory in Mogadishu as opposed to private rented premises. Since the Global Fund sub-recipients have been working with FSW were likely to be more comfortable to access these premises, and this also minimizes suspicion from members of the public on the nature of activities. The study also rented private venues/premises next to truck stops and ports. The uniformed services team operated inside military bases/police stations. The research team sought permission and support from the ministries of Interior and ministries of Fisheries and Maritime. During the zonal TWG meetings, the research team created a sampling frame of all truck stops, ports and military and police bases. Administrative authorization from the respective ministries was sought prior to commencement of data collection. Each of the three study sites had four independent data collection sites for the respective study groups (FSW, truckers, uniformed personnel and port workers). The data collection sites operated daily (except Fridays) during data collection with different operation time depending on the population group. The sites were temporarily closed daily during prayer times.

Table 2: GARPR indicators among key populations included in the Somalia IBBS

3.3	HIV prevalence among key populations
3.4	Knowledge of HIV status among key populations
3.6A	Condom use among sex workers
3.7	Coverage of HIV prevention programmes among key populations
3.8	Safe injecting practices among people who inject drugs
3.11	Active syphilis among sex workers
4.2	Avoidance of HIV services because of stigma and discrimination among key populations
5.1	Young people: Knowledge about HIV prevention

Figure 1: Data collection flow procedure/chart among FSW team

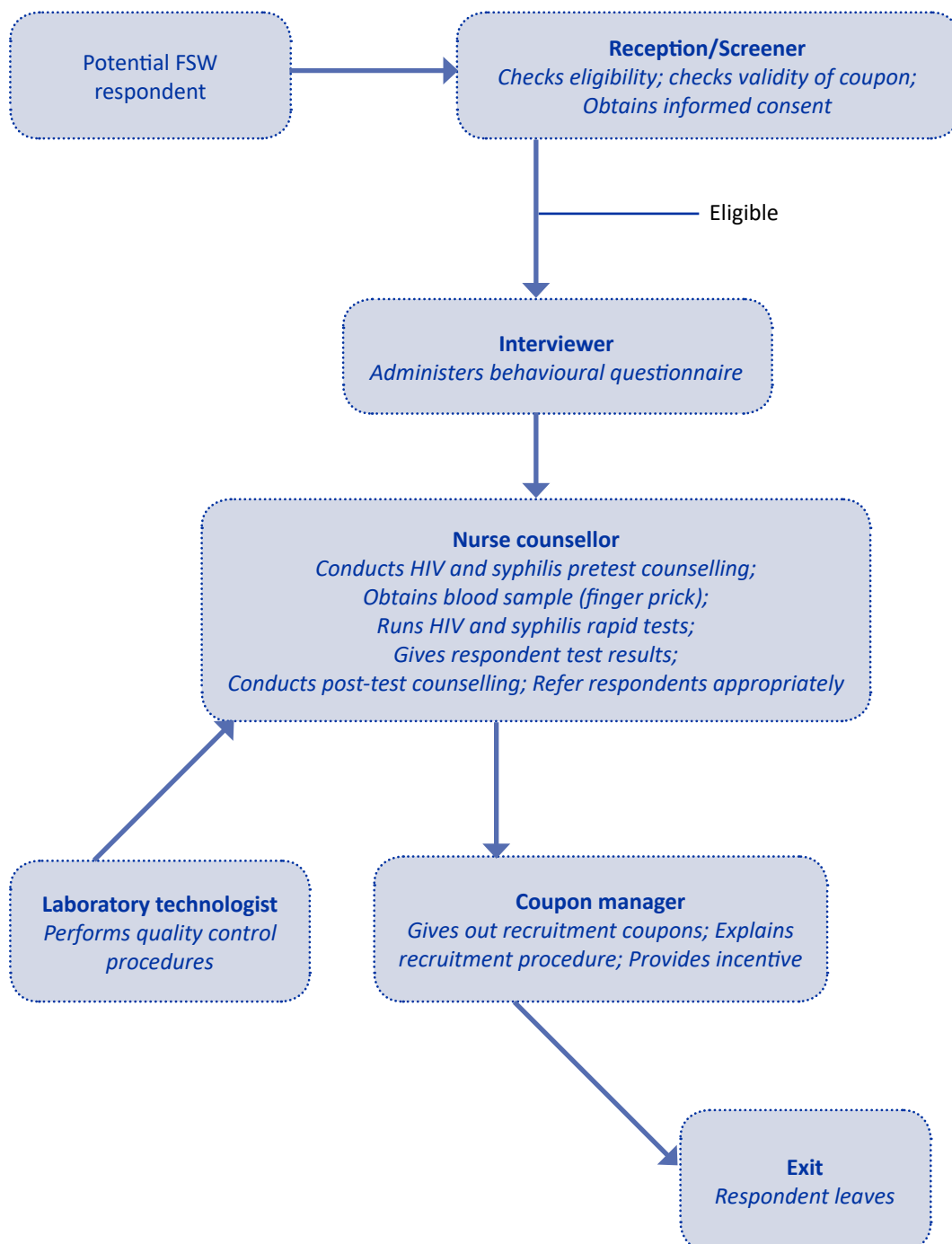
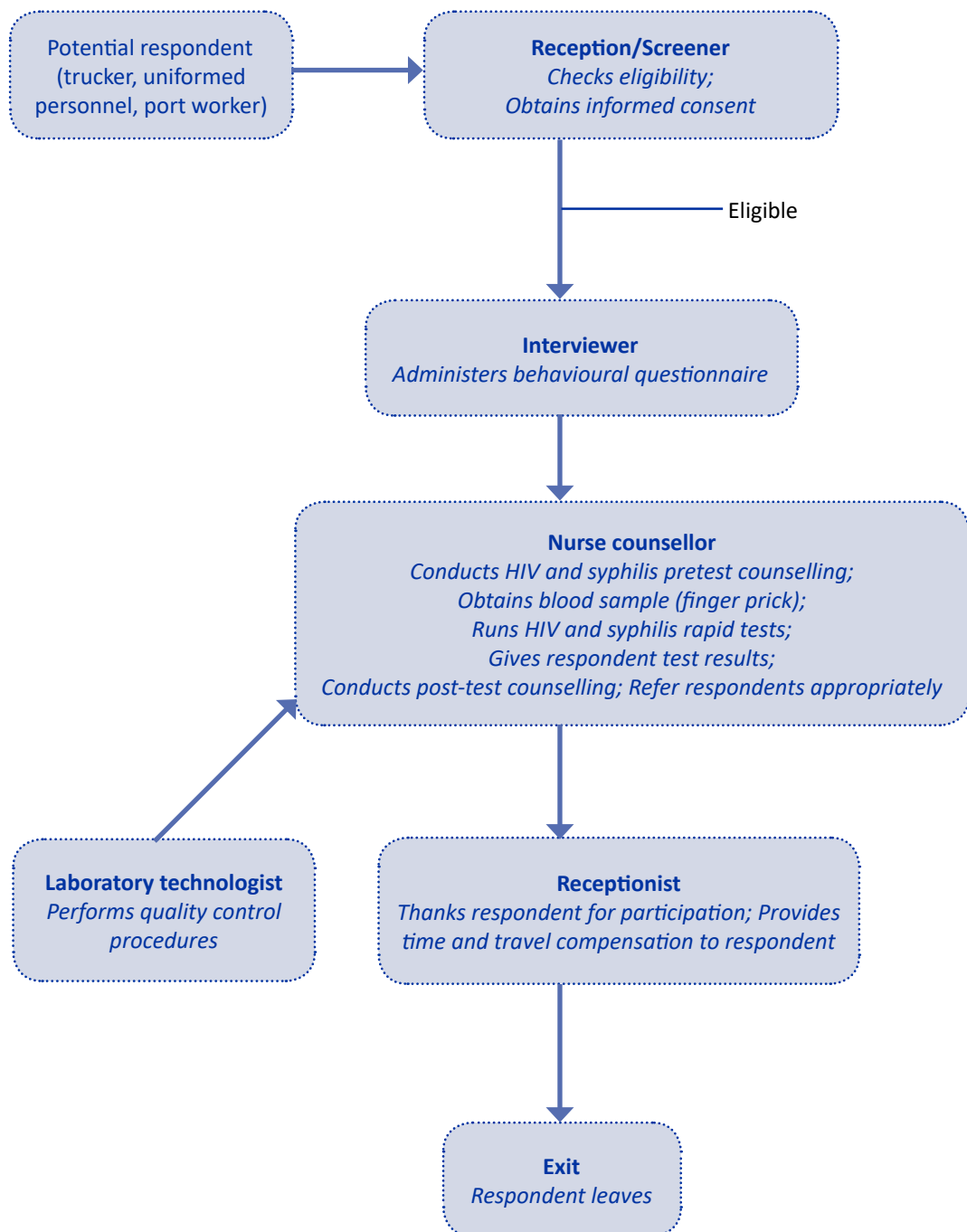


Figure 2: Data collection flow procedure among truckers, uniformed personnel and port workers



2.11. Compensation for respondent's travel and time

Successful completion of both behavioural and biological components of the survey consumed a significant amount of time – potentially up to 2.5 hours. All participants were compensated for their time and travel to the safe data collection site. USD 4 was paid upon successful completion of behavioural and biological interview process. However, it was not feasible to offer USD 4 to truckers in Mogadishu. Therefore the study team agreed to raise the amount to USD 7 per participating trucker in Mogadishu. Since success of RDS is dependent on referral of peers to data collection site by initial FSW seeds, USD 3 was compensated for every successful referral among FSW team. The research team confirmed the local appropriateness of these incentives during the TWG consultative meetings in Mogadishu and Bossaso. In addition, participants received HIV/STI prevention messages from nurse counsellors and linkage to treatment (at Banadir Hospital and Bossaso General Hospital) in case one was HIV or syphilis positive.

Figure 3: Front side of the Somalia IBBS coupon

Coupon for participation in the Somalia IBBS survey

Coupon number

Come with this coupon on working days (Saturdays to Thursdays) from 8.30am–5pm.

From To

To avoid rushes, please make a phone reservation on xxxxxx on working days from 8am–4pm.
Don't forget to bring the coupon.

Venue: _____

Secondary participation compensation coupon

Coupon number

For each participant you refer to this survey (up to 3 persons) you will get a compensation for your time and travel to reach out to your peer.

For more information call xxxx on working days between 8am–5pm.
Venue: _____

Figure 4: Back side of the Somalia IBBS coupon

Coupon for participation in the Somalia IBBS survey

Please come with this coupon, and if you fulfil eligibility criteria for participation in research, our **female** staff will give you:

- Free information about HIV and STIs
- Money compensation of USD 4 for taking time and traveling to the venue to be interviewed and get an anonymous testing on HIV and syphilis from blood.
- Results from all tests and counseling about possible treatments

This coupon won't be accepted if:

- it has expired
- participant has already participated in this survey

For more information, please call xxxxxx

Secondary participation compensation coupon

You will get incentive of USD 3 for each person you direct to the survey if she:

- is eligible to participate in the survey
- hasn't already participated in the survey
- has come before the expiry date of coupon
- has filled out the questionnaire
- has given blood sample for HIV and syphilis tests

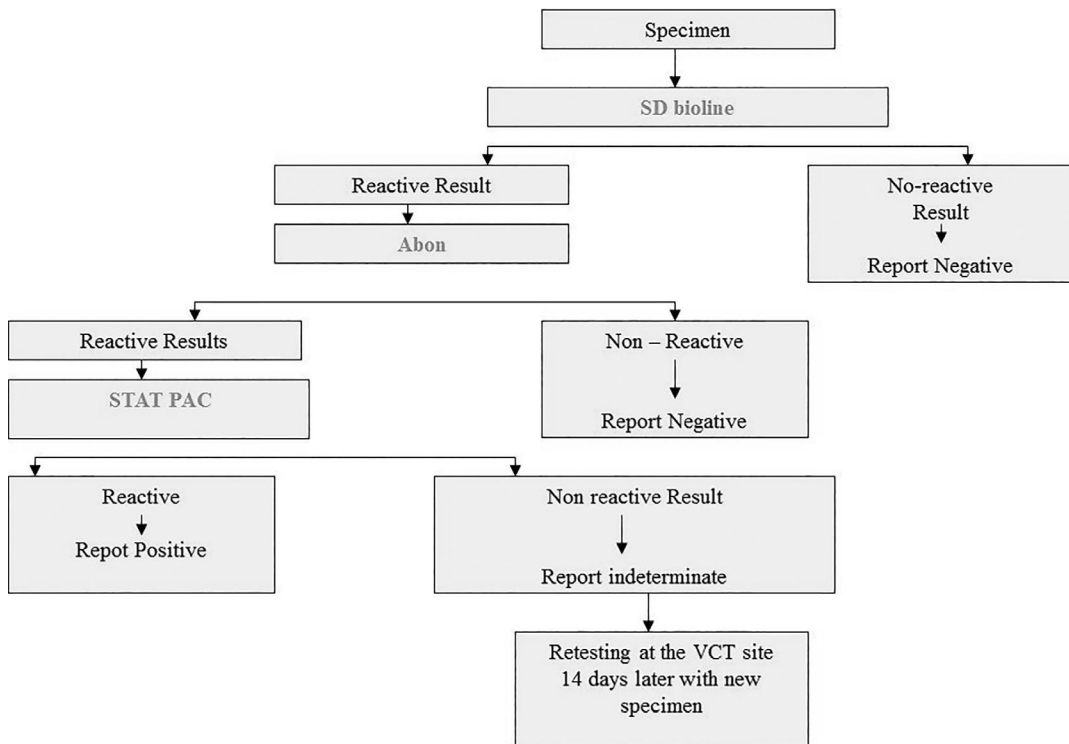
2.12. HIV and syphilis testing

Serological testing for HIV and syphilis followed the WHO-approved testing strategy for Somalia. HIV rapid/point-of-care tests was conducted on site using capillary blood from a finger prick. Due to low prevalence of chlamydia (0.7%) and gonorrhoea (0.4%) (IOM, forthcoming (a)) IBBS coupled with resource constraints, the stakeholders agreed to test for HIV and syphilis only.

2.12.1. HIV testing

HIV rapid testing was conducted at the survey sites after completion of the behavioural questionnaire and pretest counselling by nurse counsellors. Rapid testing was conducted using a serial testing scheme as outlined in the Somalia national algorithm and WHO-approved rapid test kits. All participants who consented were tested using SD Biline HIV rapid test kits. Non-reactive results were considered negative, and reactive results were confirmed with Abon HIV rapid test. A positive HIV test by Abon HIV test warranted a further test using Stat-Pack HIV test. Non-reactive results from Stat-Pack was considered indeterminate, and the participant was told to re-test after 14 days. However, reactive results on Stat-Pack HIV test was considered positive. All participants received post-test counselling, with specific messages tailored to their test result including HIV prevention messages. Persons with any reactive result, or indeterminate result, were given referral to HIV care and treatment services and further counselling and testing at the VCT centres within Banadir Hospital and Bossaso General Hospital. IBBS survey site supervisors followed up with collaborating general hospitals to ensure complete referrals.

Figure 5: Serial HIV rapid testing strategy



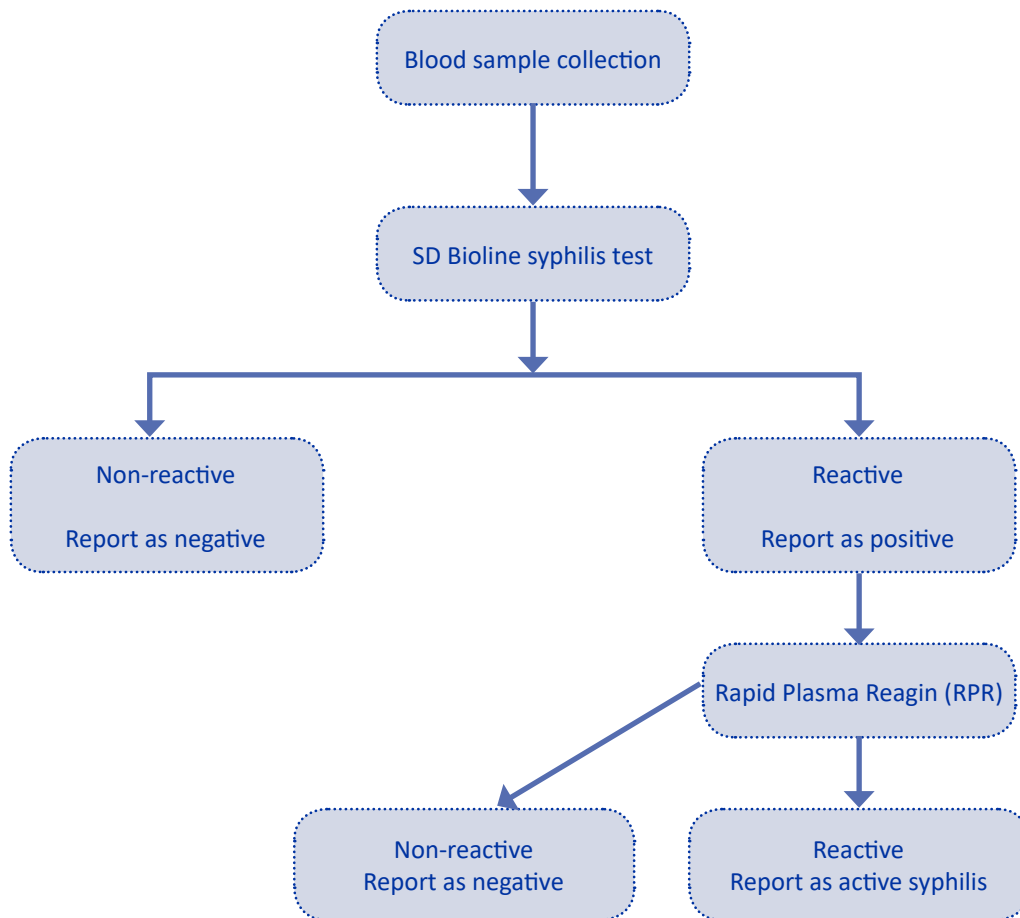
Source: WHO Somalia, 2017.

2.12.2. Syphilis testing

Testing for syphilis adopted the WHO-approved testing strategy for Somalia. On-site testing of syphilis was done using rapid SD Biline Syphilis test kits. Non-reactive tests were reported as negative, whereas respondents with reactive results were tested using a second test. For every reactive SD Biline Syphilis test, a further test with non-treponemal rapid plasma reagin (RPR)

was conducted. The specimen for every 10th participant and also every positive rapid SD Bioline syphilis test was transported to the central laboratory for quality control purposes.

Figure 6: Syphilis testing strategy



2.13. Testing quality assurance

For every 10th respondent, a venous blood draw of 3 ml of blood, distributed in two tubes: 1–2 ml EDTA tube for performing the on-site rapid HIV/syphilis tests, and 2 ml serum separator tube. The samples were centrifuged and the serum aliquoted for testing at central laboratory and Bossaso General Hospital laboratory for quality control purposes. All samples sent to the aforementioned laboratories had a laboratory code that was linked to the participants' survey code. The samples sent for quality assessment were sent without test results. After the samples were tested, results were returned to the study site in order to establish the discrepancy rate. On-job supportive supervision and training was provided to the national laboratory and VCT nurses to prevent occurrence of testing errors. However, there was no discordance between the results.

2.14. Training of research field team

The field survey staff, including the screeners, interviewers, nurse counsellors, coupon managers, outreach workers, site team leader, MoH and AIDS Commission focal persons and national consultants, participated in a one-week mandatory training on survey protocol and operational/implementation approach. The training covered the Somalia IBBS research protocol, data management, ethics, safety, human subjects and confidentiality. Nurse counsellors were also required to participate in a two-day WHO-led refresher training on the national guidelines for HIV and syphilis counselling, testing and referral services.

2.15. Data analysis

Analysis of RDS data was conducted to produce population prevalence estimates and confidence intervals of variables adjusting for unequal probabilities of inclusion due to varying social network sizes and the similarities in characteristics of persons within their social networks. This was done using RDS Analyst. During data collection, analysis was done at midpoint to test for equilibrium. Specialized analyses within RDS Analyst was used to adjust for social network size and homophily within networks, and was used to produce population point prevalence estimates and 95 per cent confidence intervals of key variables, adjusting for unequal probabilities of inclusion. Data with weights was exported to STATA for analysis.

TLS data was analysed using STATA with commands for survey data that incorporate sampling weights and adjustments to standard errors for clustering on daytime sampling events. In both RDS and TLS data, the primary analysis was the adjusted population point estimates of prevalence of HIV infection, use of health-care services and of key risk behaviours (e.g. multiple/concurrent partners, drug/alcohol use), prevalence of condom use and access to health-care and prevention programmes. Analysis focused on GARPR indicators. In both RDS and TLS, explanatory variables entered into the models included age, education, typology of key population, study site, sexual behaviours, marital status, knowledge of HIV, number of sexual partners, alcohol and drug use, STI symptoms and exposure to an HIV/AIDS interventions and messaging. Multivariate analyses (logistic regression) using STATA version 12.0 version 20.0 was performed to identify correlates of HIV and STI risk behaviours also using sampling weights and adjustment for clustering. Variables in each model with a P value of 0.05 or less was considered statistically significant.

2.16. Ethical considerations

This protocol was submitted for ethical review from the Federal Government of Somalia and Puntland MoH Ethical Review Committee/Board. Names or other identifying information of participants was not to be used on the survey, survey forms or on any lab specimens. All paper-based survey materials were stored in locked file cabinets, in locked offices. Participants were not asked for identification (such as national ID). Prior to interview, the interviewer read out loud the consent form to the participant and obtain informed verbal consent. The interviewers ensured the respondent has understood every part of the informed consent. Persons incapable of providing consent or under the influence of alcohol or drugs were excluded from the study. All electronic data files were password protected and only accessible to authorized IBBS personnel. RDS participants were compensated for their time and travel to a safe data collection site. All staff participating in this Somalia IBBS were required to sign an employee confidentiality agreement after training. Participants in this IBBS benefited from counselling and testing for HIV and syphilis, referral for HIV/syphilis care and treatment services (those testing positive for syphilis or HIV), and free health promotion and prevention messages delivered by nurse counsellors.

3. Findings

MOGADISHU

3.1. Mogadishu female sex workers

A total of 287 FSWs were recruited. Eight initial seeds were purposely recruited through contacts with staff working at Banadir Hospital Maternal and Child Health (MCH) clinic and Global Fund sub-recipients working in Mogadishu. The seeds were recruited to represent diverse characteristics including varied age and originating from different parts of Mogadishu.

3.1.1. Response rate and eligibility

Out of 491 coupons distributed, 63.5 per cent were returned by FSW at data collection site. Few FSWs (4.5%) refused to accept coupons from the coupon manager, citing fear of being identified as a FSW in case she went out to recruit other FSW. Among the 8 per cent of FSW who were ineligible to participate in the survey, 88 per cent were not FSW as shown in Table 3.

Table 3: Response rate and eligibility of Mogadishu FSWs

Characteristic	Sample proportions	
	n/N	%
Coupons distributed	491	-
Coupons returned	312/491	63.5
FSW who rejected coupons	13/287	4.5
Reasons for coupon rejection/refusal to accept coupon (at data collection site)		
Fear of being identified as a FSW	13/13	100
Participants ineligible	25/312	8.0
Reasons for ineligibility		
Not FSW	22/25	88.0
Under 18 years	3/25	12.0

3.1.2. Network properties

The recruitment tree for FSW in Mogadishu is illustrated in Figure 7. This tree indicates eight FSW seeds and the accompanying recruitment chains. The maximum number of waves reached from one seed is seven as shown in Figure 8. While seed 7 and 8 had the least recruits, seed 3 had the highest number of recruits as shown in Figure 7.

Figure 7: Mogadishu FSW recruitment tree

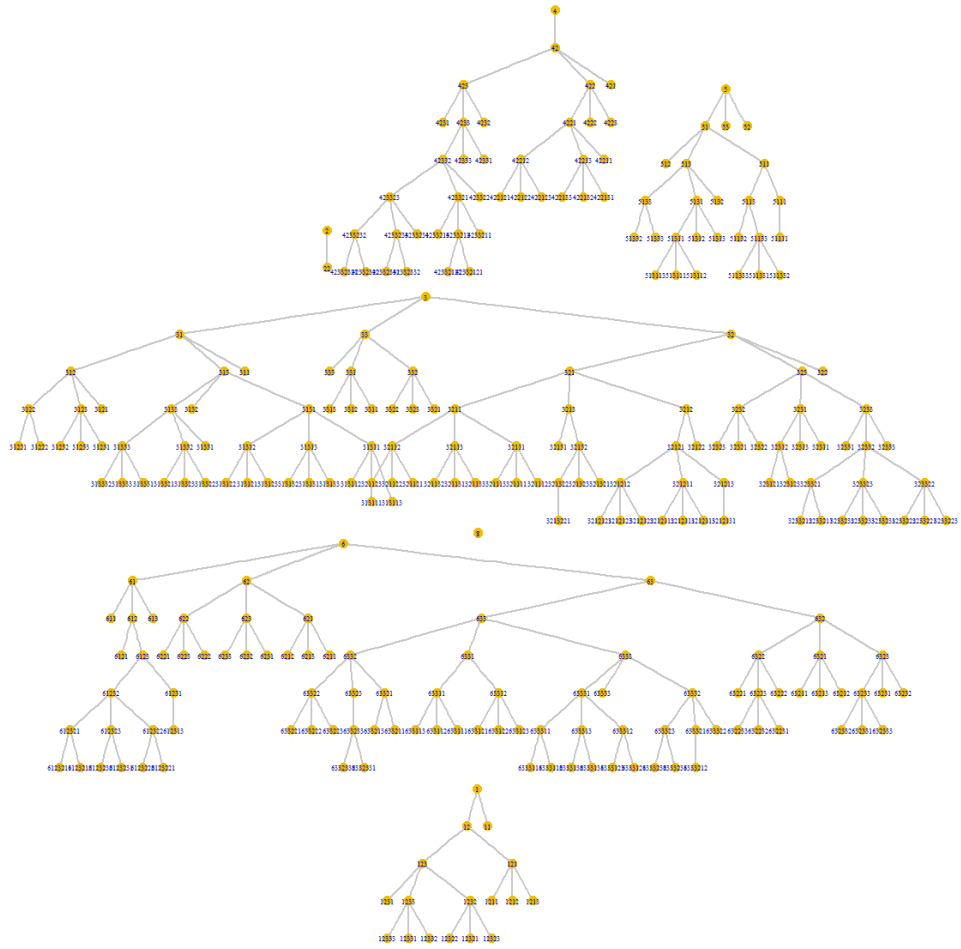


Figure 8: Mogadishu FSW recruits per seed

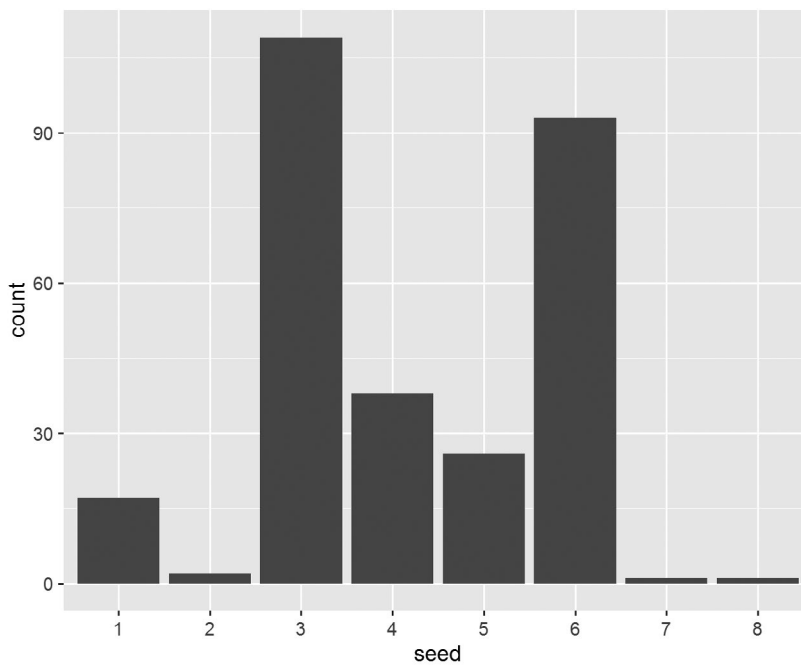
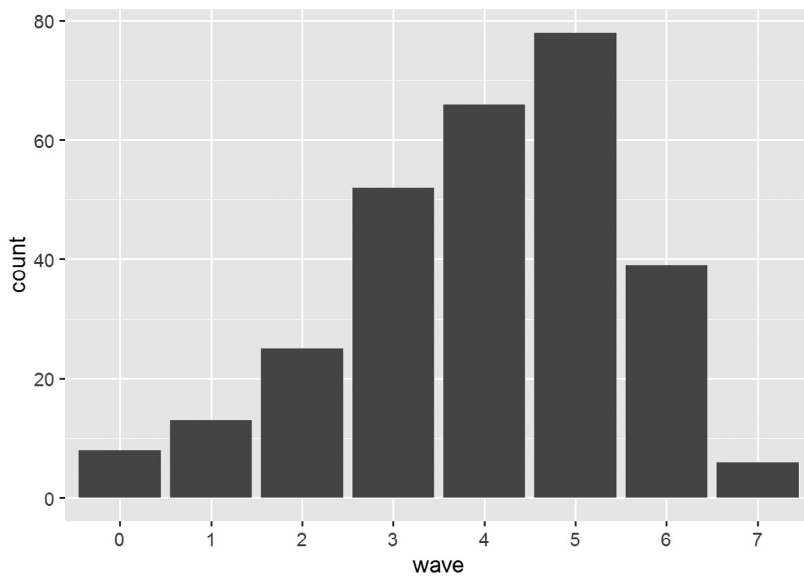


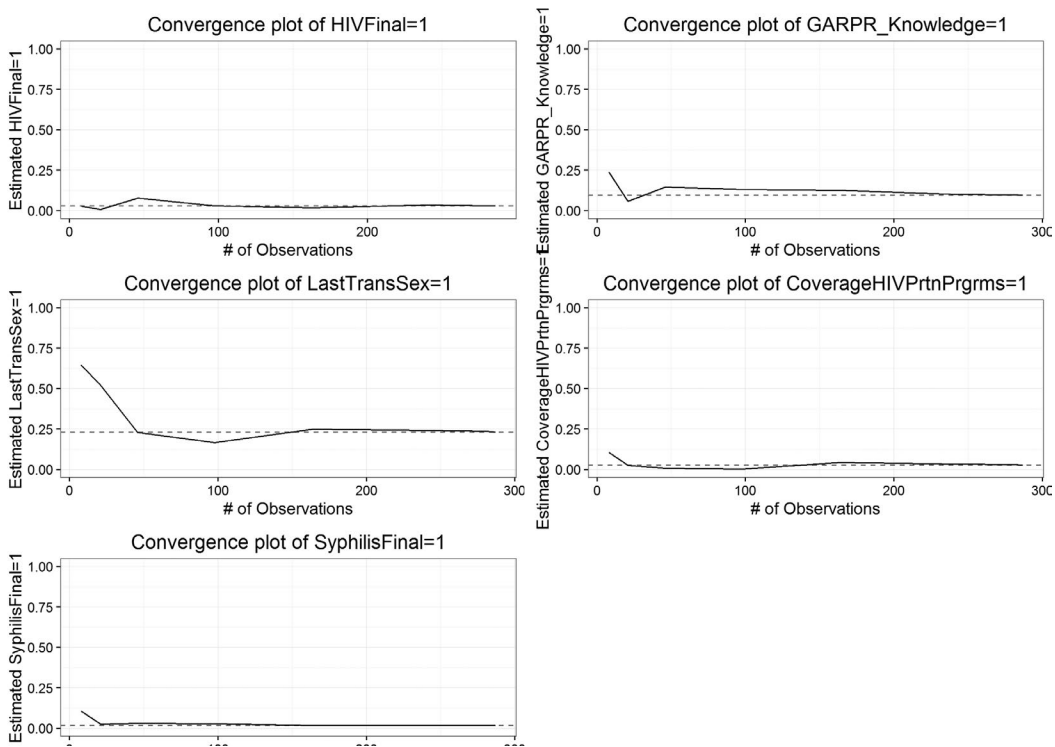
Figure 9: Mogadishu FSW recruits per wave



3.1.3. Convergence

Convergence was reached on all five key indicators as shown in Figure 10. The five key GARPR indicators tested to establish convergence comprised HIV prevalence, syphilis prevalence, knowledge on HIV, condom use at last transactional sexual intercourse and coverage of HIV prevention programmes.

Figure 10: Mogadishu convergence plots on key indicators



3.1.4. Sociodemographic characteristics

The average age of FSW in Mogadishu is 29.8 years, with the majority of FSW aged 25 to 34 years. Whereas all FSW were of Somali nationality, four respondents were born in Ethiopia and Puntland. The majority of FSW (86.8%) have no education. Nearly all FSW (95.5%) have been living in Mogadishu for more than two years. Most of the FSW are divorced, and more than two thirds are living with children. Besides sex work, 17.1 per cent of FSW earn money doing other work, such as domestic work, cleaning, hotel work and tea selling. However, more than half of the FSWs (65.1%) earn USD 100 or less per month as shown in Table 4. Finally, all FSW are circumcised.

Table 4: Sociodemographic characteristics of Mogadishu FSWs

Characteristic	Sample proportions		Population estimates	%	95% confidence interval
	n/N		%		
Age	Range	18–52			
	Mean ± SD	29.8 ± 6.9		29.8 ± 6.8	
	Median	28		29	
	<25 years	59/287	20.6	20.5	15.5–25.4
	25+ years	228/287	79.4	79.5	74.6–834.4
	18–24	59/287	20.6	20.5	15.5–25.4
	25–34	143/287	49.8	50.6	44.4–56.7
35–44	73/287	25.4	24.7	19.8–29.6	
>=45	12/287	4.2	4.3	1.8–6.8	
Level of education	None	247/287	86.1	86.8	83.2–90.5
	Primary	31/287	10.8	10.1	6.7–13.4
	Secondary	8/287	2.8	2.9	0.8–4.9
	University	1/287	0.3	0.2	0–0.5
Nationality	Somalia	287/287	100	100	-
Place of birth	Ethiopia	1/287	0.3	0.6	0–1.5
	Puntland	3/287	1.0	0.6	0–1.2
	Somaliland	5/287	1.7	1.4	0.1–2.8
	South Central Somalia	277/287	96.5	96.9	95.2–98.6
	Other	1/287	0.3	0.3	0–0.8
Length of stay in Mogadishu	2–3 months	1/287	0.3	0.2	0–0.5
	4–6 months	3/287	1.0	1.2	0–2.6
	7–11 months	4/287	1.4	1.3	0.1–2.5
	1–2 years	5/287	1.7	1.6	0.3–2.9
	More than 2 years	274/287	95.5	95.5	93.4–97.7
Marital status	Divorced	230/287	80.1	82.0	78.2–85.7
	Married	4/287	1.4	1.6	0.1–3.1
	Separated	6/287	2.1	2.3	0.6–3.9
	Single	11/287	3.8	3.3	1.5–5.1
	Widowed	36/287	12.5	10.9	7.7–14.1
Proportion of married FSW whose spouse/partner has another wife or wives		2/4	50.0	58.5	17.1–62.9
Person the FSW is currently living with	Children	190/287	66.2	68.0	62.3–73.7
	Roommate	4/287	1.4	1.2	0.4–2.1
	Alone	67/287	23.3	21.2	16.7–25.5
	Other family	11/287	3.8	3.6	1.4–5.9
	Siblings	4/287	1.4	1.7	0.1–3.4
	Parents	9/287	3.1	2.5	1.1–3.9
	Other	2/287	0.7	0.9	0–2.1
Proportion of FSW who currently earn money doing work other than sex work		47/287	16.4	17.1	12.9–21.2

Characteristic	Sample proportions		Population estimates	%	95% confidence interval
	n/N		%		
Type of other work currently done (multiple answers possible)	Tea seller	2/47	4.3	4.3	3.3–5.2
	Hotel worker	10/47	21.3	22.7	8.9–37.1
	Cleaning shops	4/47	8.5	8.6	2.1–15.2
	Domestic worker	33/47	70.2	71.4	44.4–99.2
	Trader	1/47	2.1	0.7	0–0.7
	Manual labourer	1/47	2.1	1.6	0–5.6
Overall monthly household income (in USD)	Range	10–450			
	Mean	91.6 ± 70.8		96.2 ± 71.0	
	Median	60		80	
	100 or less	197/287	68.6	65.1	59.0–71.1
	More than 100	90/287	31.4	34.9	28.9–41.0
Number of people she is currently supporting	Mean	3.2 ± 2.7			
	Median	3			
	0	2/287	0.7	0.8	0–1.9
	1–5	181/287	63.1	61.0	55.3–66.7
	6–10	102/287	35.5	37.0	31.5–42.5
	More than 10	2/287	0.7	1.2	0–2.8
Undergone circumcision		286/286	100	100	-

3.1.5. HIV and syphilis prevalence

The overall prevalence of HIV and syphilis infection among FSW in Mogadishu is 2.9 per cent and 6.3 per cent respectively. However, 28.6 per cent of FSW who have had syphilis infection have current active syphilis infection. In addition, HIV and syphilis comorbidity is 0.1 per cent, as shown in Table 5. However, among FSW who have ever had a syphilis infection, currently active syphilis infection is present among 33.1 per cent (95% confidence interval = 17.8 – 43.9) of them (not shown in table).

Table 5: HIV and syphilis prevalence among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates	
	n/N	%	%	95% confidence interval
HIV	8/286	2.8	2.9	2.4–3.4
Syphilis – Ever infected	20/286	7.0	6.3	5.2–7.4
Syphilis – Active syphilis	8/286	2.8	1.8	0.8–2.8
HIV and syphilis co-morbidity	1/286	0.3	0.1	0–0.3

3.1.6. Patterns of STI care and treatment seeking behaviour

Almost all FSW (98.6%) have heard of HIV and AIDS, whereas 71.8 per cent have heard about other infections that can be transmitted through sex. STI testing appears to be low, with slightly over a third of FSW receiving an STI test in the past three months, and 19.1 per cent having been diagnosed by a medical professional with an STI in the 12 months prior to this study. In addition, although one third (33%) of FSW have had an abnormal discharge from the vagina in the past 12 months, only two thirds (65.9%) sought STI treatment. Similarly, of the 7.6 per cent of FSW who have had a sore or ulcer in the genital area in the past 12 months, only about half of them (55.6%) have sought treatment for it, as shown in Table 6.

Table 6: Patterns of STI care and treatment seeking behaviour among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Proportion who have ever heard of HIV/AIDS	282/287	98.3	98.6	97.4–99.9	
Proportion who have heard about other infections that can be transmitted through sex	206/287	71.8	71.8	66.4–77.2	
Proportion of FSW who know at least one symptom of an STI (among those who know of STIs)	184/206	89.3	86.2	80.7–91.1	
Proportion of FSW tested for STIs in the past three months	98/286	34.3	36.4	32.8–40.0	
Proportion of FSW diagnosed by a doctor or medical professional to have had an STI in the past 12 months	53/287	18.5	19.1	15.0–23.2	
Proportion of FSW who have had an abnormal discharge from the vagina in the past 12 months	92/284	32.4	33.0	28.2–37.8	
Proportion of FSW who had an abnormal discharge from the vagina in the past 12 months and sought treatment	61/92	66.3	65.9	53.2–78.6	
Type of treatment received for abnormal discharge in the past 12 months among FSW who sought treatment (multiple answers possible)	Injection	21/61	34.4	34.3	22.5–46.2
	Tablets	50/61	82.0	82.0	72.2–91.7
	Cream	5/61	8.2	8.0	2.6–13.4
Reasons for not seeking treatment for abnormal discharge in the past 12 months among FSW who did not seek treatment (multiple answers possible)	Didn't know where to go	11/32	35.5	38.4	14.0–64.6
	Didn't think I needed it	3/32	9.7	8.9	5.4–12.3
	Unable to get transport	3/32	9.7	9.3	5.1–13.0
	Could not afford	16/32	51.6	47.2	20.5–72.2
	Other	1/32	3.2	3.2	1.5–5.2
Proportion of FSW who have had a sore or ulcer in the genital area in the past 12 months	23/278	8.3	7.6	0.5–10.6	
Proportion of FSW who had a sore or ulcer in the genital area in the past 12 months and sought treatment	13/23	56.5	55.6	21.6–89.4	
Type of treatment received for sore or ulcer in the genital area the past 12 months among FSW who sought treatment (multiple answers possible)	Tablets	9/13	69.2	68.0	52.9–83.3
	Injection	3/13	23.1	22.7	9.9–35.4
	Cream	2/13	15.4	16.9	16.0–16.9
Reasons for not seeking treatment for sore or ulcer in the genital area in the past 12 months among FSW who did not seek treatment (multiple answers possible)	Didn't think I needed it	1/10	10.0	10.3	10.0–10.3
	Didn't know where to go	5/10	50.0	45.7	44.6–45.7
	Couldn't afford treatment	2/10	20.0	9.5	6.8–9.5
	Other	1/10	10.0	10.3	10.0–10.3
	Don't know	2/10	20.0	29.0	29.0–31.0

3.1.7. Knowledge on transmission of HIV and STI

There is varied knowledge among FSW regarding specific indicators of knowledge on HIV prevention and transmission. For instance, the majority of FSW (80.8%) know that a healthy-looking person can have HIV and AIDS, whereas only 24.1 per cent know that one cannot get HIV from mosquito bites. Importantly, only 8.2 per cent can correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission. Although most FSW (89.2%) know HIV can be transmitted from mother to her baby by breastfeeding, only 29.3 per cent know that antiretroviral treatment during pregnancy can reduce the risk of HIV transmission from HIV-positive mother to the child, as shown in Table 7.

Table 7: Knowledge on transmission of HIV and STI among Mogadishu FSWs

Characteristic	Response	Sample proportions		Population estimates	
		n/N	%	%	95% confidence interval
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	217/287	75.6	76.0	71.0–80.8
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	147/287	51.2	51.5	46.3–56.7
It is possible for a healthy-looking person to have HIV/AIDS	Yes	227/287	79.1	80.8	76.9–84.8
People can get HIV from mosquito bites	No	66/287	23.0	24.1	19.0–29.3
People can get HIV by sharing food with a person who has HIV/AIDS	No	135/287	47.0	46.3	40.7–51.7
Have heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	128/287	43.2	40.8	35.1–46.6
HIV can be transmitted from mother to her baby during pregnancy	Yes	201/287	70.0	71.1	66.1–76.1
HIV can be transmitted from mother to her baby during delivery	Yes	199/287	69.3	69.9	64.7–75.2
HIV can be transmitted from mother to her baby by breastfeeding	Yes	255/287	88.9	89.2	85.9–92.5
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	87/287	30.3	29.3	24.2–34.4
GARPR 3.4: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	18/287	6.3	8.2	4.5–12.1

3.1.8. General sexual history

The first time FSW in Mogadishu had vaginal sex, they were on average 16.3 years old. In fact, a significant majority (77.3%) were younger than 18 years of age at first vaginal sex. Few FSW (11%) have also had anal sex. The average age at which most FSW first received money, a gift (like khat) or favour in exchange of sexual intercourse is 23.4 years. Most of the FSW meet their new transactional clients and engage in sex in their own homes. One fifth (20.2%) of FSW work through pimps, who in most cases take one third (61.2%) of the money FSW earn by selling sex, as shown in Table 8.

Table 8: General sexual history of Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Age at first vaginal sex	Range	10–43			
	Mean	16.4			
	Median	15			
	SD	4.4			
	< 18 years old	224/287	78.0	77.3	72.7–82.0
	18–24 years old	49/287	17.1	16.6	12.3–20.8
	25 years old or older	14/287	4.9	6.0	3.1–9.1
Had anal sex	27/287	9.4	11.0	6.8–15.3	
Age at first anal sex	Range	13–31			
	Mean ± SD	20.0 ± 5.0			
	Median	19			
	<25 years old	22/27	81.5	87.0	61.1–92.1
	25+ years old	5/27	18.5	13.0	0–29.9

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Age at which she first received money, a gift (like khat) or favour in exchange of sexual intercourse	Range	12–46		23.4 ± 6.5	
	Mean ± SD	23.4 ± 6.6		22.0	
	Median	22.0			
	< 18 years old	50/287	17.4	17.7	13.3–22.1
	18–24 years old	120/287	41.8	42.3	37.0–47.6
	25 years old or older	117/287	40.8	40.1	35.1–45.0
Reasons that led to exchange sex for money the first time (multiple answers possible)	Orphan	11/287	3.8	4.0	1.7–6.2
	Didn't have other job	155/287	54.0	52.8	47.0–58.5
	Grew up around people doing sex work	10/287	3.5	2.6	1.1–4.1
	I like it or for pleasure	3/287	1.0	1.0	0–2.4
	Abandoned by husband	3/287	1.0	0.6	0–1.2
	Abandoned by parents or siblings	4/287	1.4	1.0	0.2–1.8
	Encouraged by friends	7/287	2.4	2.2	1.0–3.5
	Pays well	1/287	0.3	0.3	0–0.7
	I needed money	115/287	40.5	41.8	36.7–46.8
	Other	1/287	0.3	0.3	0–0.8
Total number of different sexual partners who she had sexual intercourse with in the past one month	Range	1–60			
	Mean	11.6 ± 9.6			
	Median	8.0			
	< 5	57/287	19.9	18.2	14.1–22.4
	5–10	131/287	45.6	47.5	41.7–53.2
	11–20	60/287	20.9	21.2	16.5–26.0
	More than 20	39/287	13.6	13.1	9.3–16.8
Where most new transactional sex clients are met	At client's home	34/287	11.8	12.9	8.6–17.3
	At FSW's home	161/287	56.1	54.9	49.0–60.8
	Beach	4/287	1.4	1.0	0–2.2
	Hotel or restaurant	12/287	4.2	4.8	2.0–7.5
	They call me	71/287	24.7	24.9	19.8–30.1
	Through pimps or <i>dalals</i>	5/287	1.7	1.4	0.2–2.5
Place where FSW and client engage in transactional sex	At home she shares with family	171/287	59.6	58.8	53.6–64.1
	At home she shares with other FSWs	37/281	12.9	12.3	8.7–15.9
	Hotel or restaurant	11/287	3.8	4.7	2.2–7.2
	Khat shop	1/287	0.3	0.3	0–0.8
	Car or vehicle	1/287	0.3	0.3	0–0.8
	The client's house	66/287	23.0	23.5	18.9–28.2
Working through a pimp		61/287	21.3	20.2	15.8–24.7
Sharing the money earned from sexual transaction with the pimp		51/60	85.0	84.3	70.4–98.0
Amount shared/given out to the other person	One third	32/50	64.0	61.2	46.4–75.0
	Half	14/50	28.0	30.5	18.1–44.3
	Two thirds	2/50	4.0	5.6	0–16.1
	More than two thirds	2/50	4.0	2.6	1.3–3.0

3.1.9. Sexual history with paying clients

A quarter (23.1%) of FSW used a male condom at their last sexual intercourse with a client, and in most cases (57.3%) it was the clients suggesting condom use. Importantly, only 12.3 per cent of FSW have used condoms consistently in the past 30 days, with as much as 67.3 per cent having never used condoms with clients in the past 30 days. Most FSW who did not use a condom at last sex with a client did so because they do not like condoms. On the last day they worked, FSW on average sold sex to two to three clients, earning an average of USD 6.4 for last sexual intercourse with a client, as shown in Table 9.

Table 9: Sexual history of Mogadishu FSWs with paying clients

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
GARPR 3.6A: Proportion who used a condom at last sexual intercourse with a client		64/287	22.3	23.1	18.3–27.8
Type of condom used	Male condom	64/64	100	100	100
Person who suggested condom use at last sexual intercourse	Client	39/64	60.9	57.3	39.9–73.8
	FSW	25/64	39.1	42.7	26.2–60.1
Reason for not using a condom at last sexual intercourse	Used other contraceptive	1/223	0.4	0.3	0–0.7
	We didn't have	28/223	12.6	13.0	8.8–17.2
	I don't like them	113/223	49.8	48.7	42.0–55.2
	Client objected	2/223	0.9	0.7	0–1.5
	Didn't think it was necessary	17/223	7.3	9.2	4.7–13.8
	Didn't think of it	24/223	10.3	9.7	6.1–13.1
	Don't know where to buy	6/223	2.6	3.4	1.0–5.8
	Condoms transmit HIV	24/223	10.3	10.9	7.0–14.8
	Too expensive	1/223	0.4	0.8	0–2.1
	Don't know	9/223	4.0	3.9	1.7–6.1
Consistent condom use with clients during the last 30 days (1 month)	Every time	36/287	13.1	12.3	8.5–16.1
	Almost every time	19/287	6.6	6.4	3.8–9.1
	Sometimes	38/287	13.9	13.9	9.5–18.4
	Never	181/287	66.1	67.3	62.2–72.4
Number of clients on the last day worked	Range	1–12		2.5 ± 1.5	
	Mean	2.5 ± 1.3		2.0	
	Median	2.0			
	1	52/287	18.1	17.4	13.3–21.5
	2	119/287	41.5	43.4	37.5–49.4
Amount of money received for last sexual intercourse with a client (in USD)	3	71/287	24.7	24.7	19.6–29.7
	4 or more	45/287	15.7	14.5	11.1–17.9
	Range	0–50		6.4 ± 5.8	
	Mean ± SD	6.5 ± 5.4		5.0	
	Median	5.0			
	0	1/287	0.3	0.3	0–0.8
	1–5	162/287	56.1	57.3	51.9–62.8
6–10	94/287	32.8	30.7	26.0–35.4	
Typical occupations of clients (multiple answers possible)	11–20	27/287	9.4	10.2	6.4–14.1
	More than 20	4/287	1.4	1.4	0.5–2.4
	Businessman	33/287	11.5	11.5	7.8–15.1
	Truck driver	68/287	23.7	22.4	17.9–26.9
	Government worker	6/287	2.1	2.1	0.4–3.8
	Fishermen	4/287	1.4	1.2	0–2.5
	Police	10/287	3.5	2.9	1.2–4.7
	Port worker	10/287	3.5	3.2	1.4–4.9
	Tea client	3/287	1.0	1.2	0–2.5
	Khat client	10/287	3.5	3.5	1.5–5.6
Unemployed	2/287	0.7	0.8	0–1.8	
	Khat seller	78/287	27.2	28.3	23.6–33.1
	Humanitarian worker	1/287	0.3	0.1	0–0.2
	Military	7/287	2.4	2.0	0.8–3.3
	Manual labourer	7/287	30.3	30.8	25.3–36.4
	Don't know	34/287	11.8	13.0	9.2–16.9

Characteristic	Sample proportions			Population estimates	
	n/N		%	%	95% confidence interval
Most common occupation among clients	Businessman	31/287	12.8	9.4	6.4–12.4
	Fishermen or seafarer	1/287	0.3	0.6	0–1.4
	Government worker	3/287	1.0	1.1	0–2.3
	Khat client	9/287	3.1	3.1	1.3–4.9
	Khat seller	56/287	19.5	20.4	16.1–24.7
	Military	2/287	0.6	0.6	0–1.2
	NGO worker	1/287	0.3	0.1	0–0.2
	Police	4/287	1.4	1.6	0–3.2
	Port worker	5/287	1.7	1.5	0.4–2.6
	Tea client	3/287	1.0	1.3	0.1–2.4
	Truck driver	49/287	17.1	17.6	20.1–30.2
	Manual labourer	78/287	27.2	25.1	13.3–21.9
	Unemployed	1/287	0.3	0.3	0–0.9
	Don't know	44/287	15.3	15.2	11.1–19.3

3.1.10. Sexual history with non-paying partners

About half of FSW (55.3%) in Mogadishu had a sexual intercourse in the last 30 days with a non-paying partner. As with condom use with transactional clients (23.1%), condom use with non-paying partners is as well low, with only 24.7 per cent having used a condom at last sexual intercourse with a non-paying partner in the last 30 days. Furthermore, among those who have used a condom at last sex with a non-paying partner, in most cases, it was not the FSW but the partner who suggested condom use, as shown in Table 10.

Table 10: Sexual history of Mogadishu FSWs with non-paying partners

Characteristic	Sample proportions			Population estimates	
	n/N		%	%	95% confidence interval
Had sexual intercourse with a non-paying partner over the last 30 days (1 month)		152/287	53.0	55.3	49.0–61.4
Number of sexual intercourses with non-paying partners over the last 30 days (1 month) (among those who had a non-paying partner in the last 30 days)	Range	1–20			
	Mean	4.4 ± 3.6			
	Median	3.0			
	1	20/152	13.2	12.2	0–17.1
	2–5	102/152	67.1	67.2	59.2–75.1
	More than 5	30/152	19.7	20.7	13.9–27.7
Condom use during last non-paying/non-transactional sexual intercourse with partner (among those who had a non-paying partner in the last 30 days)		36/151	23.8	24.7	17.8–31.6
Person who suggested condom use during last non-paying/non-transactional sexual intercourse with partner (among those who had a non-paying partner in the last 30 days)	Partner	26/36	72.2	76.7	66.6–89.1
	FSW	10/36	27.8	23.3	11.0–33.5
Reason for not using condom during last non-transactional sexual intercourse (among those who had a non-paying partner in the last 30 days)	Didn't think it was necessary	11/126	8.7	8.8	3.6–13.8
	Didn't think of it	18/126	14.3	15.5	9.6–21.5
	Didn't know where to buy one	3/126	2.4	1.8	0–3.9
	Don't like them	57/126	45.2	46.5	34.3–59.0
	Condoms transmit HIV	5/126	4.0	3.4	0.2–6.5
	Too expensive	1/126	0.8	0.7	0–2.3
	Used other contraceptives	3/126	2.4	3.3	2.9–3.9
	Did not have one with them	21/126	16.7	15.6	9.7–21.1
	Other	5/126	4.0	3.5	0.3–6.6
	Don't know	2/126	1.6	1.0	0–2.3

3.1.11. Availability and use of male condoms

Although the majority of FSW (91.6%) in Mogadishu had heard of or seen a male condom, among them, only nearly one third (32.4%) had ever used it. A pharmacy is the most preferred (58.4%) ideal place to obtain male condoms. Even though 14.9 per cent of FSW had received counselling on condom use three months prior to this survey, only 4.6 per cent had received condoms (e.g. through an outreach service, hospital, VCT centre, tuberculosis (TB) centres, NGO, pharmacy, family planning (FP) clinic, MCH) in the past three months. Most FSWs (86.3%) perceive male condoms to be affordable as shown in Table 11.

Table 11: Availability and use of male condom among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence Interval	
Ever heard of a male condom before today	261/287	90.9	91.6	88.6–94.6	
Ever used a male condom	86/261	33.0	32.4	27.3–37.5	
Know place or person where to obtain male condoms	131/261	50.2	51.7	46.6–56.9	
Places or persons she knows where she can obtain male condoms (multiple answers possible)	Pharmacy	115/131	87.8	85.0	76.7–92.4
	Private hospital or clinic	1/131	0.8	1.3	0.8–1.8
	Public hospital	8/131	6.1	8.3	4.0–13.2
	MCH centre	5/131	3.8	4.5	1.1–8.0
	Friend	4/131	3.1	3.8	0.5–7.2
	Clients	6/131	4.6	5.0	1.5–8.5
	Local NGO	1/131	0.8	0.7	0.5–0.9
	Shop	1/131	0.8	0.7	0–1.7
Ideal place to obtain male condoms	Client	16/168	9.5	8.0	0.3–12.3
	Friend	11/168	6.5	7.5	3.5–11.7
	MCH centre	7/168	4.2	7.0	2.7–12.3
	Other sex worker	1/168	0.6	0.5	0.4–0.7
	Pharmacy	101/168	60.1	58.4	51.4–65.2
	Private hospital/clinic	5/168	3.0	3.8	0–7.8
	Public hospital	20/168	11.9	12.7	8.5–17.1
	Shop	6/168	3.6	3.0	0–6.4
Usually carry condoms with her	60/258	23.3	23.3	18.7–28.0	
Received condoms (e.g. through an outreach service, hospital, VCT centre, TB centres, NGO, pharmacy, FP clinic, MCH) in the past three months	9/255	3.5	4.6	1.7–7.5	
Received counselling on condom use and safe sex in the past three months	32/251	12.7	14.9	10.1–19.7	
Person who usually supplies the condoms	Client	57/260	21.9	22.2	17.1–27.3
	I never use a condom	117/260	68.1	68.4	62.9–73.9
	FSW	26/260	10.0	9.4	6.1–12.7
Affordability of male condoms	Affordable	126/261	48.3	48.9	42.9–54.9
	Somewhat affordable	16/261	6.1	6.0	3.5–8.5
	Not affordable	5/261	1.9	1.7	0–3.7
	Don't know	114/261	43.7	43.4	37.8–48.9

3.1.12. Availability and use of female condoms

Generally, much fewer FSW in Mogadishu have ever seen, heard or used a female condom compared to the male condom. Among those who have (28.3%), only about a quarter (25.8%) know where to obtain them, and only 15.1 per cent had ever used it, as shown in Table 12.

Table 12: Availability and use of female condom among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Ever heard of a female condom before today	80/287	27.9	28.3	22.9–33.7	
Ever used a female condom	11/80	13.8	15.1	4.9–25.5	
Knows place or person where to obtain female condoms	21/80	26.2	25.8	15.6–36.0	
Places or persons do you know where she can obtain female condoms	Friend	1/21	4.8	8.4	0–29.5
	Shop	2/21	9.5	9.1	5.3–13.1
	MCH centre	1/21	4.8	3.3	1.6–4.3
	Pharmacy	16/21	76.2	71.0	51.2–88.6
	Local NGO	1/21	4.8	3.3	1.4–4.5
	Private hospital	3/21	14.3	19.9	5.1–36.6

3.1.13. Population size estimation

Using SS-PSE method, the network size information of individual FSW participants was entered into RDS Analyst to generate measures of central tendency to represent population size estimates. Therefore, the mean, median and mode FSW population estimate in Mogadishu is 706, 610 and 512 respectively. Although the findings of size estimation using SS-PSE are higher, this closely approximates population size estimates generated in 2016 indicating 963 as the average FSW estimate in Mogadishu (IOM, 2016). However, when using wisdom of the crowd method, much lower estimates were generated. The mean FSW estimate in Mogadishu using wisdom of the crowd method is 8.7 with a standard deviation of 15.9 while ranging from 1 to 200 FSW. When asked by the coupon manager regarding their FSW network size, the average number of FSW they knew by name and knew them to have had sex in the last 12 months in exchange for money, gifts or favour was 5.1 FSW, while the minimum was 1 and maximum was 50 FSW.

3.1.14. HIV testing history and avoidance of HIV services

Very few FSW (21.9%) in Mogadishu know where to go for an HIV test, and even fewer (11.6%) know their HIV status from an HIV test. Overall, 36.9 per cent of FSW in Mogadishu avoid HIV services most often because of stigma and discrimination, as shown in Table 13.

Table 13: HIV testing history and avoidance of HIV services among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Knows where to go for a confidential HIV test	63/287	22.0	21.9	16.5–27.2	
Known places where one can get tested for HIV (multiple answers possible)	Government hospital	34/63	54.0	51.7	37.0–65.2
	MCH centre	9/63	14.3	17.2	0–40.3
	Pharmacy	1/63	1.6	1.5	0–3.7
	Government TB centre	2/63	3.2	5.6	3.1–9.0
	Government VCT	7/63	11.1	14.4	0–31.8
	Mobile counselling	6/63	9.5	15.6	6.0–27.3
	Private facility	18/63	28.6	30.3	19.1–42.3
	NGO	2/63	3.2	4.3	0–10.4
Knows her HIV status from an HIV test	35/287	12.2	11.6	8.2–15.1	
Last tested for HIV	Less than 6 months	25/35	71.4	71.0	56.7–85.2
	6–12 months	4/35	11.4	10.9	4.2–17.2
	More than 12 months	6/35	17.1	18.1	7.7–28.9

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
HIV test result at last HIV test	Positive	3/35	8.6	5.1	0–10.0
	Negative	32/35	91.4	94.9	90.0–94.9
Voluntarily had the HIV test, or was required to have the test	Required	12/35	34.3	37.8	22.2–55.3
	Voluntary	23/35	65.7	62.2	44.7–77.8
Proportion who revealed to the health provider that they sell sex during their most recent HIV counselling/testing		12/35	34.3	37.2	22.3–53.3
Reasons for having never sought for an HIV test	Fear/concern about violence	33/252	13.1	13.2	9.3–17.1
	Fear/concern about stigma	61/252	24.3	24.2	18.9–29.4
	I don't know where to go for HIV test	66/252	26.3	25.9	20.2–31.6
	Fear/concern about police harassment	9/252	3.6	3.5	1.2–5.9
	Other	43/252	17.1	18.1	12.4–24.0
	I don't know	39/252	15.5	15.0	10.4–19.7
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations		103/287	35.9	36.9	31.2–42.6

3.1.15. Stigma and discrimination related to HIV and AIDS

FSW in Mogadishu experience varied forms of stigma and discrimination. Many FSW (41.6%) experience verbal insults directed at them because someone believed they sell sex to men. In addition, 13.1 per cent and 13.5 per cent of FSW in Mogadishu have been refused employment and police assistance respectively due to their sex work as shown in Table 14.

Table 14: Stigma and discrimination related to HIV and AIDS among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Have been refused health care in the past 12 months because someone believed she sells sex to men	18/287	6.3	7.3	6.1–8.4	
Have been refused employment in the past 12 months because someone believed she sells sex to men	34/287	11.8	13.1	9.6–16.6	
Have been refused to attend prayers at the mosque in the past 12 months because someone believed she sells sex to men	14/287	4.9	7.0	5.7–8.3	
Have been refused housing in the past 12 months because someone believed she sells sex to men	36/287	12.5	12.9	8.7–17.2	
Have been refused police assistance in the past 12 months because someone believed she sells sex to men	38/287	13.2	13.5	9.0–17.9	
Have had verbal insults directed at her in the past 12 months because someone believed she sells sex to men	111/287	38.7	41.6	36.9–46.4	

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Person who last directed a verbal insult at her	Client	9/111	3.1	8.2	3.6–12.9
	Didn't know the person	26/111	9.1	22.5	14.1–30.8
	Family or relative	12/111	4.2	9.1	4.1–13.5
	Other sex worker	3/111	1.0	1.2	0–1.9
	Police	3/111	1.0	3.7	0.5–7.1
	Social acquaintance	19/111	6.6	16.0	10.3–21.4
	Neighbour	39/111	13.6	39.3	30.3–49.5

3.1.16. Physical and sexual violence in the previous year

Many FSW (25.3%) in Mogadishu have been hit, kicked or beaten because someone believed they sell sex to men. This has mainly been perpetrated by male clients (53.2%). In addition, 26.8 per cent of FSW have been physically forced to have sexual intercourse against their will, again mostly by their clients (90.1%). However, among those who have been raped, only slightly over one third (40.1%) have sought medical treatment, and only 27.6 per cent reported the cases to police. In addition, many FSW have also experienced other forms of violence from their partners and clients, in particular, they have been threatened into having a sexual intercourse (36.7%), threatened with a weapon (32.6%), slapped (32.9%) and pushed or shoved (26.7%), as shown in Table 15.

Table 15: Physical and sexual violence among Mogadishu FSWs

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Have been hit, kicked or beaten in the past 12 months because someone believed they sell sex to men		73/285	25.6	25.3	21.1–29.4
Person who last hit, kicked or beat her	Client	36/72	50.0	53.2	40.4–67.2
	Family or relative	3/72	4.2	3.8	2.7–4.7
	Other sex worker	2/72	2.8	2.8	0–7.0
	Don't know the person	13/72	18.1	14.4	5.9–21.4
	Police	2/72	2.8	5.1	0.6–10.3
	Other	8/72	11.1	10.3	0–21.8
A client or partner physically forced her to have sexual intercourse against her will in the past 12 months		81/284	28.5	26.8	21.1–32.6
Person who physically forced her to have sexual intercourse against her will	Client	70/81	86.4	90.1	87.5–96.4
	Don't know the person	4/81	4.9	2.7	0.6–4.0
	Family or relative	1/81	1.2	1.2	0–2.8
	Other sex worker	2/81	2.5	1.2	0.4–1.5
	Police	1/81	1.2	0.3	0–0.5
	Social acquaintance	3/81	3.7	3.4	0–7.1
Proportion who sought medical treatment after being physically forced to have sexual intercourse against her will		29/80	36.2	40.1	28.6–52.8
Proportion who reported this incident to the police		19/74	25.7	27.6	17.4–38.4
Reasons for not reporting this incident to the police	Embarrassing to report	1/55	1.8	0.8	0.3–1.1
	Feared the police	28/55	50.9	46.3	31.8–58.5
	Didn't know she should inform police	4/55	7.3	5.8	1.1–10.0
	Forgave the perpetrator	14/55	25.5	32.6	20.5–48.1
	Perpetrator ran away				
	Police want money she doesn't have	4/55	7.3	9.2	0–23.3
	Police won't do anything after reporting	1/55	1.8	1.9	0–4.6
	3/55	5.5	3.1	0–5.2	

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
In the past 12 months, a client or partner slapped her or threw something that could hurt her	100/286	35.0	32.9	27.8–38.1	
Proportion pushed or shoved by a client or partner in the past 12 months	83/285	29.1	26.7	21.0–32.4	
In the past 12 months, a client or partner hit her with a fist or something else that could hurt her	86/283	30.4	29.5	23.9–35.2	
Proportion kicked, dragged or beat up by a client or partner in the past 12 months	67/282	23.8	24.6	19.2–29.9	
Proportion choked or burned by a client or partner in the past 12 months	48/285	16.8	16.9	9.7–24.2	
Proportion whose client or partner threatened or used a gun, knife or other weapon against them in the past 12 months	92/282	32.6	32.6	27.7–37.5	
Proportion forced by client or partner in the past 12 months to do something sexual she found degrading or humiliating	73/282	25.9	25.7	19.8–31.5	
Proportion whose client or partner in the past 12 months made them afraid of what would happen if they did not have sexual intercourse	105/284	37.0	36.7	31.7–41.7	

3.1.17. Programme coverage

Overall, the coverage of HIV prevention programmes (measured as receiving at least two interventions in the past three months) among FSW in Mogadishu is very low (6.7%). Very few FSW (15%) in Mogadishu are aware of local NGOs that deliver non-medical assistance or advice to FSW, and only 6.1 per cent of FSW have attended meeting(s) to discuss STI or HIV and AIDS, as shown in Table 16.

Table 16: Programme coverage among Mogadishu FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Proportion aware of local NGOs that deliver non-medical assistance or advice to FSW	43/286	15.0	15.0	10.3–19.8	
Attended meeting(s) to discuss STI or HIV/AIDS during the last 12 months	13/274	4.7	6.1	5.0–7.3	
Services/items received from an outreach worker in the past 12 months (multiple answers possible)	Condom	7/287	2.4	3.1	0.8–5.4
	Pamphlets	12/287	4.2	5.4	2.3–8.4
	Referral to STI screening and treatment	4/287	1.4	2.1	0–4.0
	Referral to HIV counselling and testing	8/287	2.8	4.0	1.3–6.7
	Lubricants	5/287	1.7	1.8	0.6–3.1
	Other	1/287	0.3	0.3	0–0.9
None	256/287	89.2	86.9	82.8–91.1	
Proportion of referred FSW who went to referred site to receive medical care	5/7	71.4	79.0	55.1–84.4	

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Given condom in the past three months	9/255	3.5	4.8	3.4–6.3	
Received counselling on condom use and safe sex in the past three months	32/251	12.7	15.0	10.2–19.9	
Tested for STIs in the past three months	98/286	34.3	36.4	32.8–40.0	
GARPR 3.7 Coverage of HIV prevention programmes among key populations	14/287	4.9	6.7	3.6–9.8	

3.1.18. Alcohol and drug use in the past three months

One quarter of the FSW in Mogadishu consume alcohol, and they drink mostly on a monthly basis (12.6%). Contrary, 95 per cent of FSW have consumed khat in the three months prior to this survey, with half of them consuming it four or more times a week. Other drugs and substances consumed include marijuana or hashish (48.5%), cigarette smoking (95.9%) and shisha smoking (73.8%). Few have also in the previous three months injected drugs (6%) and among them, about half (49.1%) of them have used a sterile needle and syringe last time they injected drugs.

Table 17: Alcohol and drug use among Mogadishu FSWs in the past three months

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	4 or more times a week	4/287	1.4	1.8	0–3.6
	2–3 times a week	5/287	1.7	1.6	0.2–3.0
	2–4 times a month	27/287	9.4	9.6	5.9–13.2
	Monthly or less	38/287	13.2	12.6	8.9–16.2
	Never	213/287	74.2	74.6	69.0–80.2
Frequency of chewing khat during the past three months	4 or more times a week	149/286	52.1	50.0	44.0–55.8
	2–3 times a week	45/286	15.7	17.4	12.8–22.1
	2–4 times a month	61/286	21.3	22.0	17.6–26.3
	Monthly or less	16/286	5.6	5.6	3.0–8.2
	Never	15/286	5.2	5.0	0.3–7.1
Frequency of smoking marijuana or hashish during the past three months	4 or more times a week	33/287	11.5	13.2	8.4–18.0
	2–3 times a week	29/287	10.1	10.1	6.8–13.4
	2–4 times a month	42/287	14.6	14.8	10.6–19.1
	Monthly or less	28/287	9.8	10.4	6.9–14.0
	Never	155/287	54.0	51.5	45.6–57.3
Frequency of smoking cigarette during the past three months	4 or more times a week	153/287	53.3	51.6	45.9–57.4
	2–3 times a week	71/287	24.7	24.4	19.3–29.5
	2–4 times a month	44/287	15.3	17.6	13.5–21.8
	Monthly or less	7/287	2.4	2.3	0.6–4.0
	Never	12/287	4.2	4.1	1.8–6.3
Frequency of smoking shisha during the past three months	4 or more times a week	70/287	24.4	20.3	21.2–30.6
	2–3 times a week	58/287	20.2	21.9	15.6–24.9
	2–4 times a month	68/287	23.7	25.9	17.3–26.6
	Monthly or less	16/287	5.6	5.7	3.0–8.4
	Never	75/287	26.1	26.2	21.2–31.2
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette	151/284	53.2	55.0	50.8–59.2	
Frequency of injecting drugs during the past three months	4 or more times a week	2/287	0.7	1.2	0–2.8
	2–3 times a week	2/287	0.7	0.9	0–2.2
	2–4 times a month	6/287	2.1	2.6	0.7–4.5
	Monthly or less	3/287	1.0	1.3	0.1–2.4
	Never	274/287	95.5	94.0	91.2–96.8

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Type of drug injected	Cocaine	5/13	38.5	35.0	9.5–59.8
	Heroin	7/13	53.8	55.0	27.5–82.7
	Methamphetamine	1/13	7.7	10.0	0–30.3
Proportion use of a sterile needle and syringe during last injectable drug use (IDU)		5/10	50.0	49.1	26.1–72.1
Shared a syringe or needle with anyone else when injecting drugs in the last three months		3/10	30.0	31.7	31.7–31.8
Received new, clean needles or syringes in the past three months		3/10	30.0	24.2	23.5–24.2

3.1.19. Sociodemographic correlates of safer HIV-related behaviour among FSW in Mogadishu

Finally, multivariable analyses were used to identify sociodemographic correlates of safer HIV-related behaviour, specifically, condom use at last transactional sex, knowledge of HIV status from an HIV test in the past 12 months, and HIV composite knowledge. FSWs who currently earn money doing other work other than sex work were three times more likely (adjusted odds ratio (aOR) = 2.9, 95% confidence interval = 1.5 – 5.5) to have used a condom during last transactional sex than those FSW who earn money only through sex work, as shown in Table 18. In addition, FSW who have no education were 60 per cent less likely (aOR = 0.4, 95% confidence interval = 0.2 – 1.0) to know their HIV status from an HIV test than FSW with some education. Furthermore, FSW who have been living in Mogadishu for two years or more were 80 per cent less likely (aOR = 0.2, 95% confidence interval = 0.08 – 0.6) to know their HIV status from an HIV test than FSW who have lived in Mogadishu for a shorter time, as shown in Table 19. Finally, FSW who earn money doing work other than sex work and those with no education had higher odds of having answered correctly to all five questions regarding HIV-related knowledge (aOR = 1.4, 95% confidence interval = 0.6 – 1.5 and aOR = 3.4, 95% confidence interval = 1.3 – 3.9, respectively), as presented in Table 20.

Table 18: Factors associated with condom use at last sex with a client (transactional sex) among Mogadishu FSWs

	Response	Condom use at last transactional sex		aOR (95% confidence interval)	P-value
		n/N	%		
Age	25+	50/228	21.9	0.5 (0.3–1.0)	0.07
	<25	14/59	23.7	1.0	
Level of education	None	52/247	21.1	0.5 (0.3–1.0)	0.07
	Some education	12/40	30.0	1.0	
Overall monthly household income	< 100	31/167	18.6	1.0	0.07
	>=100	33/120	27.5	1.7 (1.0–2.9)	
Marital status	Single	2/11	18.2	1.1 (0.2–4.8)	0.95
	Never married	62/276	22.5	1.0	
Number of people she is currently supporting	0–5	35/183	19.1	0.7 (0.4–1.2)	0.19
	>5	29/104	27.9	1.0	
Length of stay in Hargeisa	Less than 2 years	5/13	38.5	1.0	0.04
	More than 2 years	59/274	21.5	0.4 (0.1–1.0)	
Currently earn money doing work other than sex work	Yes	17/47	36.2	2.9 (1.5–5.5)	0.001
	No	47/240	19.6	1.0	

Note: **Bold P-value:** Statistically significant.

Table 19: Factors associated with having an HIV test in the past 12 months and knowing the result among Mogadishu FSWs

	HIV test in the past 12 months and knowing the result		Adjusted OR (95% CI)	P-value
	n/N	%		
Total	29/287	10.1		
Age				
25+	24/228	21.9	1.5 (0.5–4.7)	0.5
<25	5/59	8.5	1.0	
Level of education				
None	21/247	8.5	0.4 (0.2–1.0)	0.04
Some education	8/40	20.0	1.0	
Overall monthly household income				
< 100	14/167	8.4	1.0	
≥100	15/120	12.5	1.5 (0.7–3.3)	0.3
Marital status				
Single	2/11	18.2	4.4 (1.0–19.9)	0.06
Never married	27/276	9.8	1.0	
Number of people she is currently supporting				
0–5	18/183	9.8	1.0	0.2
>5	11/104	10.6	0.6 (0.3–1.4)	
Length of stay in Mogadishu				
Less than two years	4/13	30.7	1.0	
More than two years	25/274	9.1	0.2 (0.08–0.6)	0.003
Currently earn money doing work other than sex work				
Yes	6/47	12.8	1.6 (0.7–4.1)	0.2
No	23/240	9.6	1.0	

Note: Bold P-value: Statistically significant.

Table 20: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission among Mogadishu FSWs

	Preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission		Adjusted OR (95% confidence interval)	P-value
	n/N	%		
Total	18/287	6.3		
Age				
25+	14/228	6.1	9.0 (2.8–2.9)	0.9
<25	4/59	6.8	1.0	
Level of education				
None	13/247	5.3	3.4 (1.3–3.9)	0.04
Some education	5/40	12.5	1.0	
Overall monthly household income				
< 100	10/167	6.0	1.0	0.3
≥100	8/120	6.7	1.6 (1.1–4.2)	
Marital status				
Single	0/11	0	6.7 (2.3–6.7)	0.001
Never married	18/276	6.5	1.0	
Number of people she is currently supporting				
0–5	11/183	6.0	1.9 (1.6–5.3)	0.2
>5	7/104	6.7	1.0	

	Preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission		Adjusted OR (95% confidence interval)	P-value
	n/N	%		
Length of stay in Mogadishu				
Less than two years	1/13	7.7	1.0	0.7
More than two years	17/274	6.2	7.3 (1.9–7.8)	
Currently earn money doing work other than sex work				
Yes	11/47	23.4	1.4 (0.6–1.5)	0.001
No	7/240	2.9	1.0	

Note: Bold P-value: Statistically significant.

3.2. Mogadishu uniformed personnel

3.2.1. Sociodemographic characteristics

A total of 287 uniformed personnel participated in the study. The average age of uniformed personnel in Mogadishu is 32.3 years with the majority (42%) of respondents aged 25 to 34 years. Most officers (39.2%) had secondary level of education, and nearly all of them (97.2%) had stayed in Mogadishu for more than two years. More than half (61%) are married with an average of 6.8 dependants. Fewer officers (2.9%) ever travel to neighbouring countries especially after three months as shown below in Table 21.

Table 21: Sociodemographic characteristics of Mogadishu uniformed personnel

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Age (years)	Mean ± SD	32.3 ± 11.3			31.1	33.7
	Range	18–70				
	< 25 years	75/287	26.1	25.1	20.3	30.6
	25+ years old	212/287	73.9	74.9	69.4	79.8
	18–24	75/287	26.1	25.1	20.3	30.6
	25–34	117/287	40.8	42.0	36.2	48.1
	35–44	46/287	16.0	17.3	13.1	22.6
	45 +	49/287	17.1	15.6	11.7	20.3
Category of uniformed personnel	Military officers	142/287	49.5	47.1	41.1	53.1
	Police officers	145/287	50.5	52.9	46.9	58.9
Education level	None	73/287	25.4	24.2	19.4	29.6
	Primary	90/287	31.4	31.7	26.4	37.6
	Secondary	110/287	38.3	39.2	33.4	45.3
	University/College	14/287	4.9	4.9	2.9	8.4
Nationality	Somalia	287/287	100.0	100	-	-
Length of stay in Mogadishu	Less than 7 days	1/287	0.4	0.4	0.0	2.5
	7–11 months	2/287	0.7	0.9	0.2	3.6
	1–2 years	6/287	2.1	1.6	0.6	4.0
	More than 2 years	287/287	96.9	97.2	94.3	98.6
Frequency of visiting his family	Daily	119/287	41.5	43.8	37.9	49.9
	Once in a week	93/287	32.4	32.7	27.2	38.6
	>Once in a week	25/287/287	8.7	9.4	6.4	13.7
	Once in a month	14/287	4.9	4.3	2.5	7.3
	Twice in a month	20/287	7.0	5.6	3.6	8.7
	Two–three months	5/287	1.7	1.2	0.5	2.9
	>Three months	11/287	3.8	3.0	1.6	5.5
Marital status	Married	176/287	61.3	61.0	54.9	66.8
	Separated	4/287	1.4	1.6	0.6	4.3
	Single	107/287	37.3	37.5	31.8	43.5

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of dependants	Mean ± SD Range	6.8 ± 3.2 0–19			6.4	7.1
Number of wives	1	142/176	80.7	81.9	75.1	87.2
	2	23/176	13.1	13.2	8.7	19.7
	3	9/176	5.1	3.9	1.9	7.9
	4	2/176	1.1	0.9	0.2	3.7
Frequency of visiting neighbouring countries	Never	275/287	95.8	97.1	94.6	98.5
	Monthly	1/287	0.4	0.4	0	2.5
	Every two–three months	3/287	1.1	0.6	0.2	2.2
	After > three months	8/287	2.8	1.9	0.9	4.2
Overall monthly income in USD	< 100	4/287	1.4	1.5	0.5	4.0
	100–499	273/287	95.1	95.2	91.9	97.2
	>= 500	10/287	3.5	3.4	1.8	6.3
	Mean ± SD Range	205.8 ± 107.1 30–1,000	-	-	193.3	218.2

3.2.2. HIV and syphilis prevalence

The overall prevalence of HIV and syphilis infection among uniformed personnel in Mogadishu is 0.2 per cent and 1.6 per cent respectively. None of the five syphilis infections was currently active as shown in Table 22. However, there was no HIV and syphilis comorbidity.

Table 22: HIV and syphilis prevalence among Mogadishu uniformed personnel

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
HIV	1/287	0.4	0.2	0	1.3
Syphilis – Ever infected	5/287	1.7	1.6	0.6	3.8
Syphilis – Active infection	0/287	0.0	-	-	-

3.2.3. Patterns of STI care and treatment seeking behaviour

Although nearly all uniformed personnel (98.9%) have heard of HIV and AIDS, only 8.1 per cent have heard of other STIs. While 30.5 per cent of uniformed personnel had received an STI test in the past three months, only 8.5 per cent have been diagnosed to have an STI 12 months prior to this survey. Contrastingly, only 0.8 per cent of uniformed personnel have experienced an abnormal discharge from the penis in the past 12 months prior to this study and sought STI treatment. In addition, only 0.3 per cent of uniformed personnel have had a sore or ulcer on or near the penis in the past 12 months prior to this survey and sought treatment as shown in Table 23.

Table 23: Patterns of STI care and treatment seeking behaviour among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of HIV/AIDS	Yes	283/287	98.6	98.9	96.9	99.6
Heard about other infections that can be transmitted through sex	Yes	28/287	9.8	8.1	5.4	11.9
Tested for sexually transmitted infections in the past three months	Yes	7/28	25.0	30.5	14.3	53.7
Diagnosed by a doctor or medical professional to have had a sexually transmitted infection in the past 12 months	Yes	3/28	10.7	8.5	2.4	25.5

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Had an abnormal discharge from the penis in the past 12 months	Yes	2/285	0.7	0.8	0.2	3.0
Had an abnormal discharge from the penis in the past 12 months and sought treatment	Yes	2/2	100	-	-	-
Had a sore or ulcer on or near penis or anus in the last 12 months		1/287	0.4	0.3	0	1.8
In the last 12 months, had a sore or ulcer on or near penis or anus and sought treatment	Yes	1/1	100	-	-	-
Type of treatment	Tablets	1/1	100	100	-	-

3.2.4. Knowledge of transmission of HIV and STI

There is varied knowledge among uniformed personnel on HIV prevention and transmission with 16.7 per cent (knowledge of the existence of special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby) as the lowest score to 92.8 per cent (people cannot get HIV by sharing food with a person who has HIV/AIDS) as the highest score. For instance, the majority of uniformed personnel know HIV can be transmitted from mother to baby during pregnancy (71.3%), delivery (87.5%) and breastfeeding (92.4%). In addition, 74 per cent know that a healthy-looking person can have HIV and AIDS, whereas less than half of them (82.8%) know that one cannot get HIV from mosquito bites. Nearly two thirds (64.2%) of uniformed personnel know that one can reduce their chance of getting HIV and STI by using a condom every time they have sex. The overall composite knowledge among uniformed personnel who correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is however low (34.5%) as shown in Table 24.

Table 24: Knowledge of transmission of HIV and STI among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	188/287	65.5	64.2	58.1	69.8
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	172/287	59.9	59.7	53.6	65.5
It is possible for a healthy-looking person to have HIV/AIDS	Yes	216/287	75.5	74.0	68.3	79.0
People can get HIV from mosquito bites	No	228/287	79.4	82.8	78.0	95.3
People can get HIV by sharing food with a person who has HIV/AIDS	No	266/287	92.7	92.8	89.0	95.3
Heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	100/287	34.8	31.5	26.3	37.3
HIV can be transmitted from mother to her baby during pregnancy	Yes	208/287	72.7	71.3	65.5	76.5
HIV can be transmitted from mother to her baby during delivery	Yes	250/287	87.4	87.5	82.9	95.1
HIV can be transmitted from mother to her baby by breastfeeding	Yes	266/287	92.7	92.4	88.2	95.1

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	51/287	17.8	16.7	12.7	21.6
GARPR 5.1: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	99/287	34.5	35.8	30.2	41.8

3.2.5. General sexual history

Nearly all uniformed personnel (85.3%) have had vaginal sex compared to only 1.2 per cent who have ever had anal sex. The average age at first vaginal sex among uniformed personnel in Mogadishu is 19.9 years compared to 20.0 years of anal sexual debut. Only 4.4 per cent of uniformed personnel have ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse while uniformed officer's houses being used as places to engage in transactional sex. More than one third of uniformed personnel meet their new transactional clients and engage in sex at the uniformed personnel's homes as shown in Table 25.

Table 25: General sexual history of Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have ever had vaginal sex with a woman	Yes	242/287	84.3	85.3	80.6	89.0
Age at first vaginal sex	Mean ± SD Median Range	19.9 ± 4.2 13–45			19.4	20.5
Ever had anal sex with a woman	Yes	3/287	1.1	1.2	0.4	3.6
Ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse	Yes	12/287	4.2	4.4	2.5	7.7
Number of different sexual partners in total he had sexual intercourse with in the past one month	Mean ± SD Range	1.7 ± 0.7 13			1.3	2.1
Where uniformed personnel meet most of their new transactional sex clients	At uniformed officer's home	7/12	58.3	63.0	30.0	87.1
	Hotel/Restaurant	3/12	25.0	25.5	6.6	62.1
	Other	2/12	16.7	11.6	2.2	43.9
Where uniformed personnel most often engage in transactional sex	At home shared with the family	6/12	50.0	53.1	22.6	81.5
	Hotel/Restaurant	3/12	25.0	25.5	6.6	62.1
	Client's house	1/12	8.3	9.8	1.0	54.7
	Other	2/12	16.7	11.6	2.2	43.9

3.2.6. Sexual history with paying clients

The majority of uniformed personnel (27.7%) used a male condom in their last transactional sexual intercourse. In all cases, it is the uniformed officer (100%) who suggest condom use. However, most of uniformed personnel (66.9%) never use condoms. The average amount of money paid by a uniformed officer to a FSW during last transactional sex is USD 5, while the majority of them (81.7%) paid between USD 0 and 5 as shown in Table 26.

Table 26: Sexual history of Mogadishu uniformed personnel with paying clients

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Used a condom the last time had transactional sexual intercourse with a client	Yes	3/12	25.0	27.7	7.5	64.2
Type of condom	Male condom	3/12	100	-	-	-
Person who suggested condom use at last transactional sexual intercourse	Myself (uniformed officer)	3/3	100	-	-	-
Frequency of using condoms with transactional clients over the last 30 days (1 month)	Almost every time	1/12	8.3	8.9	0.9	5.2
	Sometimes	3/12	25.0	24.6	6.4	60.9
	Never	8/12	66.9	66.5	32.1	89.3
Number of female sex workers uniformed officer had sex with on the last day	Mean ± SD	1.3 ± 1.2			0.6	2.1
	Range	0–4				
Amount of money paid during last transactional sex	0–5	8/10	80.0	81.7	39.0	96.9
	6–10	0/10	0.0	0.0	-	-
	11–20	1/10	10.0	6.8	0.6	47.5
	>= 21	1/10	10.0	11.5	1.0	61.8
	Mean ± SD	5.0 ± 1.9			0.7	9.3
	Range	1–20				

3.2.7. Sexual history with non-paying partners

Whereas one quarter of uniformed personnel (27.7%), reported using a condom during their last sexual intercourse with transactional clients, only 15.7 per cent of uniformed personnel used a condom with their last non-transactional client. The average number of times a uniformed personnel had sexual intercourse with non-paying clients over the last 30 days is 0.7 times, with uniformed personnel being the ones (100%) who suggested condom use during last non-transactional sex as shown in Table 27.

Table 27: Sexual history of Mogadishu uniformed personnel with non-paying partners

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of times uniformed officer had sexual intercourse with a non-transactional sexual partner over the last 30 days (1 month)	Mean ± SD Range	0.7 ± 1.4 0–5			0.4	1.0
Used a condom last time he had sexual intercourse with non-paying/transactional sexual partner	Yes	6/41	14.6	15.7	6.9	32.0
Person who suggested condom use at last non-transactional sexual intercourse	Myself (uniformed officer)	6/6	100	-	-	-

3.2.8. Availability and use of male condom

Although almost two thirds (64.6%) of uniformed personnel in Mogadishu have ever heard of or seen a male condom and 49.7 per cent know a place or person where to obtain male condoms, only 9.5 per cent have ever used a male condom. Very few uniformed personnel received male condoms (1.6%) or counselling on condom use (3.1%) 12 months prior to this survey, even though 96 per cent perceive male condoms to be affordable as shown in Table 28.

Table 28: Availability and use of male condom among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a male condom	Yes	191/287	66.6	64.6	58.6	70.2
Ever used a male condom with a sexual partner	Yes	18/191	9.4	9.5	5.9	14.8
Knows of a place or person where to obtain male condoms	Yes	94/191	49.2	49.7	42.2	57.1
Usually carries condoms	Yes	9/190	4.7	5.5	2.9	10.5
Received condoms in the past three months	Yes	3/191	1.6	2.1	0.7	6.4
Received counselling on condom use and safe sex in the past three months	Yes	6/191	3.1	3.2	1.4	7.2
Person who usually supplies the condoms	Client (FSW)	2/180	1.1	1.1	0.3	4.7
	Never use a condom	165/180	91.7	91.3	85.7	94.8
	Myself	13/180	7.2	7.6	4.4	12.9
Affordability of male condom	Affordable	170/179	95.0	96.0	91.8	98.0
	Not affordable	5/179	2.8	2.4	0.9	6.3
	Somewhat affordable	4/179	2.2	1.6	0.6	4.7

3.2.9. Availability and use of female condom

Unlike male condoms, fewer uniformed personnel in Mogadishu have ever heard (5.9%), used (0%) or know where to obtain (47.1%) female condoms as shown in Table 29.

Table 29: Availability and use of female condom among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a female condom	Yes	17/287	5.9	4.5	2.7	7.5
Ever used a female condom with a sexual partner	Yes	0/17	0.0	-	-	-
Knows of a place or person where to obtain female condoms	Yes	8/17	47.1	55.4	27.6	80.2
Places where he can obtain female condoms	Pharmacy	6/8	75.0	67.2	20.2	94.3
	Pharmacy and public hospital	2/8	25.0	32.8	5.7	79.8

3.2.10. HIV testing history and avoidance of HIV services

38

Few (22.4%) uniformed personnel in Mogadishu know where to go for HIV test, and subsequently only 11.9 per cent have ever received an HIV test. However, only 9.2 per cent know their HIV status from an HIV test within the past 12 months prior to this study. Lack of awareness on where to go for an HIV test is cited by the majority (96.2%) of uniformed personnel in Mogadishu as the reason for having never sought for an HIV test. Overall, 3.3 per cent of uniformed personnel in Mogadishu avoid HIV services due to stigma and discrimination among FSWs as shown in Table 30.

Table 30: HIV testing history and avoidance of HIV services among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Knows where to go if he wishes to receive a confidential HIV test	Yes	69/282	24.5	22.4	17.8	27.8
Knows his HIV status from an HIV test	Have ever been tested	37/287	13.0	11.9	8.6	16.2
Last tested	Less than 6 months	10/37	27.0	27.7	14.9	45.5
	6–12 months	18/37	48.7	49.6	32.8	66.5
	More than 12 months	9/37	24.3	22.7	11.5	39.9
Result of last HIV test	Positive	1/37	2.7	1.5	0.2	10.8
	Negative	36/37	97.3	98.5	89.2	99.8
Nature of HIV testing	Voluntary	14/38	36.8	34.1	20.2	51.6
	Required	24/38	63.2	65.9	48.5	79.9
During most recent HIV counselling/testing, revealed to the health provider that he is engaged in transactional sex	Yes	0.0	0.0	-	-	-
Reasons for having never sought for an HIV test	Fear of or concern about stigma by staff or neighbours	3/249	1.2	1.4	0.4	4.3
	Fear of or concern about or experienced violence	1/249	0.4	0.6	0	4.2
	Fear of or concern about or experienced police harassment or arrest	3/249	1.2	1.8	0.6	5.5
	Didn't know where to go for an HIV test	242/249	97.2	96.2	92.2	98.2
GARPR 3.4: Knows his/her HIV status from an HIV test	Yes	28/287	9.8	9.2	6.3	13.2
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations	Yes	7/287	2.4	3.3	1.6	6.9

3.2.11. Physical and sexual violence

Only 1 per cent of uniformed personnel in Mogadishu have seen or heard of a woman being hit, kicked or beaten because someone believed they sell sex to men. In addition, 1.2 per cent of uniformed personnel in Mogadishu have seen or heard of a FSW being physically forced to have sexual intercourse against her will mostly by their social acquaintance (77.6%) or police (22.4%) as illustrated in Table 31.

Table 31: Physical and sexual violence among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being hit, kicked or beaten because someone believed she sells sex to men in the past 12 months	Yes	3/283	1.1	1.0	0.3	3.3
Person who last hit, kicked or beat the female sex worker	Client	1/3	33.3	34.0	0	99.7
	Others	2/3	66.7	66.0	0.3	99.9
Have seen/heard of a woman being forced to have sex with a man by sexually assaulting or raping her, or having intercourse against her will in the past 12 months	Yes	4/283	1.4	1.2	0.4	3.1
Person who last forced her to have sex with them against her will	Social acquaintance	3/4	75.0	77.6	4.7	99.6
	Police	1/4	25.0	22.4	0.4	95.3

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Sought medical treatment after being physically forced to have sexual intercourse against her will	Yes	3/4	75.0	77.6	4.7	99.6
Reported this incident to the police	Yes	2/2	50.0	46.6	2.1	97.2

3.2.12. Programme coverage

Overall, the coverage of HIV prevention programmes among uniformed personnel in Mogadishu is very low (0.4%). Furthermore, only 5.1 per cent and 5.6 per cent of uniformed personnel are aware of any local NGO here that delivers non-medical assistance or advice to members of their group and have attended any meetings to discuss STI or HIV/AIDS during the last 12 months respectively, as shown in Table 32.

Table 32: Programme coverage among Mogadishu uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Aware of any local NGO here that delivers non-medical assistance or advice to members of their group	Yes	17/285	6.0	5.1	3.2	8.2
Have attended any meetings to discuss STI or HIV/AIDS during the last 12 months	Yes	16/286	5.6	5.9	3.6	9.6
Attended the sites he was referred to	Yes	N/A				
GARPR 3.7 Coverage of HIV prevention programmes among key populations	Yes	1/287	0.4	0.4	0	2.5

3.2.13. Alcohol and drug use in the past three months

Few uniformed personnel (2.2%) in Mogadishu consume alcohol compared to 61.2 per cent who consume khat. In addition, 53.5 per cent of the officers smoke cigarette. Other drugs and substances consumed include marijuana or hashish (1.2%) and shisha smoking (9.7%). Only 1.2 per cent of uniformed personnel reported having had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette.

Table 33: Alcohol and drug use among Mogadishu uniformed personnel in the past three months

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	Never	280/287	97.6	97.7	95.2	99.0
	Monthly or less	4/287	1.4	1.3	0.5	3.6
	2–4 times a month	3/287	1.1	0.9	0.3	3.0
	2–3 times a week	-	-	-	-	-
	4 or more times a week	-	-	-	-	-
Frequency of chewing khat during the past three months	Never	112/287	39.0	38.8	33.1	44.9
	Monthly or less	5/287	1.7	1.6	0.6	3.8
	2–4 times a month	63/287	22.0	22.1	17.5	27.5
	2–3 times a week	26/287	9.1	7.4	4.9	10.9
	4 or more times a week	81/287	28.2	30.2	24.8	36.1
Frequency of smoking marijuana or hashish during the past three months	Never	284/287	99.0	98.8	96.4	99.6
	Monthly or less	-	-	-	-	-
	2–4 times a month	1/287	0.4	0.4	0	2.8
	2–3 times a week	-	-	-	-	-
	4 or more times a week	2/287	0.7	0.8	0.2	3.1

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of smoking cigarette during the past three months	Never	134/287	46.7	46.5	40.6	52.6
	Monthly or less	2/287	0.7	0.6	0.2	2.6
	2–4 times a month	57/287	19.9	18.7	14.5	23.8
	2–3 times a week	22/287	7.7	7.7	5.1	11.7
	4 or more times a week	72/287	25.1	26.4	21.3	32.1
Frequency of smoking shisha during the past three months	Never	259/287	90.2	90.3	86.1	93.3
	Monthly or less	8/287	2.8	2.9	1.5	5.8
	2–4 times a month	12/287	4.2	3.9	2.2	6.8
	2–3 times a week	4/287	1.4	1.6	0.6	4.1
	4 or more times a week	4/287	1.4	1.4	0.5	3.2
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/ hashish or cigarette	Yes	4/287	1.4	1.2	0.4	3.2
Frequency of injecting drugs during the past three months	Never	286/286	100	100	-	-

3.3. Mogadishu port workers

3.3.1. Sociodemographic characteristics

A total of 287 port workers participated in the study. The average age of port workers in Mogadishu is 33.1 years, with the majority (48.9%) of respondents aged 25 to 34 years. Most truckers (48.9%) had secondary level of education, and nearly all of them (96.7%) had stayed in Mogadishu for more than two years. Nearly three quarters (74.4%) are married with an average of 5.6 dependants. The average monthly income among truckers in Mogadishu is USD 166.8 as presented below in Table 34.

Table 34: Sociodemographic characteristics among Mogadishu port workers

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Age (years)	Mean ± SD	33.1 ± 0.5				
	Range	18–78				
	< 25 years	241/286	84.3	87.1	82.7	90.5
	25+ years	45/286	15.7	12.9	9.5	17.4
	18–24	45/286	15.7	12.9	9.5	17.4
	25–34	138/286	48.3	48.9	42.7	55.1
	35–44	55/286	19.2	20.2	15.6	25.8
Education level	45+	48/286	16.8	17.9	13.5	23.4
	None	224/286	78.3	79.5	74.2	84.0
	Primary	41/286	14.3	13.2	9.7	17.9
	Secondary	20/286	7.0	7.1	4.5	11.0
Nationality	University/College	1/286	0.4	0.2	0	1.2
	Somalia	285/286	99.7	99.8	98.3	99.9
Length of stay in Mogadishu	Djibouti	1/286	0.4	0.2	0	1.7
	Less than 7 days	0/286	-			
	7 days–1 month	0/286	-			
	2–3 months	0/286	-			
	4–6 months	0/286	-			
	7–11 months	5/286	1.8	2.0	0.8	4.8
	1–2 years	4/286	1.4	1.3	0.5	3.6
More than 2 years	277/286	96.9	96.7	93.6	98.4	

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of visiting his family	Daily	211/286	73.8	73.2	67.2	78.4
	Once in a week	12/286	4.2	3.4	1.8	6.2
	>once in a week	2/286	0.7	0.6	0.1	2.3
	Once in a month	5/286	1.8	1.8	0.7	4.5
	Twice in a month	3/286	1.1	0.9	0.3	3.0
	2–3 months	13/286	4.6	5.4	3.1	9.4
	>3 months	40/286	14.0	14.7	10.7	19.8
Marital status	Single	30/286	10.5	8.3	5.7	12.0
	Married	201/286	70.3	74.4	68.8	79.2
	Separated	37/286	12.9	10.8	7.8	15.0
	Divorced	16/286	5.6	6.0	3.6	9.9
	Widowed	2/286	0.7	0.4	0.1	1.8
Number of dependants	Mean ± SD	5.6 ± 3.0			5.2	5.9
	Range	0–19				
Number of wives	1	168/201	83.6	84.9	79.0	89.4
	2	27/201	13.4	12.4	8.4	17.9
	3	5/201	2.5	2.2	0.8	5.7
	4	1/201	0.5	0.5	0	3.3
Frequency of visiting neighbouring countries	Never	247/286	86.4	87.2	82.5	90.7
	Weekly	1/286	0.4	0.5	0	3.3
	Monthly	0/283	-	-	-	-
	Every 2–3 months	0/283	-	-	-	-
	After >3 months	38/286	13.3	12.4	8.9	16.9
Overall monthly income in USD	< 100	46/286	16.1	16.7	12.5	21.9
	100–499	234/286	81.6	81.5	76.1	85.8
	>= 500	6/286	2.1	1.9	0.8	4.4
	Mean ± SD	166.8 ± 113.9	-	-	153.6	180.1
	Range	20–1,000	-	-	-	-

3.3.2. HIV and syphilis prevalence

The overall prevalence of HIV and syphilis infection among port workers in Mogadishu is 0.2 per cent and 1.5 per cent respectively. Prevalence for active syphilis infections is 0.9 per cent as shown in Table 35. However, there was no HIV and syphilis comorbidity.

Table 35: HIV and syphilis prevalence among Mogadishu port workers

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
HIV	1/286	0.4	0.2	0	1.2
Syphilis – Ever infected	4/286	1.4	1.5	0.6	4.1
Syphilis – Active infection	2/286	0.7	0.9	0.2	3.7

3.3.3. Patterns of STI care and treatment seeking behaviour

Although nearly all port workers (97.4%) have heard of HIV and AIDS, only 14.3 per cent have heard of other STIs. In addition, 35.7 per cent of port workers had received an STI test in the past three months, with 29.1 per cent having been diagnosed to have an STI 12 months prior to this survey. Contrastingly, only 9.2 per cent of port workers have experienced an abnormal discharge from the penis in the past 12 months prior to this study and sought STI treatment. In addition, only 2.8 per cent of port workers have had a sore or ulcer on or near the penis in the past 12 months prior to this survey and sought treatment as shown in Table 36.

Table 36: Patterns of STI care and treatment seeking behaviour among Mogadishu port workers

Characteristic	Correct response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of HIV/AIDS	Yes	278/286	97.2	97.4	94.7	98.8
Heard about other infections that can be transmitted through sex	Yes	41/286	14.3	14.3	10.5	19.3
Tested for STIs in the past three months	Yes	13/41	31.7	35.7	21.0	53.7
Diagnosed by a doctor or medical professional to have had STI in the past 12 months	Yes	10/41	24.4	29.1	15.7	47.4
Had an abnormal discharge from the penis in the past 12 months	Yes	25/285	8.8	9.2	6.1	13.5
Had an abnormal discharge from the penis in the past 12 months and sought treatment	Yes	21/25	84.0	87.2	67.6	95.7
Reasons for not seeking treatment for the sore or ulcer on or near penis or anus	Couldn't afford treatment	1/4	25.0	29.6	0.6	96.8
	Didn't think I needed it	3/4	75.0	70.4	3.2	99.4
Had a sore or ulcer on or near penis or anus in the last 12 months	Yes	2.9	2.8	1.3	5.8	
In the last 12 months, had a sore or ulcer on or near penis or anus and sought treatment	Yes	100	100	-	-	

3.3.4. Knowledge on transmission of HIV and STI

There is diverse knowledge score among port workers on HIV prevention and transmission with 35.9 per cent (having knowledge that one cannot get HIV from mosquito bites) as the lowest score to 68.9 per cent (people cannot get HIV by sharing food with a person who has HIV/AIDS) as the highest score. For instance, the majority of port workers know HIV can be transmitted from mother to baby during breastfeeding. In addition, 41.9 per cent know that a healthy-looking person can have HIV and AIDS, whereas 62.2 per cent of them know that people can reduce their chance of getting HIV and STI by using a condom every time they have sex. The overall composite knowledge among port workers who correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is however extremely low (2.2%) as shown in Table 37.

Table 37: Knowledge on transmission of HIV and STI among Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	171/286	59.8	57.4	51.1	63.5
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	185/286	64.7	62.2	55.9	68.1
It is possible for a healthy-looking person to have HIV/AIDS	Yes	127/286	44.4	41.9	35.9	48.1
People can get HIV from mosquito bites	No	94/286	32.9	35.9	29.4	41.5
People can get HIV by sharing food with a person who has HIV/AIDS	No	160/286	55.9	57.2	51.0	63.2
Heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	168/286	58.7	57.5	51.2	63.5

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
HIV can be transmitted from mother to her baby during pregnancy	Yes	176/286	61.5	60.6	54.3	66.5
HIV can be transmitted from mother to her baby during delivery	Yes	178/286	62.2	61.8	55.5	67.7
HIV can be transmitted from mother to her baby by breastfeeding	Yes	202/286	70.6	68.9	62.8	74.4
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	140/286	49.0	47.4	41.3	53.7
GARPR 5.1: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	8/286	2.8	2.2	1.0	4.6

3.3.5. General sexual history

Nearly all port workers (96.9%) have had vaginal sex compared to only 3.7 per cent who have ever had anal sex. The average age at first vaginal sex among port workers in Mogadishu is 18.7 years. Of the port workers, 38.8 per cent have ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse while uniformed officer's houses were being used as places to engage in transactional sex. Most port workers meet their new transactional clients and engage in sex at the port worker's homes as shown in Table 38.

Table 38: General sexual history of Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have ever had vaginal sex with a woman	Yes	275/286	96.2	96.9	94.4	98.3
Age at first vaginal sex	Mean ± SD Range	18.7 ± 4.5 0–51			18.2	19.2
Ever had anal sex with a woman	Yes	11/286	3.9	3.7	2.0	6.7
Ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse	Yes	91/286	31.8	30.8	25.3	36.8
Number of different sexual partners in total he had sexual intercourse with in the past one month	Mean ± SD Range	3.0 ± 3.1 0–17			2.3	3.7
Where truckers meet most of their new transactional sex clients	Client's home	36/91	39.6	39.7	29.3	51.1
	At port worker's home	32/91	35.2	34.3	24.5	45.6
	Beach	3/91	3.3	2.7	0.8	9.5
	Hotel/Restaurant	7/91	7.7	7.9	3.6	16.6
	Khat shop	3/91	3.3	4.6	1.4	13.9
	Tea shop	5/91	5.5	5.1	1.8	13.7
	They call	4/91	4.4	-	-	-
Through pimps/dalals	1/91	1.1	1.2	0.2	8.3	

3.3.6. Sexual history with paying clients

Only 17.6 per cent of port workers used a condom (male) in their last transactional sexual intercourse. However, most of the port workers (77%) never use condoms. The average amount of money paid by a port worker to a FSW during last transactional sex is USD 1.4, while the majority (74.9%) of them paid between USD 0 and USD 5 as shown in Table 39.

Table 39: Sexual history of Mogadishu port workers with paying clients

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Used a condom the last time had transactional sexual intercourse with a client	Yes	16/91	17.6	17.6	10.5	28.0
Type of condom	Male condom	16/16	100			
Person who suggested condom use at last transactional sexual intercourse	FSW	4/16	25.0	24.8	8.0	55.7
	Myself (port worker)	12/16	75.0	75.2	44.3	92.1
Frequency of using condoms with transactional clients over the last 30 days (1 month)	Every time	2/91	2.2	2.3	0.5	9.9
	Almost every time	1/91	1.1	1.5	0.2	10.5
	Sometimes	17/91	18.7	19.2	11.7	29.9
	Never	71/91	78.0	77.0	66.0	85.3
Number of female sex workers port worker had sex with on the last day	Mean ± SD Range	1.4 ± 0.8 1–4			1.3	1.6
Amount of money paid during last transactional sex	0–5	70/91	76.9	74.9	63.7	83.6
	6–10	12/91	13.2	13.8	7.6	23.5
	11–20	4/91	4.4	4.6	1.6	12.5
	>= 21	5/91	5.5	6.7	2.6	16.2
	Mean ± SD Range	6.9 ± 1.0 1–50			4.9	8.8

3.3.7. Sexual history with non-paying partners

Compared to condom use (17.6%) among port workers with last transactional clients, only 6 per cent reported using a condom during their last sexual intercourse with a non-transactional clients. The average number of times a port worker had sexual intercourse with non-paying clients over the last 30 days is 2 times with port workers being the ones (76.2%) who mainly suggested condom use during last non-transactional sex as shown in Table 40.

Table 40: Sexual history of Mogadishu port workers with non-paying partners

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of times uniformed officer had sexual intercourse with a non-transactional sexual partner over the last 30 days (1 month)	Mean ± SD Range	2.0 ± 0.2 0–30			1.6	2.4
Used a condom last time he had sexual intercourse with non-paying/ transactional sexual partner	Yes	13/221	5.9	6.0	3.4	10.5
Person who suggested condom use at last non-transactional sexual intercourse	Joint decision	1/13	7.7	9.6	1.0	53.4
	My partner	2/13	15.4	14.2	2.7	49.4
	Myself (port worker)	10/13	76.9	76.2	40.7	93.7

3.3.8. Availability and use of male condom

More than three quarters (75.3%) of port workers in Mogadishu have ever heard of or seen a male condom, and 46 per cent know a place or person where to obtain male condoms. However, only 9 per cent have ever used a male condom. Very few port workers received male condoms (1.6%) or counselling on condom use (1.6%) 12 months prior to this survey, even though 86.3 per cent perceive male condoms to be affordable as shown in Table 41.

Table 41: Availability and use of male condom among Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a male condom	Yes	220/286	76.9	75.3	69.4	80.3
Ever used a male condom with a sexual partner	Yes	18/220	8.2	9.0	5.5	14.2
Knows of a place or person where to obtain male condoms	Yes	107/220	48.6	46.0	39.0	53.2
Usually carries condoms	Yes	14/218	6.4	6.2	3.5	10.7
Received condoms in the past three months	Yes	4/220	1.8	1.6	0.5	4.6
Received counselling on condom use and safe sex in the past three months	Yes	4/220	1.8	1.6	0.5	4.6
Person who usually supplies the condoms	Client (FSW)	2/210	1.0	1.1	0.3	4.5
	Never use a condom	189/210	90.0	90.2	84.9	93.7
	Myself	19/210	9.1	8.7	5.4	13.8
Affordability of male condom	Affordable	169/195	86.7	86.3	80.0	90.8
	Not affordable	11/195	5.6	5.8	3.1	10.7
	Somewhat affordable	15/195	7.7	7.9	4.6	13.3

3.3.9. Availability and use of female condom

Unlike male condoms, fewer port workers in Mogadishu have ever heard (5.1%), used (8.9%) or know where to obtain (21.7%) female condoms as shown in Table 42.

Table 42: Availability and use of female condom among Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a female condom	Yes	14/286	4.9	5.1	3.0	8.6
Ever used a female condom with a sexual partner	Yes	1/14	7.1	8.9	0.9	50.3
Knows of a place or person where to obtain female condoms	Yes	3/14	21.4	21.7	5.9	55.2
Place or person where to obtain female condoms	Local NGO	1/3	33.3	29.4	0	99.6
	Pharmacy	2/3	66.7	70.6	0.4	99.9

3.3.10. HIV testing history and avoidance of HIV services

Few port workers (12.4%) in Mogadishu know where to go for HIV test, and subsequently only 5.7 per cent have ever received an HIV test. However, only 3.5 per cent know their HIV status from an HIV test within the past 12 months prior to this study. Lack of awareness on where to go for an HIV test is cited by the majority (93.5%) of port workers in Mogadishu as the reason for having never sought for an HIV test. Overall, 6.2 per cent of port workers in Mogadishu avoid HIV services due to stigma and discrimination among FSWs as shown in Table 43.

Table 43: HIV testing history and avoidance of HIV services among Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Knows where to go if he wishes to receive a confidential HIV test	Yes	38/282	13.5	12.4	8.9	16.9
Knows his HIV status from an HIV test	Have ever been tested	19/286	6.6	5.7	3.6	9.0
Last tested	Less than 6 months	5/19	26.3	24.6	8.8	52.6
	6–12 months	7/19	36.8	37.1	16.7	63.6
	More than 12 months	7/19	36.8	38.3	17.4	64.6
Result of last HIV test	Negative	19/19	100	100	-	-
Nature of HIV testing	Voluntary	10/19	52.6	51.9	27.4	75.5
	Required	9/19	47.4	48.1	24.5	72.6
During most recent HIV counselling/ testing, revealed to the health provider that he is engaged in transactional sex	Yes	0/6	0.0	0.0	-	-
Reasons for having never sought for an HIV test	Fear of or concern about stigma by staff or neighbours	13/268	4.9	3.6	1.9	6.5
	Fear of or concern about or experienced violence	5/268	1.9	2.0	0.8	4.9
	Fear of or concern about or experienced police harassment or arrest	2/268	0.8	1.0	0.2	3.9
	Didn't know where to go for an HIV test	248/268	92.5	93.5	89.6	96.0
GARPR 3.4: Knows his/her HIV status from an HIV test	Yes	12/286	4.2	3.5	1.9	6.4
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations	Yes	20/286	7.0	6.2	3.8	9.8

3.3.11. Physical and sexual violence

Few of port workers (4.1%) in Mogadishu have seen or heard of a woman being hit, kicked or beaten because someone believed she sells sex to men. In addition, 18 per cent of port workers in Mogadishu have seen or heard of a FSW being physically forced to have sexual intercourse against her will mostly by her family or relative and people they do not know as illustrated in Table 44.

Table 44: Physical and sexual violence among Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being hit, kicked or beaten because someone believed she sells sex to men in the past 12 months	Yes	12/286	4.2	4.1	2.2	7.4
Person who last hit, kicked or beat the FSW	Social acquaintance	1/12	8.3	5.8	0.6	40.9
	Family and relatives	5/12	41.7	42.3	14.9	75.5
	Other sex worker	1/12	8.3	6.9	0.7	45.3
	Client	1/12	8.3	6.9	0.7	45.3
	Don't know the person	4/12	33.3	37.0	11.3	73.0
Have seen/heard of a woman being forced to have sex with a man by sexually assaulting or raping her, or having intercourse against her will in the past 12 months	Yes	61/286	21.3	18.0	13.9	23.0

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Person who last forced her to have sex with them against her will	Social acquaintance	3/61	4.9	6.0	1.8	18.2
	Police	12/61	19.7	17.8	9.8	30.1
	Other sex worker	1/61	1.6	2.5	0.3	16.5
	Client	1/61	1.6	1.3	0.2	9.3
	Family or relative	7/61	11.5	12.4	5.7	24.6
	Don't know the person	19/61	31.2	30.3	19.2	44.4
	Other	18/61	29.5	29.7	18.8	43.7
Sought medical treatment after being physically forced to have sexual intercourse against her will	Yes	40/58	69.0	68.1	53.7	79.7
Reported this incident to the police	Yes	41/60	68.3	69.3	55.5	80.4

3.3.12. Programme coverage

Generally, the coverage of HIV prevention programmes among port workers in Mogadishu is very low (0.4%). Furthermore, only 3.7 per cent and 0.5 per cent of port workers are aware of any local NGO here that delivers non-medical assistance or advice to members of the group and have attended any meetings to discuss STI or HIV/AIDS during the last 12 months respectively as shown in Table 45.

Table 45: Programme coverage among Mogadishu port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Aware of any local NGO here that delivers non-medical assistance or advice to members of the group	Yes	9/281	3.2	3.7	1.9	7.0
Have attended any meetings to discuss STI or HIV/AIDS during the last 12 months	Yes	2/286	0.7	0.5	0.1	2.2
Attended the sites he was referred to	Yes	N/A				
GARPR 3.7 Coverage of HIV prevention programmes among key populations	Yes	1/287	0.4	0.4	0	2.6

3.3.13. Alcohol and drug use in the past three months

Only 15 per cent port workers in Mogadishu consume alcohol compared to 80.8 per cent who consume khat. In addition, 72.7 per cent of truckers smoke cigarette. Other drugs and substances consumed include marijuana or hashish (14.3%) and shisha smoking (18.6%). Only 26.4 per cent of port workers reported having had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette.

Table 46: Alcohol and drug use among Mogadishu port workers in the past three months

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	Never	237/285	83.2	85.0	80.1	88.8
	Monthly or less	24/285	8.4	7.4	4.8	11.2
	2–4 times a month	8/285	2.8	2.9	1.4	6.1
	2–3 times a week	2/285	0.7	0.5	0.1	2.2
	4 or more times a week	14/285	4.9	4.2	2.4	7.4
Frequency of chewing khat during the past three months	Never	57/285	20.0	19.2	14.8	24.5
	Monthly or less	14/285	4.9	5.6	3.3	9.4
	2–4 times a month	19/285	6.7	7.2	4.5	11.4
	2–3 times a week	24/285	8.4	7.5	4.9	11.4
	4 or more times a week	171/285	60.0	60.5	54.3	66.4

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of smoking marijuana or hashish during the past three months	Never	240/286	83.9	85.7	81.0	89.4
	Monthly or less	13/286	4.6	3.6	2.0	6.5
	2–4 times a month	3/286	1.1	0.9	0.3	2.8
	2–3 times a week	5/286	1.8	1.3	0.5	3.2
	4 or more times a week	25/286	8.7	8.5	5.6	12.5
Frequency of smoking cigarette during the past three months	Never	78/286	27.3	28.5	21.2	34.5
	Monthly or less	7/286	2.5	2.8	1.3	5.9
	2–4 times a month	7/286	2.5	3.2	1.5	6.6
	2–3 times a week	9/286	3.2	2.6	1.3	5.3
	4 or more times a week	185/286	64.7	62.9	56.7	68.8
Frequency of smoking shisha during the past three months	Never	230/286	80.4	81.4	76.1	85.7
	Monthly or less	22/286	7.7	7.8	5.0	11.9
	2–4 times a month	9/286	3.2	2.9	1.5	5.9
	2–3 times a week	6/286	2.1	2.7	1.2	6.0
	4 or more times a week	19/268	6.6	5.2	3.2	8.2
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/ hashish or cigarette	Yes	78/286	27.3	26.4	21.3	32.3
Frequency of injecting drugs during the past three months	Monthly	8/286	2.8	2.1	1.0	4.2
	Never	277/286	96.9	97.6	95.3	98.8
	4 or more times in a week	1/286	0.4	0.4	0	2.4
Type of drug injected	Cocaine	4/9	44.4	46.4	13.9	82.3
	Memphetamine	4/9	44.4	43.8	12.6	80.8
	Other	1/9	11.1	9.8	0.8	59.5
Used a sterile needle and syringe during last IDU	Yes	9/9	100	-	-	-
Shared a syringe or needle with anyone else when injecting drugs in the last three months	Yes	2/9	22.2	22.3	3.6	68.6
Received new, clean needles or syringes in the past three months	Yes	9/9	100	100	-	-

3.4. Mogadishu truckers

3.4.1. Sociodemographic characteristics

A total of 286 truckers participated in the study. The average age of truckers in Mogadishu is 31 years with nearly half (49.8%) of the respondents aged 25 to 34 years. Most truckers (70.8%) have no education, and most of them (85.9%) had stayed in Mogadishu for more than two years. More than half (64.3%) are married with an average of 6.5 dependants with an average monthly income of 183.6 as shown below in Table 47.

Table 47: Sociodemographic characteristics of Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Age (years)	Mean ± SD	31.0 ± 8.0	-	-	30.1	31.9
	Range	18–57	-	-	-	-
	< 25 years	226/286	79.0	78.4	72.9	82.9
	25+ years	60/286	21.0	21.7	17.1	27.1
	18–24	60/286	21.0	21.7	17.1	27.1
	25–34	145/286	50.7	49.8	43.8	55.8
	35–44	61/286	21.3	21.1	16.6	26.4
	45+	20/286	7.0	7.5	4.8	11.4

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Education level	None	202/286	70.6	70.8	65.0	78.0
	Primary	55/286	19.2	18.8	14.5	23.9
	Secondary	28/286	9.8	10.3	7.2	14.7
	University/College	1/286	0.4	0.4	0	0.7
Nationality	Somalia	286/286	100	100	-	-
Length of stay in Mogadishu	Less than 7 days	6/286	2.1	2.1	0.9	4.7
	7 days–1 month	10/286	33.5	3.3	1.8	6.2
	2–3 months	10/286	3.5	3.7	2.0	6.7
	4–6 months	3/286	1.1	0.9	0.3	2.9
	7–11 months	3/286	1.1	0.8	0.3	2.6
	1–2 years	11/286	3.9	3.3	1.8	6.0
	More than 2 years	243/286	85.0	85.9	81.3	89.5
Frequency of visiting his family	Daily	39/286	13.6	13.2	9.6	17.8
	Once in a week	59/286	20.6	20.9	16.4	26.2
	>once in a week	28/286	9.8	9.2	6.3	13.2
	Once in a month	38/286	13.3	13.0	9.5	17.6
	Twice in a month	110/286	38.5	39.3	33.6	45.3
	2–3 months	7/286	2.5	2.5	1.2	5.3
	>3 months	5/286	1.8	2.0	0.8	4.7
Marital status	Single	33/286	11.5	11.9	8.5	16.4
	Married	186/286	65.0	64.3	58.3	69.8
	Separated	54/286	18.9	19.6	15.2	24.8
	Divorced	10/286	3.5	3.7	2.0	7.0
	Widowed	3/286	1.1	0.6	0.2	2.0
Number of dependants	Mean ± SD	6.5 ± 3.4			6.1	6.9
	Range	0–21				
Frequency of visiting neighbouring countries	Never	25/286	8.7	8.7	5.8	12.8
	Weekly	76/286	26.6	27.2	22.2	33.0
	Monthly	157/286	54.9	55.2	49.2	61.1
	Every 2–3 months	13/286	4.6	3.9	2.2	7.0
	After >3 months	15/286	5.2	4.9	2.9	8.2
Overall monthly income in USD	< 100	41/286	14.3	14.0	10.3	18.6
	100–499	236/286	82.5	83.0	78.1	87.1
	≥ 500	9/286	3.2	3.0	1.5	5.8
	Mean ± SD	183.6 ± 114.1	-	-	170.2	196.8
	Range	20–700	-	-	-	-

3.4.2. HIV and syphilis prevalence

The overall prevalence of HIV and syphilis infection among truckers in Mogadishu is 0.5 per cent and 1.2 per cent respectively. None of the four syphilis infections was active as shown in Table 48. However, there was no HIV and syphilis comorbidity.

Table 48: HIV and syphilis prevalence among Mogadishu truckers

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
HIV	3/286	1.1	0.5	0.1	2.5
Syphilis – Ever infected	4/286	1.4	1.2	0.4	3.3
Syphilis – Active infection	0/286	0	-	-	-

3.4.3. Patterns of STI care and treatment seeking behaviour

Most truckers (96.4%) have heard of HIV and AIDS compared to those who have heard of other STIs (57.5%). While 15.5 per cent of truckers had received an STI test in the past three months, only 7.5 per cent have been diagnosed to have STI 12 months prior to this survey. Comparatively, 14.9 per cent of truckers have experienced an abnormal penile discharge in the past 12 months

prior to this study and sought STI treatment. In addition, only 3 per cent of truckers have had a sore or ulcer on or near the penis in the past 12 months prior to this survey and sought treatment as shown in Table 49.

Table 49: Patterns of STI care and treatment seeking behaviour among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of HIV/AIDS	Yes	281/286	98.3	98.5	96.4	99.4
Heard about other infections that can be transmitted through sex	Yes	26/173	60.5	57.5	51.4	63.3
Tested for STI in the past three months	Yes	173/286	15.0	15.5	10.6	22.2
Diagnosed by a doctor or medical professional to have had STI in the past 12 months	Yes	19/173	11.0	11.8	7.5	18.0
Had an abnormal discharge from the penis in the past 12 months	Yes	46/285	16.1	14.9	11.2	19.5
Had an abnormal discharge from the penis in the past 12 months and sought treatment	Yes	24/46	52.2	54.1	38.7	68.8
Reasons for not seeking treatment for the sore or ulcer on or near penis or anus	Could not afford	1/4	25.0	32.9	0.6	97.4
	Didn't think I needed it	3/4	75.0	32.9	0.6	99.4
Had a sore or ulcer on or near penis or anus in the last 12 months		9/286	3.2	3.0	1.5	5.8
In the last 12 months, had a sore or ulcer on or near penis or anus and sought treatment	Yes	4/9	44.4	44.4	12.7	81.5
Type of treatment	Injections and Tablets	2/4	50.0	38.9	1.6	96.2
	Tablets	2/4	50.0	61.1	3.8	98.4

3.4.4. Knowledge on transmission of HIV and STI

There is varied knowledge among truckers on HIV prevention and transmission with 45.8 per cent (knowledge on existence of special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby) as the lowest score to 81.2 per cent (know HIV can be transmitted from mother to baby during breastfeeding) as the highest score. The overall composite knowledge among truckers who correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is however low (21.3%) as shown in Table 50.

Table 50: Knowledge on transmission of HIV and STI among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	226/286	79.0	79.0	73.7	83.5
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	181/286	63.3	62.7	56.7	68.4
It is possible for a healthy-looking person to have HIV/AIDS	Yes	160/286	55.9	55.8	49.7	61.7
People can get HIV from mosquito bites	No	150/286	52.5	50.8	44.8	56.7
People can get HIV by sharing food with a person who has HIV/AIDS	No	198/286	69.2	69.0	63.1	74.3

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	169/286	59.1	58.3	52.3	64.1
HIV can be transmitted from mother to her baby during pregnancy	Yes	206/286	72.0	73.1	67.4	78.1
HIV can be transmitted from mother to her baby during delivery	Yes	215/286	75.2	75.7	70.2	80.5
HIV can be transmitted from mother to her baby by breastfeeding	Yes	230/286		81.2	76.1	85.5
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	136/286	47.6	45.8	39.9	51.8
GARPR 5.1: Knowledge on HIV prevention and misconceptions		66/286	23.1	21.3	16.9	26.6

3.4.5. General sexual history

Most truckers (90.8%) have had vaginal sex compared to only 5.4 per cent who have ever had anal sex. The average age at first vaginal sex among truckers in Mogadishu is 18.3 years. Of these truckers, 23.3 per cent have ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse while uniformed officer's houses being used as places to engage in transactional sex. More than one third (38%) of truckers meet their new transactional clients and engage in sex at the uniformed personnel's homes as shown in Table 51.

Table 51: General sexual history of Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have ever had vaginal sex with a woman	Yes	273/285	95.8	95.1	90.8	97.5
Age at first vaginal sex	Mean ± SD Range	18.3 ± 3.8 10–34			17.8	18.7
Ever had anal sex with a woman	Yes	16/285	5.6	5.4	3.3	8.8
Ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse	Yes	66/286	23.1	23.3	18.6	28.7
Number of different sexual partners in total he had sexual intercourse with in the past one month	Mean ± SD Range	2.0 ± 0.5 0–25			1.1	3.0
Where truckers meet most of their new transactional sex clients	Client's home	26/66	39.4	38.0	26.6	50.8
	At trucker's home	17/66	25.8	27.2	17.3	39.9
	Beach	4/66	6.1	5.8	2.1	15.0
	Hotel/Restaurant	2/66	3.0	3.7	0.9	14.1
	Town street or highway	4/66	6.1	6.5	2.4	16.5
	Others	5/66	7.6	6.2	2.4	14.9
	They call	8/66	12.1	12.7	6.3	23.9

3.4.6. Sexual history with paying clients

The proportion of truckers who used a male condom in their last transactional sexual intercourse

is 24.4 per cent. In most instances (53.3%), it is the truckers who suggested condom use. However, only 4.2 per cent use condoms every time. The average amount of money paid by a uniformed officer to a FSW during last transactional sex is USD 16, while the majority (52.6%) of them paid between USD 0 and USD 5 as shown in Table 52.

Table 52: Sexual history of Mogadishu truckers with paying clients

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Used a condom the last time had transactional sexual intercourse with a client	Yes	16/66	24.2	24.4	15.2	36.8
Type of condom	Male condom	16/16	100	100	-	-
Person who suggested condom use at last transactional sexual intercourse	FSW	6/16	37.5	40.0	16.7	68.9
	Myself (trucker)	9/16	56.3	53.3	26.4	78.5
	Joint decision	1/16	6.3	6.7	0.7	41.1
Frequency of using condoms with transactional clients over the last 30 days (1 month)	Every time	3/65	4.6	4.2	1.2	13.3
	Almost every time	1/65	1.5	1.6	0.2	10.7
	Sometimes	15/65	23.1	22.9	13.9	35.2
	Never	46/65	70.8	71.4	58.7	81.4
Number of FSWs uniformed officer had sex with on the last day	Mean ± SD	2.0 ± 3.8			1.1	3.0
	Range	0–25				
Amount of money paid during last transactional sex in USD	0–5	33/64	51.6	52.6	39.8	65.1
	6–10	11/64	17.2	14.5	7.7	25.6
	11–20	8/64	12.5	12.4	6.2	23.4
	>= 21	12/64	18.8	20.5	11.8	33.1
	Mean ± SD	16.0 ± 3.2				
Range	1–120					

3.4.7. Sexual history with non-paying partners

The proportion of truckers who reported using a condom during their last non-transactional client is 12.7 per cent. The average number of times a trucker had sexual intercourse with non-paying clients over the last 30 days is 2.4 times with truckers being the majority (74.6%) who suggested condom use during last non-transactional sex as shown in Table 53.

Table 53: Sexual history of Mogadishu truckers with non-paying partners

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of times uniformed officer had sexual intercourse with a non-transactional sexual partner over the last 30 days (1 month)	Mean ± SD Range	2.4 ± 0.2 0–22			1.9	2.9
Used a condom last time he had sexual intercourse with non-paying/ transactional sexual partner	Yes	16/136	11.8	12.7	7.6	20.4
Person who suggested condom use at last non-transactional sexual intercourse	Joint decision	1/23	4.4	4.2	0.5	28.0
	My partner	5/23	21.7	21.2	7.7	46.3
	Myself	17/23	73.9	74.6	49.8	89.7

3.4.8. Availability and use of male condom

Whereas 83.8 per cent of truckers in Mogadishu have ever heard of or seen a male

condom and 61.8 per cent know a place or person where to obtain male condoms, only 13.8 per cent have ever used a male condom. Very few truckers received male condoms (5.1%) or counselling on condom use (10.1%) 12 months prior to this survey, even though 40.5 per cent perceive male condoms to be affordable as shown in Table 54.

Table 54: Availability and use of male condom among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a male condom	Yes	237/286	82.9	83.8	79.0	87.7
Ever used a male condom with a sexual partner	Yes	34/237	14.4	13.9	10.0	19.1
Knows of a place or person where to obtain male condoms	Yes	147/237	62.0	61.8	55.2	68.0
Usually carries condoms	Yes	17/235	7.2	6.3	3.9	10.3
Received condoms in the past three months	Yes	15/236	6.4	5.1	2.9	8.7
Received counselling on condom use and safe sex in the past three months	Yes	26/236	11.0	10.1	6.8	14.7
Person who usually supplies the condoms	Client (FSW)	10/225	4.4	4.7	2.5	8.6
	Never use a condom	195/225	86.7	87.0	81.7	90.9
	Myself (trucker)	20/225	8.9	8.4	5.4	12.9
Affordability of male condom	Affordable	62/154	40.3	40.5	32.8	48.8
	Not affordable	56/154	36.4	37.0	29.4	45.2
	Somewhat affordable	36/154	23.4	22.5	16.5	30.0

3.4.9. Availability and use of female condom

Unlike male condoms, fewer truckers in Mogadishu have ever heard (11.9%), used (10.4%) or know where to obtain (31.1%) female condoms as shown in Table 55.

Table 55: Availability and use of female condom among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a female condom	Yes	38/286	13.3	11.9	8.5	16.3
Ever used a female condom with a sexual partner	Yes	5/38	13.2	10.4	3.7	25.9
Knows of a place or person where to obtain female condoms	Yes	16/38	42.1	31.1	17.8	48.6

3.4.10. HIV testing history and avoidance of HIV services

Only 34.2 per cent truckers in Mogadishu know where to go for a HIV test although 20.4 per cent have ever received an HIV test in lifetime. However, only 11.4 per cent know their HIV status from an HIV test within the past 12 months prior to this study. Lack of awareness on where to go for an HIV test is cited by the majority (75.2%) of truckers in Mogadishu as the reason for having never sought for an HIV test. Overall, 22.3 per cent of truckers in Mogadishu avoid HIV services due to stigma and discrimination among FSWs as shown in Table 56.

Table 56: HIV testing history and avoidance of HIV services among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Knows where to go if he wishes to receive a confidential HIV test	Yes	99/283	35.0	34.2	28.7	40.2
Knows his HIV status from an HIV test	Have ever been tested	60/286	21.0	20.4	16.0	25.8
Last tested	Less than 6 months	24/60	40.0	42.2	29.5	56.1
	6–12 months	16/60	26.7	26.5	16.3	40.0
	More than 12 months	20/60	33.3	31.3	20.1	45.2
Result of last HIV test	Positive	2/60	3.3	0.5	0.1	2.1
	Negative	58/60	96.7	99.5	98.0	99.9
	Indeterminate	0/60	-	-	-	-
Nature of HIV testing	Voluntary	15/60	25.0	23.2	12.6	38.7
	Required	45/60	75.0	76.9	61.3	87.4
During most recent HIV counselling/testing, revealed to the health provider that he is engaged in transactional sex	Yes	4/16	25.0	23.6	7.6	53.9
Reasons for having never sought for an HIV test	Fear of or concern about stigma by staff or neighbours	37/230	16.1	14.7	10.6	20.1
	Fear of or concern about or experienced violence	1/230	0.4	0.8	0.1	5.8
	Fear of or concern about or experienced police harassment or arrest	22/230	9.6	9.3	5.8	14.5
	Didn't know where to go for an HIV test	170/230	73.9	75.2	68.7	80.7
GARPR 3.4: Knows his/her HIV status from an HIV test	Yes	42/286	14.7	14.2	10.4	18.9
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations	Yes	60/286	21.0	22.3	17.6	27.8

3.4.11. Physical and sexual violence

Almost one quarter (23.5%) of truckers in Mogadishu have seen or heard of a woman being hit, kicked or beaten because someone believed she sells sex to men. In addition, 19.3 per cent of truckers in Mogadishu have seen or heard of a FSW being physically forced to have sexual intercourse against her will as presented in Table 57.

Table 57: Physical and sexual violence among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being hit, kicked or beaten because someone believed she sells sex to men in the past 12 months	Yes	68/286	23.8	23.5	18.8	28.9
Have seen/heard of a woman being forced to have sex with a man by sexually assaulting or raping her or having intercourse against her will in the past 12 months	Yes	56/284	19.7	19.3	15.0	24.5
Sought medical treatment after being physically forced to have sexual intercourse against her will	Yes	8/36	22.2	18.3	8.7	34.5
Reported this incident to the police	Yes	12/41	29.3	26.6	14.9	42.9

3.4.12. Programme coverage

Overall, the coverage of HIV prevention programmes among truckers in Mogadishu is low (5.1%). Furthermore, only 17.6 per cent and 4.1 per cent of truckers are aware of any local NGO here that delivers non-medical assistance or advice to members of the group and have attended any meetings to discuss STI or HIV/AIDS during the last 12 months respectively as shown in Table 58.

Table 58: Programme coverage among Mogadishu truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Aware of any local NGO here that delivers non-medical assistance or advice to members of the group	Yes	51/277	18.4	17.6	13.4	22.7
Have attended any meetings to discuss STI or HIV/AIDS during the last 12 months	Yes	14/282	5.0	4.1	2.3	7.1
Attended the sites he was referred to	Yes	5/8	62.5	61.7	18.0	92.2
GARPR 3.7 Coverage of HIV prevention programmes among key populations	Yes	9/286	3.2	5.1	2.1	12.2

3.4.13. Alcohol and drug use in the past three months

Of the truckers in Mogadishu, 11.4 per cent consume alcohol compared to 75.5 per cent who consume khat. In addition, 67 per cent of truckers smoke cigarette. Other drugs and substances consumed include marijuana or hashish (12.1%) and shisha smoking (17.9%). Only 16.5 per cent of truckers reported having had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat or smoked marijuana/hashish or cigarette.

Table 59: Alcohol and drug use among Mogadishu truckers in the past three months

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	Never	254/286	88.8	89.6	85.5	92.7
	Monthly or less	20/286	7.0	6.5	4.1	10.1
	2–4 times a month	3/286	1.1	0.9	0.3	2.9
	2–3 times a week	5/286	1.8	1.7	0.7	4.1
	4 or more times a week	4/286	1.4	1.3	0.5	3.5
Frequency of chewing khat during the past three months	Never	74/285	26.0	24.5	19.8	30.0
	Monthly or less	28/285	9.8	8.8	6.0	12.7
	2–4 times a month	24/285	8.4	8.2	5.5	12.1
	2–3 times a week	47/285	16.5	18.1	13.9	23.4
	4 or more times a week	112/285	39.3	40.3	34.5	46.4
Frequency of smoking marijuana or hashish during the past three months	Never	252/286	88.1	87.9	83.4	91.3
	Monthly or less	8/286	2.8	2.7	1.3	5.4
	2–4 times a month	5/286	1.8	1.9	0.8	4.6
	2–3 times a week	10/286	3.5	3.7	2.0	6.9
	4 or more times a week	11/286	3.9	3.8	2.1	6.9
Frequency of smoking cigarette during the past three months	Never	98/286	34.3	33.0	27.6	38.8
	Monthly or less	15/286	5.2	5.4	3.2	8.9
	2–4 times a month	9/286	3.2	2.8	1.4	5.4
	2–3 times a week	24/286	8.4	8.5	5.7	12.5
	4 or more times a week	140/286	8.4	8.5	5.7	12.5
Frequency of smoking shisha during the past three months	Never	234/286	81.8	82.1	77.0	86.2
	Monthly or less	25/286	8.7	8.8	5.9	12.9
	2–4 times a month	7/286	2.5	2.5	1.2	5.1
	2–3 times a week	8/286	2.8	2.5	1.2	5.1
	4 or more times a week	12/286	4.2	4.2	2.4	7.4

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/ hashish or cigarette	Yes	49/286	17.1	16.5	12.5	21.3
Frequency of injecting drugs during the past three months	4 or more times a week	1/284	0.4	0.2	0	1.7
	Never	283/284	99.7	99.8	98.3	99.9
Type of drug injected	Decline to answer	1/1	100			
Used a sterile needle and syringe during last IDU	Yes	1/1	100	-	-	-
Shared a syringe or needle with anyone else when injecting drugs in the last three months	Yes	1/1	100			
Received new, clean needles or syringes in the past three months	Yes	1/1	100			

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3.5. Female sex workers

A total of 286 female sex workers were recruited. Eight initial seeds were purposely recruited through contacts with staff working at Global Fund sub-recipients working in Bossaso. The seeds were recruited to represent diverse characteristics including varied age and coming from different parts of Bossaso.

3.5.1. Response rate and eligibility

A total of 659 coupons were distributed. Less than half (44.6%) were returned by FSWs at data collection site. However, 2.7 per cent of FSWs who returned coupons were not eligible and therefore not allowed to participate in the survey. Among those ineligible, most (62.5%) of them were not FSWs. None of the FSWs refused to accept coupons from the coupon manager as shown in Table 60.

Table 60: Response rate and eligibility of Bossaso FSWs

Characteristic	Sample proportions	
	n/N	%
Coupons distributed	659	-
Coupons returned	294/659	44.6
FSW who rejected coupons	0/286	0.0
Participants ineligible	8/294	2.7
Reasons for ineligibility		
	Not FSW	5/8
	Under 18 years	3/8

3.5.2. Network properties

The recruitment tree for FSWs in Bossaso is illustrated in Figure 11. This tree indicates eight FSW seeds and the accompanying recruitment chains. The maximum number of waves reached from one seed is 11, whereas the least is zero as shown in Figure 12. While seed 1 and 7 had the least recruits, seed 5 had the highest number of recruits as shown in Figure 13.

Figure 11: Bossaso FSW recruitment tree

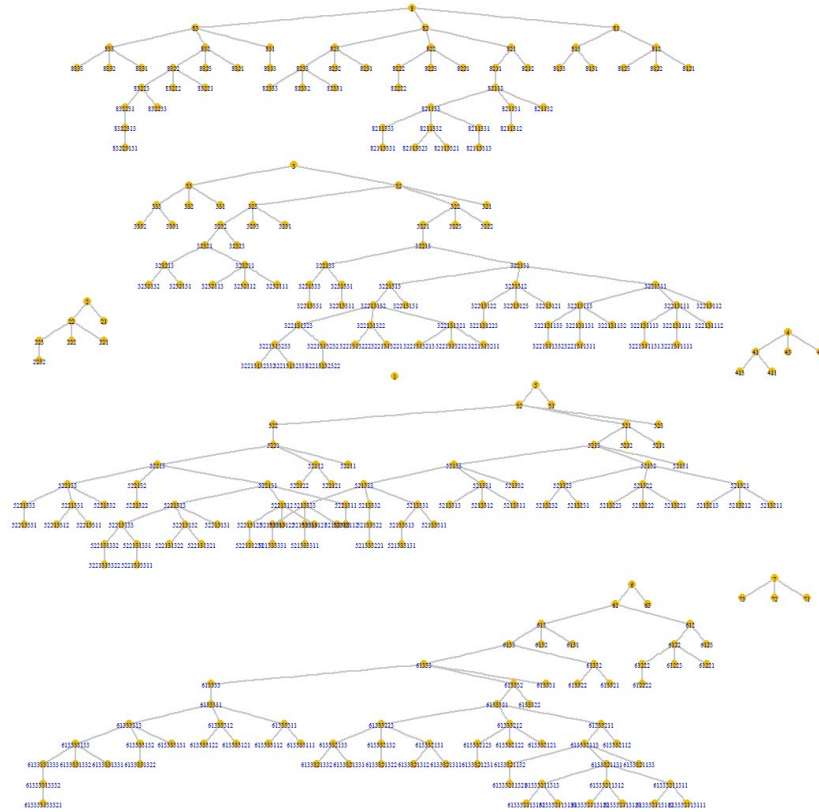


Figure 12: Bossaso FSW recruits per wave

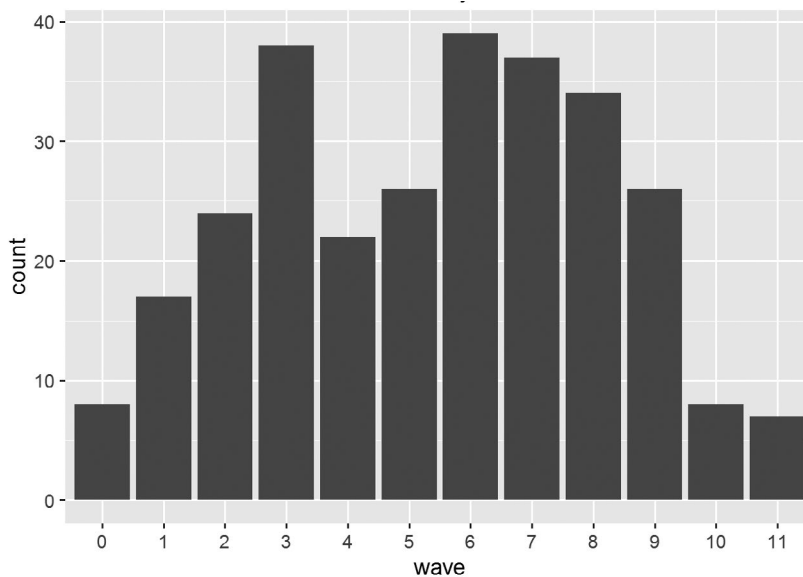
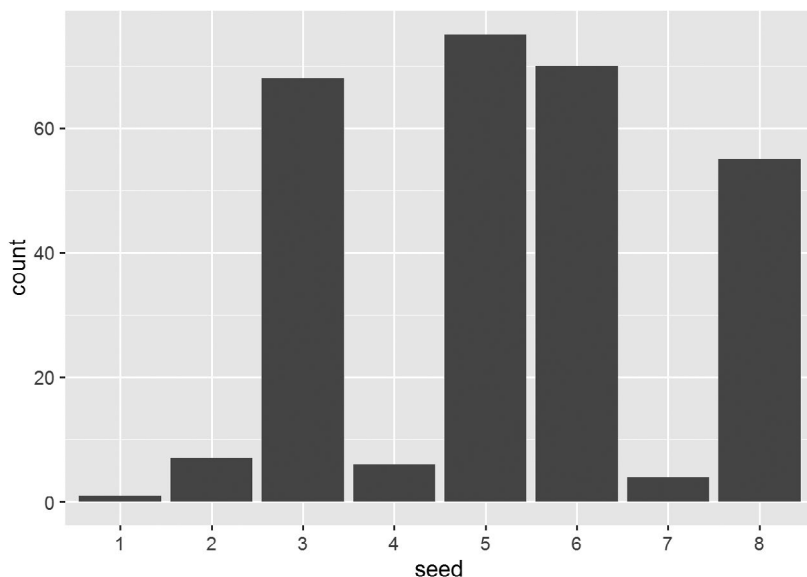


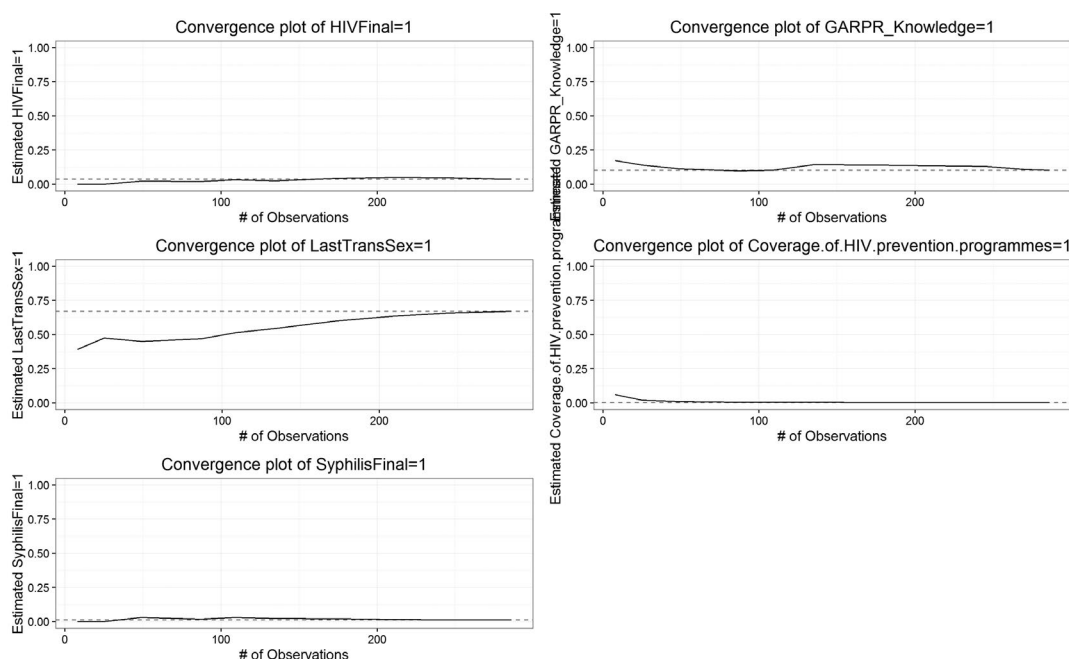
Figure 13: Bossaso FSW recruits per seed



3.5.3. Convergence

Convergence was reached on five key indicators as shown in Figure 14. The five key GARPR indicators tested to establish convergence comprised HIV prevalence, syphilis prevalence, knowledge on HIV, condom use at last transactional sexual intercourse, and coverage of HIV prevention programmes.

Figure 14: Bossaso convergence plots on key indicators



3.5.4. Sociodemographic characteristics

The average age of FSW in Bossaso is 28.4 years with the majority (54%) of FSW aged 25 to 34 years. Whereas most FSW are of Somali nationality (91.7%), more than half (54.3%) were born in South Central Somalia. Majority of the FSW (67.3%) have no education. More than three quarters

of FSW (85.9%) have stayed in Bossaso for more than 2 years. Most FSW in Bossaso are divorced (82.4%) although most are living with children. Besides sex work, 71.1 per cent of FSW earn money also doing other work, most often domestic work and tea selling. However, more than half of the FSW (64.4%) earn USD 100 or less as monthly income. Finally, all FSW have been circumcised, as shown in Table 61.

Table 61: Sociodemographic characteristics of Bossaso FSWs

Characteristic	Sample proportions		Population estimates	
	n/N	%	% (95% confidence interval)	
Age	Range	18–49		
	Mean ± SD	28.7 ± 6.1		28.4 ± 6.0
	Median	28.0		27.0
	<25 years old	67/286	23.4	24.3 (18.0–30.5)
	25+ years old	219/286	76.6	75.7 (69.5–82.0)
	18–24	67/286	23.4	24.3 (17.9–30.7)
	25–34	153/286	53.4	54.0 (47.1–61.0)
Level of education	35–44	62/286	21.7	21.7 (15.5–26.2)
	45 or older	4/286	1.4	1.0 (0.2–1.5)
	None	197/286	68.9	67.3 (60.1–74.3)
Nationality	Primary	69/286	24.1	25.7 (19.2–32.3)
	Secondary	20/286	7.0	7.0 (3.8–10.3)
	Djibouti	7/286	2.4	3.4 (0.3–6.5)
Place of birth	Ethiopia	13/286	4.5	4.9 (1.6–8.1)
	Somalia	266/286	93.0	91.7 (87.3–96.2)
	Djibouti	2/286	0.6	1.4 (0–3.6)
Length of stay in Bossaso	Ethiopia	10/286	3.5	2.4 (1.0–3.7)
	Puntland	61/286	21.3	2.5 (1.8–3.1)
	Somaliland	47/286	16.4	17.4 (11.9–23.0)
	South Central Somalia	166/286	58.0	54.3 (46.8–61.5)
	2–3 months	1/286	0.3	0.4 (0–1.1)
Marital status	7–11 months	2/286	0.6	0.6 (0–1.5)
	1–2 years	31/286	10.8	13.3 (7.7–18.3)
	More than 2 years	252/286	88.1	85.9 (80.6–91.2)
	Divorced	229/286	80.1	82.4 (77.3–87.5)
Proportion of married FSW whose spouse/partner has another wife or wives	Married	11/286	3.8	2.6 (1.4–3.9)
	Single	20/286	7.0	5.6 (2.9–8.3)
	Widowed	26/286	9.1	9.4 (5.0–13.7)
	7/11		63.6	62.4 (20.5–64.6)
Person the FSW is currently living with	Children	186/285	65.3	65.9 (59.0–72.9)
	Roommate	26/285	9.1	11.9 (6.7–17.0)
	Alone	25/285	8.8	8.0 (4.2–11.9)
	Other family	41/285	14.4	11.7 (8.6–14.7)
	Siblings	7/285	2.5	2.5 (0–5.8)
Proportion of FSW who currently earn money doing work other than sex work		205/286	71.7	71.1 (64.5–77.6)
Type of other work currently done (multiple answers possible)	Tea seller	68/205	33.2	31.5 (23.9–39.0)
	Hotel worker	39/205	19.0	18.7 (12.3–25.1)
	Khat seller	16/205	7.8	6.9 (3.7–9.9)
	Cleaning shops	19/205	9.3	8.0 (3.3–12.5)
	Domestic worker	61/205	29.8	32.1 (24.1–40.3)
	Trader	1/205	0.5	1.7 (0–4.8)
	Other	14/205	6.8	6.8 (2.7–10.9)

Characteristic	Sample proportions			Population estimates
		n/N	%	% (95% confidence interval)
Overall monthly household income (in USD)	Range	20–800		
	Mean ± SD	114.7 ± 125.9		118.5 ± 130.1
	Median	80.0		90.0
	≤ 100	188/286	65.7	64.4 (57.3–71.6)
	More than 100	98/286	34.3	35.6 (28.5–42.7)
Number of people she is currently supporting	Range	0–14		
	Mean ± SD	3.4 ± 2.8		
	Median	3		
	0	63/286	22.0	23.5 (16.6–30.4)
	1–5	156/286	54.9	55.3 (48.1–62.6)
	6–10	64/286	22.4	20.6 (15.2–26.1)
More than 10	3/286	0.1	0.5 (0.1–0.9)	
Undergone circumcision		286/286	100	-

3.5.5. HIV and syphilis prevalence

The overall prevalence of HIV and syphilis infection among FSW in Bossaso is 4.5 per cent and 1.1 per cent respectively. All FSW who are positive for syphilis have a currently active syphilis infection. In addition, HIV and syphilis comorbidity is 0.7 per cent as shown in Table 62.

Table 62: HIV and syphilis prevalence among Bossaso FSWs

Characteristic	Sample proportions			Population estimates
		n/N	%	95% confidence interval
HIV	7/286	2.4	4.5	0.7–8.3
Syphilis – Ever infected	5/286	1.7	1.1	0.3–1.9
Syphilis – Active infection	5/286	1.7	1.1	0.3–1.9
HIV and syphilis comorbidity	2/286	0.7	0.4	0.02–0.7

3.5.6. Patterns of STI care and treatment seeking behaviour

Almost all FSWs have heard of HIV/AIDS (98.3%) and other infections that can be transmitted through sex (96.4%). While 30.5 per cent of FSWs had received an STI test in the past three months, only 12.7 per cent have been diagnosed to have an STI 12 months prior to this study. In addition, 13.9 per cent of FSWs have experienced an abnormal discharge from the vagina in the past 12 months prior to this study, with more than three quarters (80.5%) seeking STI treatment. Furthermore, 23.6 per cent of FSWs have had a sore or ulcer on or near the vagina in the past 12 months prior to this survey, with only 19 per cent of them seeking treatment as shown in Table 63.

Table 63: Patterns of STI care and treatment seeking behaviour among Bossaso FSWs

Characteristic	Sample proportions			Population estimates	
		n/N	%	95% confidence interval	
Proportion who have ever heard of HIV/AIDS		279/286	97.6	98.3	97.2–99.4
Proportion who have heard about other infections that can be transmitted through sex		272/286	95.1	96.4	95.0–97.9
Proportion of FSW who know at least one symptom of an STI (among those who know of STIs)		269/272	98.9	99.4	99.1–99.6

Characteristic	Sample proportions			Population estimates	
	n/N		%	95% confidence interval	
Proportion of FSWs tested for STIs in the past three months	77/286	26.9	30.5	23.6–37.4	
Proportion of FSWs diagnosed by a doctor or medical professional to have had an STI in the past 12 months	33/285	11.4	12.7	7.8–17.6	
Proportion of FSWs who have had an abnormal discharge from the vagina in the past 12 months	41/286	14.3	13.9	9.4–18.5	
Proportion of FSWs who had an abnormal discharge from the vagina in the past 12 months and sought treatment	31/41	75.6	80.6	70.3–92.5	
Type of treatment received for abnormal discharge in the past 12 months among FSWs who sought treatment (multiple answers possible)	Tablets	31/31	100	100	-
	Cream	9/31	29.0	30.2	16.5–43.3
	Injections	4/31	12.9	9.9	6.0–12.8
Reasons for not seeking treatment for abnormal discharge in the past 12 months among FSWs who did not seek treatment (multiple answers possible)	Unable to get transport	5/8	62.5	67.0	38.9–98.5
	Could not afford	5/8	62.5	67.0	38.4–98.5
Proportion of FSWs who have had a sore or ulcer in the genital area in the past 12 months	5/286	1.7	23.6	0–47.5	
Proportion of FSWs who had a sore or ulcer in the genital area in the past 12 months and sought treatment	2/5	40.0	19.0	0–31.5	
Type of treatment received for sore or ulcer in the genital area in the past 12 months among FSWs who sought treatment (multiple answers possible)	Tablets	2/2	100	100	-
	Cream	1/2	50.0	62.9	0–63.0
Reasons for not seeking treatment for sore or ulcer in the genital area in the past 12 months among FSWs who did not seek treatment (multiple answers possible)	Embarrassed	2/3	66.7	77.8	36.9–77.8
	Unable to get transport	1/3	33.3	22.4	0–60.6
	Afford treatment	2/3	66.7	82.6	57.5–66.7

3.5.7. Knowledge on transmission of HIV and STI

There is varied knowledge among FSWs regarding knowledge on HIV prevention and transmission. For instance, the majority of FSWs know HIV can be transmitted from mother to baby during pregnancy (92.6%), delivery (91.2%) and breastfeeding (96%). In addition, 91.8 per cent of FSWs know that a healthy-looking person can have HIV and AIDS, whereas less than half (47.2%) of them know that one cannot get HIV from mosquito bites. More than three quarters (67.9%) of the FSWs know that one can reduce the chance of getting HIV and STI by using a condom every time they have sex. One quarter (26%) of FSWs know of antiretroviral treatment that can reduce the risk of HIV transmission from a woman infected with HIV to the baby. Contrastingly, the overall knowledge of ways of preventing the sexual transmission of HIV and rejection of major misconceptions about HIV transmission among FSW is very low (22.5%), as shown in Table 64.

Table 64: Knowledge on transmission of HIV and STI among Bossaso FSWs

Characteristic	Response	Sample proportions		Population estimates	
		n/N	%	%	95% confidence interval
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	221/286	77.3	79.7	74.8–84.6
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	184/286	64.3	67.9	61.6–74.2
It is possible for a healthy-looking person to have HIV/AIDS	Yes	260/286	90.9	91.8	88.4–95.3
People can get HIV from mosquito bites	No	139/286	48.6	47.2	40.1–54.3
People can get HIV by sharing food with a person who has HIV/AIDS	No	224/286	78.3	79.0	73.7–84.4
Have heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	157/286	54.9	59.1	52.1–66.1
HIV can be transmitted from mother to her baby during pregnancy	Yes	264/286	92.3	92.6	89.2–96.1
HIV can be transmitted from mother to her baby during delivery	Yes	264/286	92.3	91.2	86.7–95.8
HIV can be transmitted from mother to her baby by breastfeeding	Yes	277/286	96.9	96.0	92.8–99.1
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	62/286	21.7	26.0	18.9–33.0
GARPR 3.4: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	57/286	19.9	22.5	16.4–28.6

3.5.8. General sexual history

The average age at first vaginal sex among FSW in Bossaso is 21.5 years, although many (17.6%) were younger than 18 years of age at first vaginal sex. Few (7.7%) FSW have had anal sex. The average age at which most of the FSW first received money, a gift (like khat) or favour in exchange of sexual intercourse is 22.7 years. More than one third of FSW meet their new transactional clients and engage in sex at the FSW's homes. Only 21.2 per cent of FSW work through pimps, who in most cases take one third (56.1%) of the money FSW earn by selling sex, as shown in Table 65.

Table 65: General sexual history of Bossaso FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Age at first vaginal sex	Range	9–39			
	Mean ± SD	21.4 ± 5.3		21.5 ± 5.3	
	Median	20		20.0	
	<18 years old	56/286	19.6	17.6	12.8–22.4
<25 years old	210/286	73.4	73.1	66.4–79.6	
25 years old or older	76/286	26.6	26.9	20.4–33.6	
Had anal sex	27/286	9.4	7.7	3.9–11.3	
Age at first anal sex	Range	15–31			
	Mean ± SD	20.2 ± 3.6			
	Median	20			
	<25 years old	25/27	92.6	94.0	86.3–94.0
25 years old or older	2/27	7.4	6.0	2.4–6.0	

Characteristic	Sample proportions			Population estimates	
	n/N		%	%	95% confidence interval
Age at which she first received money, a gift (like khat) or favour in exchange of sexual intercourse	Range	14–42			
	Mean ± SD	22.7 ± 5.2		22.7 ± 5.4	
	Median	21.0		21.0	
	< 18 years old	30/286	10.5	10.9	6.1–15.8
	<25 years old	170/286	59.4	59.6	52.8–66.4
	25 years old or older	86/286	30.1	29.5	23.3–35.5
Reasons that led to exchange sex for money the first time (multiple answers possible)	Orphan	35/286	12.2	13.4	8.3–18.5
	Didn't have other jobs	83/286	29.0	27.7	21.6–33.9
	Grew up around people doing sex work	43/286	15.0	16.4	11.0–21.7
	I like it or for pleasure	50/286	17.5	19.4	13.2–25.7
	Abandoned by husband	67/286	23.4	21.3	16.1–26.4
	Abandoned by parents or siblings	36/286	12.6	13.2	8.3–18.0
	Encouraged by friends	85/286	29.7	30.1	24.2–35.0
	Forced or pressured	15/286	5.2	5.3	2.1–8.6
	Pays well	83/286	29.0	24.6	19.4–29.7
	Have extra money	42/286	14.7	15.2	10.2–20.2
	I needed money	240/286	83.9	83.5	78.0–88.9
Other	11/286	3.8	3.8	1.5–6.1	
Total number of different sexual partners who she had sexual intercourse with in the past one month	Range	1–50			
	Mean ± SD	10.2 ± 6.6		10.6 ± 6.7	
	Median	9.0		9.0	
	<5	43/286	15.0	12.6	8.7–16.6
	5–10	140/286	49.0	51.5	44.9–58.0
	11–20	91/286	31.8	32.9	26.1–39.6
	More than 20	12/286	4.2	3.0	1.3–4.7
Where most new transactional sex clients are met	At clients' home	51/286	17.8	14.3	10.1–18.5
	At FSW's home	104/286	36.4	36.6	29.7–43.4
	Beach	19/286	6.6	6.2	3.4–9.1
	Hotel or restaurant	39/286	13.6	12.4	8.3–16.5
	Khat shop	2/286	0.7	0.3	0–0.7
	Tea shop	9/286	3.1	3.1	0.9–5.2
	They call me	56/286	19.6	25.4	18.6–32.1
	Through pimps or <i>dalals</i>	1/286	0.3	0.1	0–0.3
	Other	5/286	1.7	1.4	0.3–2.6
Place where FSW and client engage in transactional sex	At home she shares with family	105/286	36.7	33.1	26.8–39.3
	At home she shares with other FSWs	34/286	11.9	13.4	8.4–18.6
	Hotel or restaurant	50/286	17.5	15.6	11.0–20.1
	Khat shop	1/286	0.3	0.3	0–0.8
	Tea shop	5/286	1.7	1.1	0.3–1.8
	The client's house	9/286	31.1	35.7	28.9–42.5
	Other	2/286	0.7	0.8	0–1.8
Working through a pimp		61/284	21.5	21.2	12.6–29.7
Sharing the money earned from sexual transaction with the pimp		59/59	100	100	-
Amount shared/given out to the other person	One third	33/59	55.9	56.1	41.5–70.8
	Half	24/59	40.7	41.9	27.8–56.4
	Two thirds	2/59	3.4	2.0	0–5.6

3.5.9. Sexual history with paying clients

The majority of FSW (64.2%) used a (male) condom the last time they had a sexual intercourse with a client, and most often it was the client (64.9%) who suggested condom use. Among those FSWs who did not use a condom at last sex with a client, most often it was because they do not like condoms (35.6%) or they do not think a condom is necessary (32.8%). Only slightly over one third of FSWs (37.8%) used condoms consistently in the last 30 days. On the last day they worked, FSWs on average sold sex to two clients, earning an average of USD 24.1 for last sexual intercourse with a client. FSWs in Bossaso believe that khat selling (26.8%) and truck driving (18.7%) are the most common occupations of their clients.

Table 66: Sexual history of Bossaso FSWs with paying clients

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
GARPR 3.6: Proportion who used a condom at last sexual intercourse with a client	184/284	64.8	64.2	57.8–70.6	
Type of condom used	Male condom	184/184	100	100	-
Person who suggested condom use at last sexual intercourse	Joint decision	23/184	12.5	13.3	6.7–20.0
	Client	118/184	64.1	64.9	56.4–73.6
	FSW	43/184	23.4	21.7	14.1–29.3
Reason for not using condom at last sexual intercourse	Used other contraceptive	17/100	8.0	28.0	7.1–52.2
	We didn't have	1/100	1.0	0.6	0–1.5
	I don't like them	37/100	37.0	35.6	23.4–47.5
	Client objected	15/100	15.0	17.9	9.0–27.6
	Didn't think it was necessary	31/100	31.0	32.8	72.4–91.0
	Didn't think of it	12/100	12.0	8.2	3.3–11.8
	Don't know where to buy	10/100	10.0	8.0	2.8–12.6
	Condoms transmit HIV	1/100	1.0	3.2	1.7–5.5
	Other	5/100	5.0	4.2	1.2–7.1
Don't know	21/100	21.0	14.8	6.4–21.0	
Consistent condom use with clients during the last 30 days (1 month)	Every time	97/284	34.2	37.8	30.9–44.6
	Almost every time	39/284	13.7	10.8	7.1–14.6
	Sometimes	57/284	20.1	20.7	14.6–22.7
	Never	91/284	32.0	30.6	25.9–35.2
Number of clients on the last working day	Range	1–10			
	Mean ± SD	2.2 ± 1.3		2.2 ± 1.4	
	Median	2.0		2.0	
	1	91/286	31.8	35.3	28.3–42.4
	2	110/286	38.5	38.6	31.8–45.4
	3	49/286	17.1	16.5	11.3–21.7
Amount of money received for last sexual intercourse with a client (in USD)	4 or more	36/286	12.6	9.6	6.3–12.9
	Range	1.2–300			
	Mean ± SD	23.4 ± 31.6		2.2 ± 1.4	
	Median	18.0		2.0	
	0–5	35/286	31.8	35.3	28.3–42.4
	6–10	51/286	38.5	38.6	31.8–45.4
	11–20	105/286	17.1	16.5	11.3–21.7
	More than 21	95/286	12.6	9.6	6.3–12.9

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Typical occupations of clients (multiple answers possible)	Businessman	49/286	17.1	17.9	12.8–22.9
	Truck driver	177/286	61.9	64.9	58.3–71.6
	Government worker	51/286	17.8	15.0	10.7–19.5
	Fishermen	82/286	28.7	28.1	22.2–34.2
	Police	86/286	30.1	26.4	20.7–32.3
	Port worker	114/286	39.9	39.8	33.1–46.5
	Tea client	75/286	26.2	28.7	22.5–35.0
	Khat client	82/286	28.7	32.1	25.3–38.9
	Unemployed	10/286	3.5	2.5	1.2–3.9
	Khat seller	155/286	54.2	58.1	50.1–65.2
	Humanitarian worker	7/286	2.4	3.5	0.3–6.7
	Military	10/286	3.5	3.8	1.2–6.5
	Other	16/286	5.6	6.7	2.3–11.2
Most common occupation among clients	Businessman	18/285	6.3	7.8	3.5–12.4
	Fishermen or seafarer	32/285	11.2	9.9	5.9–13.8
	Government worker				
	Humanitarian aid worker	11/285	3.9	3.1	1.4–4.9
	Khat client	1/285	0.4	0.2	0–0.5
	Khat seller				
	Police	18/285	6.3	5.9	2.8–9.0
	Port worker	69/285	24.2	26.8	20.2–33.5
	Tea client	30/285	10.1	8.5	5.6–11.5
	Truck driver	38/285	13.3	11.6	7.5–15.7
	Other	8/285	2.8	3.9	0–8.4
		52/285	18.2	18.7	14.2–23.1
		8/285	2.8	3.6	1.2–5.9

3.5.10. Sexual history with non-paying partners

Among FSWs who had a non-paying sexual partner in the past 30 days (69.2%), slightly over half have (55.7%) used a condom at last sex with their last non-transactional partner, although again, in the majority of cases, it was the partner who suggested using a condom (54.4%). FSWs who had a non-paying partner in the last 30 days on average had sexual intercourse with them less than once a week (i.e., three times), as shown in Table 67.

Table 67: Sexual history of Bossaso FSWs with non-paying partners

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Had sexual intercourse with a non-paying partner over the last 30 days (1 month)		208/286	72.7	69.2	62.8–75.7
Number of times she had sexual intercourse with non-paying partners over the last 30 days (1 month) (among those who had a non-paying partner in the last 30 days)	Range	1–12			
	Mean ± SD	3.3 ± 2.4		3.4 ± 2.5	
	Median	3.0		3.0	
	1	51/208	24.5	31.5	23.3–41.0
	2–5	123/208	59.1	52.1	42.6–60.4
More than 5	34/208	16.3	16.4	10.4–22.4	
Condom use during last non-paying/non-transactional sexual intercourse with partner (among those who had a non-paying partner in the last 30 days)		106/208	51.0	55.7	48.3–63.4

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Person who suggested condom use during last non-paying/non-transactional sexual intercourse with partner (among those who had a non-paying partner in the last 30 days)	Joint decision	15/106	14.2	12.7	4.7–20.2
	Partner	60/106	56.6	54.4	38.9–68.8
	FSW	31/106	29.2	33.0	18.9–48.4
Reason for not using condom during last non-transactional sexual intercourse (among those who had a non-paying partner in the last 30 days) (multiple answers possible)	Didn't think it was necessary	14/98	13.7	14.3	6.1–22.5
	Didn't think of it	10/98	9.8	9.6	1.9–17.2
	Do not know where to but one	9/98	8.8	7.3	0.4–13.9
	Don't like them	19/98	18.6	17.6	9.2–25.3
	Partner objected	22/98	21.6	26.7	15.8–38.6
	Too expensive	1/98	1.0	0.5	0.3–0.5
	Used other contraceptives	13/98	12.7	14.1	3.7–24.6
	We did not have one with us	1/98	1.0	1.3	0.9–1.6
	Other	1/98	2.0	2.0	1.4–2.5
	Don't know	23/98	22.5	21.8	12.0–31.7
	Condoms transmit HIV	1/98	1.0	1.3	0.9–1.6

3.5.11. Availability and use of male condom

Most FSWs in Bossaso have ever heard of or seen a male condom (92.3%). Among them, most have also ever used a male condom (72.9%) and know a place or person where to obtain male condoms (86.4%). Pharmacy is the most preferred (63.2%) ideal place to obtain male condoms, although very few FSWs have received male condoms (0.7%) or counselling on condom use (0.2%) three months prior to this survey. Most FSWs (62.6%) perceive male condoms to be affordable, although it is usually not them but their clients (71.4%) who supply condoms, as shown in Table 68.

Table 68: Availability and use of male condom among Bossaso FSWs

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Ever heard of a male condom before today	255/286	89.2	92.3	89.8–95.0	
Ever used a male condom	198/255	77.6	72.9	66.1–79.5	
Knows place or person where to obtain male condoms	222/255	87.1	86.4	81.5–91.4	
Places or persons she knows where to obtain male condoms (multiple answers possible)	Pharmacy	217/222	97.7	96.8	93.5–96.8
	Private hospital/clinic	104/222	46.8	48.6	40.7–56.7
	Public hospital	79/222	35.6	38.1	30.3–46.1
	MCH centre	155/222	69.8	71.0	63.8–78.3
	Friend	65/222	29.3	31.0	23.0–38.1
	Clients	3/222	1.4	0.7	0–1.2
	Other sex worker	11/222	5.0	3.5	1.5–5.4
	Local NGO	3/222	1.4	1.4	0–2.9
	Shop	5/222	2.3	1.2	0.3–2.0
Ideal place to obtain male condoms	Client	1/238	0.4	0.2	0–0.3
	Friend	20/238	7.8	8.7	2.6–14.9
	MCH centre	14/238	5.5	7.0	1.7–12.3
	Other sex worker	1/238	0.4	0.1	0–0.3
	Pharmacy	156/238	61.2	63.2	55.9–70.5
	Private hospital/Clinic	8/238	3.1	2.2	1.7–2.7
	Public hospital	3/238	1.2	2.9	0–8.9
	Shop	32/238	12.5	14.4	9.4–19.5
	Other	3/238	1.2	1.1	0.5–1.6

Characteristic	Sample proportions			Population estimates	
	n/N	%	%	95% confidence interval	
Usually carry condoms with her		175/255	68.6	66.3	59.3–73.2
Received condoms (e.g. through an outreach service, hospital, VCT centre, TB centres, NGO, Pharmacy, FP clinic, MCH) in the past three months		4/255	1.6	0.7	0.2–1.2
Received counselling on condom use and safe sex in the past three months		1/255	0.4	0.2	0.1–0.2
Person who usually supplies the condoms	Client	167/226	73.9	71.4	63.7–78.9
	I never use a condom	39/226	17.3	19.9	13.1–26.9
	FSWs	20/226	8.8	8.7	4.0–13.3
Affordability of male condoms	Affordable	147/231	63.3	62.6	54.3–70.7
	Somewhat affordable	51/231	22.1	21.6	16.0–27.1
	Not affordable	4/231	1.7	1.6	0.3–2.9
	Don't know	29/231	12.6	14.3	8.1–20.6

3.5.12. Availability and use of female condom

Unlike with male condoms, few FSWs in Bossaso have ever heard (38.1%) of female condoms. Among those who have, few have used them (13.4%) or know where to obtain them (12.5%), as shown in Table 69.

Table 69: Availability and use of female condom among Bossaso FSWs

Characteristic	Sample proportions			Population estimates
	n/N	%	%	95% confidence interval
Ever heard of a female condom before today	95/286	33.2	38.1	30.6–45.6
Ever used a female condom	15/95	15.8	13.4	3.3–23.0
Knows place or person where to obtain female condoms	17/95	17.9	12.5	0–24.5
Places or persons do you know where she can obtain female condoms (multiple answers possible)	Friend	7/17	41.2	0–51.6
	Other sex workers	9/17	52.9	0–43.3
	MCH centre	1/17	5.9	1.5–3.8
	Pharmacy	8/17	47.0	38.5–96.2

3.5.13. Population size estimation

Using successive sampling-population size estimation (SS-PSE) method, the network size information of individual FSW participants was entered into RDS Analyst to generate measures of central tendency to represent population size estimates. Therefore, the mean, median and mode FSW population estimate in Bossaso is 1,473, 1,189 and 876 respectively. Although the findings of size estimation using SS-PSE are higher, this closely approximates population size estimates generated in 2016, indicating 911 as the average FSW estimate in Mogadishu (IOM, 2016). However, when using wisdom of the crowd method, much lower estimates were generated. The mean FSW estimate in Bossaso using wisdom of the crowd method is 76.5, with a standard deviation of 72.2 while ranging from 3 to 300 FSWs. When asked regarding their FSW network size, the average number of FSW they knew by name and knew them to have had sex in the last 12 months in exchange for money, gifts or favour was 7.9 FSWs, while the minimum was 1 and maximum was 27 FSWs.

3.5.14. HIV testing history and avoidance of HIV services

Although more than three quarters of FSWs (80.7%) in Bossaso know where to go for HIV test, only 16.5 per cent know their HIV status from an HIV test. Fear of or concern about stigma by staff or neighbours was cited by majority of the FSWs (75.6%) as the reason for having never sought for an HIV test. Overall, 69.8 per cent of FSWs in Bossaso avoid HIV services due to stigma and discrimination among FSWs as shown in Table 70.

Table 70: HIV testing history and avoidance of HIV services among Bossaso FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Knows where to go for a confidential HIV test		218/286	76.2	80.7	76.1 – 85.2
Known places where one can get tested for HIV (multiple answers possible)	Government hospital	143/218	65.6	60.5	52.4–68.2
	MCH centre	109/218	50.0	48.9	40.8–57.1
	Pharmacy	59/218	27.1	29.8	21.9–38.0
	Government TB centre	75/218	34.4	35.9	27.5–44.5
	Government VCT	66/218	30.3	29.2	22.0–36.3
	Mobile counselling	9/218	4.1	4.2	0.9–7.5
	Private facility	55/218	25.2	26.4	18.6–34.3
Knows her HIV status from an HIV test		47/286	16.4	16.5	11.4–21.7
Last tested for HIV	Less than 6 months	16/47	34.0	43.8	25.0–66.2
	6–12 months	15/47	31.9	21.3	5.8–32.8
	More than 12 months	16/47	34.0	34.9	16.2–54.0
HIV test result at last HIV test	Positive	2/47	4.3	8.1	0–26.1
	Negative	44/47	93.6	89.4	71.4–89.0
	Indeterminate	1/47	2.1	2.4	1.2–3.9
Voluntarily had the HIV test, or was required to have the test	Required	7/47	14.9	25.5	12.3–41.9
	Voluntary	40/47	85.1	74.5	58.1–87.8
Proportion who revealed to the health provider that they sell sex during their most recent HIV counselling/testing		10/47	21.3	20.0	6.7–32.5
Reasons for having never sought for an HIV test	Fear/concern about violence	14/236	5.9	6.9	2.8–11.1
	Fear/concern about stigma	176/236	74.6	75.6	67.8–83.7
	I don't know where to go for HIV test	7/236	3.0	2.5	0.7–4.3
	Other	11/236	4.7	6.6	0.6–12.9
	Don't know	28/236	11.9	8.3	4.9–11.2
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations		190/283	67.1	69.8	63.6–76.1

3.5.15. Stigma and discrimination related to HIV and AIDS

Two major forms of stigma and discrimination cited by FSWs in Bossaso included verbal insults (16.5%) and refusal for housing (11.3%). FSW who were verbally insulted, were in most cases insulted by their family or relatives (59.6%), as shown in Table 71.

Table 71: Stigma and discrimination related to HIV and AIDS among Bossaso FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Have been refused health care in the past 12 months because someone believed she sells sex to men		0/286	0.0	0.0	-
Have been refused employment in the past 12 months because someone believed she sells sex to men		6/286	2.1	1.2	0.5–1.9
Have been refused to attend prayers at the mosque in the past 12 months because someone believed she sells sex to men		0/286	0.0	0.0	-
Have been refused housing in the past 12 months because someone believed she sells sex to men		39/286	13.6	11.3	7.7–15.0
Have been refused police assistance in the past 12 months because someone believed she sell sex to men		1/286	0.3	0.1	0–0.3
Have had verbal insults directed at her in the past 12 months because someone believed she sells sex to men		58/286	20.3	16.5	12.0–21.0
Person who last directed a verbal insult at her	Client	16/58	27.6	27.4	13.6–41.0
	Family or relative	33/58	56.9	59.6	44.6–75.7
	Other sex worker	1/58	1.7	1.7	0–3.9
	Police	1/58	1.7	1.3	0–1.6
	Social acquaintance	5/58	8.6	6.6	2.4–9.8
	Other	2/58	3.4	3.4	0–6.6

3.5.16. Physical and sexual violence

Many FSWs in Bossaso have been hit, kicked or beaten in the past 12 months because someone believed they sell sex to men (14.3%), in most cases by their male clients (75.8%). In addition, 11.7 per cent of FSWs have been physically forced to have sexual intercourse against their will, again, in most cases by their clients (98.1%). Among them, 60.2 per cent sought medical treatment and 59.4 per cent reported the cases to police. FSWs in Bossaso have also experienced other forms of physical and sexual violence from their partners and clients; in particular, they were slapped (16%), pushed or shoved (14.8%), hit with a fist or something else that could hurt them (14.7%), and kicked, dragged or beaten up (14.8%), as shown in Table 72.

Table 72: Physical and sexual violence among Bossaso FSWs

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Have been hit, kicked or beaten in the past 12 months because someone believed she sells sex to men		49/286	17.1	14.3	9.9–18.8
Person who last hit, kicked or beat her	Client	38/49	77.6	75.8	58.1–92.5
	Family or relative	4/49	8.2	11.5	0–28.7
	Other sex worker	3/49	6.1	5.3	0–10.6
	Pimp	1/49	2.0	2.9	0–3.3
	Police	1/49	2.0	1.5	1.4–1.4
	Other	2/49	4.1	2.9	0–14.9
A client or partner physically forced her to have sexual intercourse against her will in the past 12 months		37/286	12.9	11.7	7.3–15.9

Characteristic	Sample proportions			Population estimates	
		n/N	%	%	95% confidence interval
Person who physically forced her to have sexual intercourse against her will	Client	36/37	97.3	98.1	88.0–98.6
	Non-paying partner	1/37	2.7	1.9	0–1.9
Proportion who sought medical treatment after being physically forced to have sexual intercourse against her will		23/37	62.2	60.2	24.7–94.5
Proportion who reported this incident to the police		24/37	64.9	59.4	39.7–75.7
In the past 12 months, a client or partner slapped her or threw something that could hurt her		52/286	18.2	16.0	11.5–20.4
Proportion who was pushed or shoved by a client or partner in the past 12 months		52/286	18.2	14.8	10.6–18.9
In the past 12 months, a client or partner hit her with a fist or something else that could hurt her		51/286	17.8	14.7	10.7–18.8
Proportion who was kicked, dragged or beat up by a client or partner in the past 12 months		51/286	17.8	14.8	10.6–19.1
Proportion who was choked or burned by a client or partner in the past 12 months		14/286	4.9	3.5	2.0–5.0
Proportion whose client or partner threatened or used a gun, knife or other weapon against her in the past 12 months		21/286	7.3	5.4	3.3–7.3
Proportion forced by client or partner in the past 12 months to do something sexual she found degrading or humiliating		37/286	12.9	11.5	7.3–15.7
Proportion whose client or partner in the past 12 months made her afraid of what would happen if they did not have sexual intercourse		41/286	14.3	11.8	8.0–15.7

3.5.17. Programme coverage

Overall, the coverage of HIV prevention programmes among FSWs in Bossaso is very low (0.2%), although nearly half of the FSWs (45.4%) in Bossaso are aware of local NGOs that deliver non-medical assistance or advice to FSWs and 59.4 per cent of FSWs in Bossaso have attended meeting(s) to discuss STI or HIV and AIDS, as shown in Table 73.

Table 73: Programme coverage among Bossaso FSWs

Characteristic	Sample proportions			Population estimates	
		n/N	%	%	95% confidence interval
Proportion who are aware of local NGO here that deliver non-medical assistance or advice to FSWs		123/286	43.0	45.4	38.7–52.1
Attended meeting(s) to discuss STI or HIV/AIDS during the last 12 months		167/286	58.4	59.5	53.0–65.9
Services/items received from an outreach worker in the past 12 months (multiple answers possible)	Condom	3/268	1.1	0.6	0.1–1.0
	Pamphlets	7/268	2.6	3.4	0.9–5.9
	Referral	3/268	1.1	2.0	0–4.7
	Lubricants	1/268	0.4	1.2	0–3.6
	None	258/268	96.3	96.8	94.3–99.4
Proportion of referred FSW who went to referred site to receive medical care		1/3	33.3	61.0	0–63.6
Given condom in the past three months		4/255	1.6	0.7	0.2–1.2

Characteristic	Sample proportions		Population estimates	
	n/N	%	%	95% confidence interval
Received counselling on condom use and safe sex in the past three months	1/255	0.4	0.1	0–0.4
Tested for STIs in the past three months	77/286	26.9	30.5	23.6–37.4
GARPR 3.7: Coverage of HIV prevention programmes among key populations	1/286	0.3	0.2	0.0–0.4

3.5.18. Alcohol and drug use in the past three months

With regard to alcohol and drug use, khat and cigarettes are the most commonly consumed, with almost all FSWs having consumed them in the past three months and about half of FSWs consuming khat and/or cigarettes at least two–three times a week. Alcohol consumption and marijuana/hashish use is far less common (13.3% and 30.8% respectively). Finally, 12.5 per cent of FSWs in Bossaso have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat or smoked marijuana/hashish/cigarette, as shown in Table 74.

Table 74: Alcohol and drug use among Bossaso FSWs in the past three months

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	4 or more times a week	9/286	3.1	3.6	0.6–6.8
	2–3 times a week	6/286	2.1	1.7	0.5–3.0
	2–4 times a month	9/286	3.1	3.0	0.6–5.5
	Monthly or less	18/286	6.3	4.8	2.2–7.4
	Never	244/286	85.3	86.7	82.1–91.2
Frequency of chewing khat during the past three months	4 or more times a week	94/286	32.9	35.5	28.5–42.4
	2–3 times a week	47/286	16.4	18.4	12.9–24.0
	2–4 times a month	12/286	4.2	2.8	1.5–4.1
	Monthly or less	125/286	43.7	40.9	33.8–47.9
	Never	8/286	2.8	2.4	0–5.2
Frequency of smoking marijuana or hashish during the past three months	4 or more times a week	16/286	5.6	3.6	2.1–5.2
	2–3 times a week	17/286	5.9	6.8	3.0–10.6
	2–4 times a month	15/286	5.2	4.2	1.7–6.7
	Monthly or less	50/286	17.5	16.1	11.2–21.1
	Never	188/286	65.7	69.2	62.9–75.4
Frequency of smoking cigarette during the past three months	4 or more times a week	139/286	48.6	52.7	45.6–60.0
	2–3 times a week	6/286	2.1	1.7	0.3–3.1
	2–4 times a month	2/286	0.7	0.5	0–1.1
	Monthly or less	131/286	45.8	42.2	35.4–49.0
	Never	8/286	2.8	2.7	0.3–5.1
Frequency of smoking shisha during the past three months	4 or more times a week	23/286	8.0	7.1	4.0–10.1
	2–3 times a week	34/286	11.9	13.3	8.1–18.4
	2–4 times a month	47/286	16.4	17.1	11.9–22.2
	Monthly or less	54/286	18.9	18.1	13.1–23.2
	Never	128/286	44.8	44.5	37.9–51.1
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette	42/286	14.7	12.5	8.3–16.8	
Frequency of injecting drugs during the past three months	0/286	0.0	0.0	-	

3.5.19. Sociodemographic correlates of safer HIV-related behaviour among FSWs in Bossaso

Finally, multivariable analyses were used to identify sociodemographic correlates of safer HIV-related behaviour, specifically, condom use at last transactional sex, knowledge of HIV status from an HIV test in the past 12 months, and HIV composite knowledge. Only one variable in the model assessing factors associated with HIV knowledge was statistically significant, as shown in Table 75. FSWs with more than USD 100 monthly income are less likely (aOR = 0.5, 95% confidence interval = 0.2–0.9) to have answered correctly to all five questions regarding HIV knowledge.

Table 75: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission among Bossaso FSWs

Response	Preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission		Adjusted OR (95% confidence interval)	P-value
	n/N	%		
Total	57/286	19.9		
Age				
25+	40/219	18.3	0.6 (0.3–1.3)	0.2
<25	17/67	25.4	1.0	
Level of education				
None	40/197	20.3	1.0 (0.5–2.2)	0.9
Some education	17/89	19.1	1.0	
Overall monthly household income				
< 100	38/157	24.2	1.0	
>=100	19/129	14.7	0.5 (0.2–0.9)	0.03
Marital status				
Single	4/20	20.0	2.0 (0.5–8.0)	0.3
Never married	53/266	19.9	1.0	
Number of people she is currently supporting				
0–5	44/219	20.1	0.7 (0.3–1.4)	0.3
>5	13/67	19.4	1.0	
Length of stay in Bossaso				
Less than 2 years	6/34	17.7	1.0	
More than 2 years	51/252	20.2	0.9 (0.3–2.3)	0.8
Currently earn money doing other work other than sex work				
Yes	42/205	20.5	1.1 (0.6–2.3)	0.7
No	15/81	18.5	1.0	

Note: Bold P-value: Statistically significant.

3.6. Bossaso uniformed personnel

3.6.1. Sociodemographic characteristics

A total of 287 uniformed personnel participated in the study (43.7% and 56.3% military and police personnel respectively). The average age of uniformed personnel in Bossaso is 32.8 years, with the majority (42.5%) of respondents aged 25 to 34 years. Most uniformed personnel (50.9%) had no education, and three quarters of them (85.2%) had stayed in Bossaso for more than two years. Furthermore, the majority are married (61.8%), with an average of 4.1 dependants but having an average monthly income of USD 131.2. Most uniformed personnel (99.6%) have Somalia nationality as shown below in Table 76.

Table 76: Sociodemographic characteristics of Bossaso uniformed personnel

Characteristic	Response	Sample proportions		Population estimates			
		n/N	%	%	95% confidence interval		
Age (Years)	Mean ± SD	32.8 ± 9.9			31.7	34.0	
	Range	18–68					
	< 25 years	57/287	19.9	19.3	15.0	24.5	
	25+ years	230/287	80.1	80.7	75.5	85.1	
	18–24	57/287	19.9	19.3	15.0	24.5	
	25–34	125/287	43.6	42.5	36.6	48.6	
	35–44	67/287	23.3	23.8	19.0	29.4	
	45 +	38/287	13.2	14.4	10.5	19.4	
	Category of uniformed personnel	Military personnel	134/287	46.7	43.7	36.9	50.8
	Police personnel	153/287	53.3	56.3	49.2	63.1	
Education level	None	123/287	42.9	50.9	48.4	58.0	
	Primary	125/287	43.6	40.1	33.3	47.3	
	Secondary	33/287	11.5	7.6	5.0	11.5	
	University/College	6/287	2.1	1.3	0.5	3.3	
Nationality	Somalia	286/287	99.7	99.6	97.1	99.9	
	Somaliland	1/287	0.4	0.4	0.0	2.9	
Length of stay in Bossaso	Less than 7 days	1/287	0.4	0.5	0.0	3.4	
	7 days–1 month	2/287	0.7	1.0	0.2	3.9	
	2–3 months	4/287	1.4	1.8	0.7	4.7	
	4–6 months	2/287	0.7	0.9	0.2	3.4	
	7–11 months	3/287	1.1	1.0	0.3	3.1	
	1–2 years	27/287	9.4	9.7	6.6	14.0	
	More than 2 years	248/287	86.4	85.2	80.2	89.1	
Frequency of visiting his family	Daily	123/287	42.9	41.8	36.0	47.9	
	Once in a week	48/287	16.7	16.9	12.8	22.0	
	>once in a week	13/287	4.5	4.8	2.7	8.3	
	Once in a month	30/287	10.5	8.5	5.9	12.1	
	Twice in a month	21/287	7.3	7.8	5.1	11.9	
	2–3 months	46/287	16.0	18.2	13.8	23.6	
	>3 months	6/287	2.1	2.0	0.9	4.5	
Marital status	Single	58/287	20.2	19.5	15.2	24.7	
	Married	172/287	59.9	61.8	55.8	67.5	
	Divorced	52/287	18.1	18.1	11.5	24.8	
	Widowed	5/287	1.7	1.7	0.7	4.1	
Number of dependants	Mean ± SD	4.1 ± 3.3			3.7	4.5	
	Range	0–19					
Number of wives	1	122/172	70.9	70.7	63.0	77.3	
	2	44/172	25.6	25.2	19.0	32.6	
	3	6/172	3.5	4.2	1.9	9.2	
	4	0/172	-	-	-	-	
Frequency of visiting neighbouring countries	Never	249/287	86.8	86.0	81.2	89.8	
	Weekly	7/287	2.4	2.8	1.3	5.9	
	Monthly	2/287	0.7	0.7	0.2	2.9	
	Every 2–3 months	1/287	0.4	0.5	0.0	3.4	
	After > 3 months	28/287	9.8	10.0	6.9	14.3	
Overall monthly income in USD	< 100	136/287	47.4	47.9	41.9	54.0	
	>=100	151/287	52.6	52.1	46.0	58.1	
	Mean ± SD	131.2 ± 86.3			121.1	141.2	
	Range	20–750					

3.6.2. HIV and syphilis prevalence

The overall prevalence of HIV infection among uniformed personnel in Bossaso is 1.1 per cent, whereas the prevalence of syphilis infection is 0.7 per cent. HIV and syphilis co-infection is 0.4 per cent as shown in Table 77.

Table 77: HIV and syphilis prevalence among Bossaso uniformed personnel

Characteristic	Sample proportions		Population estimates			
	n/N	%	%	95% confidence interval		
HIV	3/287	1.1	1.1	0.3	3.5	
Syphilis – Ever infected	2/287	0.7	0.7	0.2	2.9	
Syphilis – Active infection	2/287	0.7	0.7	0.2	2.9	
HIV and syphilis comorbidity	1/287	0.4	0.4	0	2.9	

3.6.3. Patterns of STI care and treatment seeking behaviour

More uniformed personnel have heard about HIV/AIDS (99.6%) than other STIs (83.5%). The proportion of uniformed personnel tested for STI in the past three months is 43.9 per cent, compared to those diagnosed to have STI infection (13.7%) 12 months prior to the IBBS survey. Contrastingly, none of the uniformed personnel has experienced either an abnormal penile discharge or penile ulcer or sore in the past 12 months prior to this study as shown in Table 78.

Table 78: Patterns of STI care and treatment seeking behaviour

Characteristic	Response	Sample proportions		Population estimates			
		n/N	%	%	95% confidence interval		
Ever heard of HIV/AIDS	Yes	286/287	99.7	99.6	96.9	99.9	
Heard about other infections that can be transmitted through sex	Yes	239/287	83.3	83.5	78.5	87.5	
Tested for STIs in the past 3 months	Yes	105/239	43.9	43.9	37.4	50.6	
Diagnosed by a doctor or medical professional to have had STI in the past 12 months	Yes	32/239	13.4	13.7	9.7	19.0	
Had an abnormal discharge from the penis in the past 12 months	Yes	0/285	0.0	0.0	-	-	
Had a sore or ulcer on or near the penis or anus in the last 12 months	Yes	0/286	0.0	0.0	-	-	

3.6.4. Knowledge on transmission of HIV and STI

The uniformed personnel generally have good knowledge scores on individual knowledge components. However, their overall knowledge on how to correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is less than one quarter (24.4%) as shown in Table 79.

Table 79: Knowledge on transmission of HIV and STI among Bossaso uniformed personnel

Characteristic	Response	Sample proportions		Population estimates			
		n/N	%	%	95% confidence interval		
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	275/287	95.8	95.5	92.0	97.5	
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	165/287	57.5	57.8	51.7	73.7	
It is possible for a healthy-looking person to have HIV/AIDS	Yes	259/286	90.6	89.1	84.3	92.5	
People can get HIV from mosquito bites	No	101/287	35.2	34.4	28.9	40.4	

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
People can get HIV by sharing food with a person who has HIV/AIDS	No	175/287	61.0	61.6	55.5	67.3
Heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	220/287	76.7	75.0	69.3	80.0
HIV can be transmitted from mother to her baby during pregnancy	Yes	238/287	82.9	82.9	77.7	87.0
HIV can be transmitted from mother to her baby during delivery	Yes	256/287	89.2	89.4	85.1	92.6
HIV can be transmitted from mother to her baby by breastfeeding	Yes	258/287	89.9	90.7	86.7	93.6
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	195/287	67.9	66.6	60.5	72.1
GARPR 5.1: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	72/287	25.1	24.4	19.6	30.0

3.6.5. General sexual history

The majority (83.3%) of uniformed personnel have had vaginal sex compared to none who have ever had anal sex. The average age at first vaginal sex among uniformed personnel in Bossaso is 20.3 years. Only 8.6 per cent of uniformed personnel admit to have ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse, while tea shops (43.3%) and khat shops (35.4%) are being used as places to engage in transactional sex as shown in Table 80.

Table 80: General sexual history of Bossaso uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have ever had vaginal sex with a woman	Yes	234/283	82.7	83.3	78.3	87.4
Age at first vaginal sex	Mean ± SD Range	20.3 ± 3.6 10–32			19.8	20.7
Ever had anal sex with a woman	Yes	0/282	0.0	0.0	-	-
Ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse	Yes	23/285	8.1	8.6	5.7	12.9
Number of different sexual partners in total he had sexual intercourse with in the past one month	Mean ± SD Range	1.4 ± 0.7 1–2			1.1	1.7
Where uniformed personnel meet most of their new transactional sex clients	Hotel/Restaurant	6/23	26.1	25.4	10.5	49.8
	Khat shop	11/23	47.8	45.1	24.4	67.6
	Tea shop	5/23	21.7	23.1	9.0	47.9
	They call	1/23	4.4	6.4	0.8	37.5
Where uniformed personnel most often engage in transactional sex	Car/vehicle	1/23	4.4	6.4	0.8	37.5
	Hotel/Restaurant	3/23	13.0	8.5	2.4	26.4
	Khat shop	7/23	30.4	35.4	16.9	59.7
	Tea shop	11/23	47.8	43.3	23.1	66.0
	Client's house	1/23	4.4	6.4	0.8	37.5

3.6.6. Sexual history with paying clients

Three quarters (75.8%) of uniformed personnel who ever had exchanged sexual intercourse for money goods or favour, used a male condom in their last transactional sexual intercourse, while 20.6 per cent never used condoms with transactional clients over the last one month. In most cases, it is the uniformed officer (92.2%) who suggest condom use. An average amount of USD 6.7 was paid by a uniformed officer to a FSW during last transactional sex, while the majority (81.7%) paid between USD 0–5 as shown in Table 81.

Table 81: Sexual history of Bossaso uniformed personnel with paying clients

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Used a condom during last transactional sexual intercourse with a client	Yes	17/22	77.3	75.8	49.9	90.8
Type of condom	Male condom	17/17	100	100	-	-
Person who suggested condom use at last transactional sexual intercourse	FSW	1/17	5.9	7.8	0.9	44.8
	Uniformed personnel	16/17	94.1	92.2	55.2	99.1
Frequency of using condoms with transactional clients over the last 30 days (1 month)	Almost every time	4/23	17.4	13.6	4.6	34.2
	Sometimes	14/23	60.9	65.7	42.3	83.3
	Never	5/23	21.7	20.6	7.6	45.1
Number of FSWs uniformed officer had sex with on the last day	Mean ± SD	1.2 ± 0.4			1.0	1.3
	Range	1–2				
Amount of money paid during last transactional sex in USD	0–5	19/23	82.6	82.1	57.6	94.0
	6–10	3/23	13.0	15.0	4.4	40.5
	>= 21	1/23	4.4	2.0	0.3	20.6
	Mean ± SD	6.7 ± 12.8			1.2	12.2
	Range	2–65				

3.6.7. Sexual history with non-paying partners

Whereas 75.8 per cent of uniformed personnel reported using a condom during their last sexual intercourse with transactional clients, only 17.1 per cent of uniformed personnel used a condom with their last non-transactional client. The average number of times a uniformed personnel had sexual intercourse with non-paying clients over the last 30 days is 1.3 times, and in all cases, it is the uniformed personnel who suggested condom use during last non-transactional sex as shown in Table 82.

Table 82: Sexual history of Bossaso uniformed personnel with non-paying partners

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of times uniformed officer had sexual intercourse with a non-transactional sexual partner over the last 30 days (1 month)	Mean ± SD Range	1.3 ± 2.5 0–28			1.0	1.6
Used a condom last time he had sexual intercourse with non-paying/ transactional sexual partner	Yes	18/111	16.2	17.1	10.8	26.1
Person who suggested condom use at last non-transactional sexual intercourse	Uniformed personnel	18/18	100	100	-	-

3.6.8. Availability and use of male condom

Although 90.4 per cent of uniformed personnel in Bossaso have ever heard of or seen a male condom and 40.5 per cent know a place or person where to obtain them, only 11.2 per cent have ever used a male condom. Very few uniformed personnel received male condoms (5.6%) or counselling on condom use (33%) 12 months prior to this survey. Half (53.5%) of uniformed personnel perceive male condoms as not affordable as shown in Table 83.

Table 83: Availability and use of male condom

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a male condom	Yes	258/287	89.9	90.4	86.4	93.4
Ever used a male condom with a sexual partner	Yes	27/258	10.5	11.2	7.7	16.1
Knows of a place or person where to obtain male condoms	Yes	110/258	42.6	40.5	34.4	46.9
Usually carries condoms	Yes	22/257	8.6	9.6	6.3	14.4
Received condoms in the past three months	Yes	13/258	5.0	5.6	3.2	9.5
Received counselling on condom use and safe sex in the past three months	Yes	85/258	33.0	33.0	27.2	39.3
Person who usually supplies the condoms	Client (FSW)	1/250	0.4	0.6	0	4.0
	Never use a condom	224/250	89.6	88.3	83.1	92.0
	Myself	25/250	10.0	11.2	7.6	16.3
Affordability of male condom	Affordable	35/245	14.3	14.5	10.4	19.8
	Not affordable	128/245	52.2	53.5	46.9	60.0
	Somewhat affordable	82/228	33.5	32.0	26.	38.4

3.6.9. Availability and use of female condom

Unlike male condoms, fewer uniformed personnel in Bossaso have ever heard (13.1%) or used (9.1%) female condoms although only 5.6 per cent know where to obtain them as shown in Table 84.

Table 84: Availability and use of female condom

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a female condom	Yes	38/287	13.2	13.1	9.5	17.8
Ever used a female condom with a sexual partner	Yes	3/38	7.9	9.1	2.7	26.4
Knows of a place or person where to obtain female condoms	Yes	2/38	5.3	5.6	1.2	22.4

3.6.10. HIV testing history and avoidance of HIV services

The majority (83.1%) of uniformed personnel in Bossaso know where to go for a HIV test, even though only 58.5 per cent have ever received an HIV test in their lifetime. More than half (65.3%) of those who have ever tested have done so within the past 12 months prior to this study. Consequently, 38.2 per cent of uniformed personnel have accessed HIV testing and know their HIV status. Lack of awareness on where to go for an HIV test is cited by nearly half (55.8%) of uniformed personnel in Bossaso as the main reason for having never sought for an HIV test. Overall, 45 per cent of uniformed personnel in Bossaso avoid HIV services due to stigma and discrimination as shown in Table 85.

Table 85: HIV testing history and avoidance of HIV services among Bossaso uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Knows where to go if he wishes to receive a confidential HIV test	Yes	237/287	82.6	83.1	78.1	87.1
Knows his HIV status from an HIV test	Have ever been tested	161/287	56.1	58.5	52.4	64.3
Last tested	Less than 6 months	72/161	44.7	44.2	36.4	52.4
	6–12 months	33/161	20.5	21.1	15.2	28.6
	More than 12 months	56/161	34.8	34.7	27.4	42.7
Result of last HIV test	Positive	0/86	-	-	-	-
	Negative	161/161	100	100	-	-
	Indeterminate	0/86	0	-	-	-
Nature of HIV testing	Voluntary	116/161	72.1	70.1	62.1	77.1
	Required	45/161	28.0	30.0	22.9	37.9
During most recent HIV counselling/testing, revealed to the health provider that he is engaged in transactional sex	Yes	0/23	0.0	0.0	-	-
Reasons for having never sought for an HIV test	Fear of or concern about stigma by staff or neighbours	26/124	21.0	20.0	13.6	28.5
	Fear of or concern about or experienced violence	16/124	12.9	14.1	8.6	22.3
	Fear of or concern about or experienced police harassment or arrest	13/124	10.5	10.1	5.7	17.3
	Didn't know where to go for an HIV test	69/124	55.7	55.8	46.4	64.8
GARPR 3.4: Knows his/her HIV status from an HIV test	Yes	105/287	36.6	38.2	32.4	44.3
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations	Yes	55/122	45.1	45.0	35.9	54.5

3.6.11. Physical and sexual violence

Only 7.7 per cent of uniformed personnel in Bossaso have seen or heard of a woman being hit, kicked or beaten because someone believed they sell sex to men. In addition, 4.2 per cent of uniformed personnel have seen or heard of a FSW being physically forced to have sexual intercourse against her will mostly by the police (33.9%) as presented in Table 86.

Table 86: Physical and sexual violence among Bossaso uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being hit, kicked or beaten because someone believed she sells sex to men in the past 12 months	Yes	21/287	7.3	7.7	5.0	11.8
Person who last hit, kicked or beat the FSW	Don't know the person	11/287	52.4	52.6	29.4	74.7
	Social acquaintance	10/287	47.6	47.5	25.3	70.6

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being forced to have sex with a man by sexually assaulting her or having intercourse against her will in the past 12 months	Yes	12/279	4.3	4.2	2.3	7.4
Person who last forced her to have sex with them against her will	Social acquaintance	2/12	16.7	14.7	2.5	53.7
	Police	4/12	33.3	33.9	10.5	69.2
	Family and relatives	1/12	8.3	6.2	0.6	42.3
	Client	1/12	8.3	12.3	1.3	61.1
	Don't know the person	3/12	25.0	24.7	6.1	62.4
	Pimp	1/12	8.3	8.2	0.8	50.0
Sought medical treatment after being physically forced to have sexual intercourse against her will	Yes	5/10	50.0	43.7	13.8	79.0
Reported this incident to the police	Yes	10/11	90.9	86.9	36.0	98.7

3.6.12. Programme coverage

Overall, the coverage of HIV prevention programmes among uniformed personnel in Bossaso is very low (5.9%). However, most (82.3%) uniformed personnel are aware of any local NGO here that delivers non-medical assistance or advice to members of the group, even though only 10.5 per cent have attended any meetings to discuss STI or HIV/AIDS during the last 12 months respectively as shown in Table 87.

Table 87: Programme coverage among Bossaso uniformed personnel

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Aware of any local NGO here that delivers non-medical assistance or advice to members of the group	Yes	226/276	81.9	82.3	78.3	87.3
Have attended any meetings to discuss STI or HIV/AIDS during the last 12 months	Yes	28/286	9.8	10.5	7.2	15.0
Attended the sites he was referred to	Yes	6/11	54.6	62.3	28.3	87.4
GARPR 3.7 Coverage of HIV prevention programmes among key populations	Yes	15/287	5.2	5.9	3.5	9.7

3.6.13. Alcohol and drug use in the past three months

Few (5.6%) uniformed personnel in Bossaso consume alcohol compared to 85.4 per cent who consume khat. In addition, 81.7 per cent of the uniformed personnel smoke cigarette. Other drugs and substances consumed include marijuana or hashish (1.7%), injectable drugs (0.3%) and shisha smoking (1.9%). Only 2.5 per cent of uniformed personnel reported having had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette.

Table 88: Alcohol and drug use in the past three months

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	Never	275/287	95.8	94.4	90.4	96.8
	Monthly or less	5/287	1.7	2.6	1.1	6.1
	2–4 times a month	5/287	1.7	2.3	1.0	5.5
	2–3 times a week	1/287	0.4	0.5	0	3.4
	4 or more times a week	1/287	0.4	0.2	0	1.5
Frequency of chewing khat during the past three months	Never	40/287	13.9	14.6	10.7	19.5
	Monthly or less	123/287	42.6	42.1	36.2	48.2
	2–4 times a month	23/287	8.0	8.3	5.5	12.4
	2–3 times a week	34/287	11.9	10.3	7.3	24.3
	4 or more times a week	67/287	23.3	24.7	19.8	30.5
Frequency of smoking marijuana or hashish during the past three months	Never	283/287	98.6	98.3	95.4	99.4
	Monthly or less	2/287	0.7	1.0	0.2	3.9
	2–4 times a month	0/287	0.0	-	-	-
	2–3 times a week	2/287	0.7	0.7	0.2	3.2
	4 or more times a week	0/287	0.0	-	-	-
Frequency of smoking cigarette during the past three months	Never	52/287	18.1	18.3	14.0	23.5
	Monthly or less	64/287	22.3	21.8	17.3	27.2
	2–4 times a month	50/287	17.4	16.2	12.4	21.1
	2–3 times a week	59/287	20.6	21.6	16.9	27.2
	4 or more times a week	62/287	21.6	22.0	17.4	27.5
Frequency of smoking shisha during the past three months	Never	282/287	98.3	98.1	95.4	99.2
	Monthly or less	1/287	0.4	0.3	0.0	1.8
	2–4 times a month	1/287	0.4	0.3	0	1.8
	2–3 times a week	0/287	0.0	-	-	-
	4 or more times a week	3/287	1.1	1.4	0.5	4.3
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette	Yes	5/284	1.8	2.5	1.1	6.0
Frequency of injecting drugs during the past three months	Monthly	1/287	0.3	0.3	0.0	2.3
	Never	286/287	99.7	99.7	97.7	99.9
Type of drug injected	Decline to answer	1/1	100	100	-	-
Used a sterile needle and syringe during last IDU	Yes	1/1	100	100	-	-
Shared a syringe or needle with anyone else when injecting drugs in the last three months	No	1/1	100	100	-	-
Received new, clean needles or syringes in the past three months	Yes	1/1	100	100	-	-

3.7. Bossaso port workers

3.7.1. Sociodemographic characteristics

A total of 289 port workers participated in the study. The average age of port workers in Bossaso is 31.5 years half (48.7%) of whom are aged 25 to 34 years. More than half (77.6%) of port workers had no education, and 83.6 per cent had stayed in Bossaso for more than two years. Half (53.3%) are married with an average of 2.9 dependants. Most (44.3%) port workers visit their families on a daily basis as presented in Table 89.

Table 89: Sociodemographic characteristics of Bossaso port workers

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Age (Years)	Mean ± SD	31.5 ± 9.0			30.5	32.6
	Range	19–75				
	< 25 years	61/289	21.1	20.1	15.8	25.3
	25+ years	228/289	78.9	79.9	74.7	84.2
	18–24	61/289	21.1	20.1	15.8	25.3
	25–34	140/289	48.4	48.7	42.7	54.7
	35–44	63/289	21.8	22.9	18.1	28.4
	45 +	25/289	8.7	8.3	5.6	12.2
Education level	None	225/289	77.9	77.6	72.1	82.2
	Primary	49/289	17.0	17.0	13.0	22.0
	Secondary	15/289	5.2	5.4	3.2	9.0
Nationality	Somalia	283/289	97.9	98.0	95.6	99.1
	Ethiopia	5/289	1.7	1.8	0.7	4.2
	Somalia and Ethiopia	1/289	0.4	0.2	0.0	1.4
Length of stay in Bossaso	Less than 7 days	3/289	1.0	1.1	0.4	3.5
	7 days–1 month	1/289	0.4	0.4	0.0	2.6
	2–3 months	2/289	0.7	0.6	0.2	2.4
	4–6 months	5/289	1.7	1.6	0.7	4.0
	7–11 months	10/289	3.5	3.3	1.7	6.2
	1–2 years	25/289	8.7	9.4	6.3	13.8
	More than 2 years	243/289	84.1	83.6	78.5	87.6
Frequency of visiting his family	Daily	135/289	46.7	44.3	38.4	50.3
	Once in a week	59/289	20.4	22.0	17.3	27.6
	>once in a week	28/289	9.7	10.0	6.9	14.2
	Once in a month	13/289	4.5	4.5	2.6	7.8
	Twice in a month	19/289	6.6	6.8	4.3	10.5
	2–3 months	11/289	3.8	3.9	2.2	7.0
	>3 months	24/289	8.3	8.6	5.8	12.7
Marital status	Single	80/289	27.7	27.9	22.8	33.7
	Married	155/289	53.6	53.3	47.3	59.3
	Divorced	53/289	18.3	18.4	12.6	26.5
	Widowed	1/289	0.4	0.4	0	2.6
Number of dependants	Mean ± SD	2.9 ± 3.0			2.5	3.2
	Range	0–20				
Number of wives	1	133/155	85.8	86.0	79.1	90.8
	2	20/155	12.9	12.6	8.0	19.2
	3	2/155	1.3	1.4	0.4	5.6
	4	0/155	0.0	-	-	-
Frequency of visiting neighbouring countries	Never	267/289	92.4	92.6	88.8	95.2
	Weekly	5/289	1.7	1.5	0.6	3.8
	Monthly	0/289	0.0	0.0	-	-
	Every 2–3 months	5/289	1.7	2.0	0.8	5.0
	After > 3 months	12/289	4.2	3.9	2.2	6.9
Overall monthly income in USD	< 100	95/289	32.9	32.4	27.1	38.3
	>= 100	194/289	67.1	67.6	61.7	72.9
	Mean ± SD	168.6 ± 249.3			139.7	197.4
	Range	20–3,000				

3.7.2. HIV and syphilis prevalence

The overall prevalence of HIV and active syphilis infection among port workers in Bossaso is 1.2 per cent and 0.6 per cent respectively. All the two syphilis infection cases were active as shown in Table 90. However, there was no HIV and syphilis comorbidity.

Table 90: HIV and syphilis prevalence among Bossaso port workers

Characteristic	Sample proportions		Population estimates			
	n/N	%	%	95% confidence interval		
HIV	3/289	1.0	1.2	0.4	3.6	
Syphilis – Ever infected	5/289	1.7	1.8	0.7	4.4	
Syphilis – Active infection	2/289	0.7	0.6	0.1	2.8	

3.7.3. Patterns of STI care and treatment seeking behaviour

Nearly all port workers (99.2%) have heard of HIV and AIDS and other STIs (93.9%). While 21 per cent of port workers had received an STI test in the past three months, only 15.2 per cent have been diagnosed to have an STI 12 months prior to this survey. Contrastingly, only 3.1 per cent of port workers have experienced an abnormal penile discharge in the past 12 months prior to this study and all sought STI treatment. In addition, only 4 per cent of port workers have had a sore or ulcer on or near the penis in the past 12 months prior to this survey and half (55.7%) sought treatment as shown in Table 91.

Table 91: Patterns of STI care and treatment seeking behaviour among Bossaso port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of HIV/AIDS	Yes	286/289	99.0	99.2	97.5	99.8
Heard about other infections that can be transmitted through sex	Yes	268/289	92.7	93.9	90.7	96.1
Tested for STI in the past three months	Yes	54/267	20.2	21.0	16.3	26.7
Diagnosed by a doctor or medical professional to have had STI in the past 12 months	Yes	45/266	16.9	15.2	11.4	20.1
Had an abnormal discharge from the penis in the past 12 months	Yes	9/288	3.1	3.1	1.6	6.0
Had an abnormal discharge from the penis in the past 12 months and sought treatment	Yes	9/9	100	100	-	-
Type of treatment received	Injections	6/9	66.7	73.0	31.6	94.1
	Tablets	2/9	33.3	27.0	5.9	68.4
Had a sore or ulcer on or near penis or anus in the last 12 months	Yes	12/286	4.2	4.0	2.3	7.1
In the last 12 months, had a sore or ulcer on or near penis or anus and sought treatment	Yes	6/12	50.0	55.7	24.7	82.7
Type of treatment received	Injections	5/6	83.3	83.8	19.0	99.1
	Tablets	1/6	16.7	16.2	0.9	81.0

3.7.4. Knowledge on transmission of HIV and STI

There is varied knowledge score among port workers on HIV prevention and transmission with 60.1 per cent (knowledge on one not getting HIV from mosquito bite) as the lowest score to 80 per cent (HIV can be transmitted from mother to the baby during delivery) as the highest score. The overall composite knowledge among port workers who correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is however low (7.7%) as shown in Table 92.

Table 92: Knowledge on transmission of HIV and STI among Bossaso port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	174/289	60.2	62.3	56.3	67.9
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	190/289	65.7	67.8	62.1	73.1
It is possible for a healthy-looking person to have HIV/AIDS	Yes	205/289	70.9	74.2	68.8	79.0
People can get HIV from mosquito bites	No	217/289	75.1	74.7	69.0	79.6
People can get HIV by sharing food with a person who has HIV/AIDS	No	179/289	62.2	60.1	54.0	65.9
Heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	183/288	63.5	65.8	60.0	71.2
HIV can be transmitted from mother to her baby during pregnancy	Yes	204/289	70.6	73.3	67.8	78.3
HIV can be transmitted from mother to her baby during delivery	Yes	224/288	77.8	80.0	74.9	84.3
HIV can be transmitted from mother to her baby by breastfeeding	Yes	213/289	73.7	76.7	71.4	81.3
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	196/289	67.8	70.7	65.1	75.8
GARPR 5.1: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	22/289	7.6	7.7	5.0	11.7

3.7.5. General sexual history

Most (93.8%) port workers have had vaginal sex compared to only 4.5 per cent who have ever had anal sex with a woman. The average age at first vaginal sex among port workers in Bossaso is 21.1 years. Only 41.7 per cent of port workers have ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse while uniformed officer's houses being used as places to engage in transactional sex. Most port workers meet their new transactional clients and engage in sex at the uniformed personnel's homes as shown in Table 93.

Table 93: General sexual history of Bossaso port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have ever had vaginal sex with a woman	Yes	271/289	93.8	93.8	90.1	96.1
Age at first vaginal sex	Mean ± SD Range	21.1 ± 3.7 11–32			20.6	21.5
Ever had anal sex with a woman	Yes	13/287	4.5	4.5	2.5	7.7
Ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse	Yes	119/289	41.2	41.7	35.9	47.8
Total number of different sexual partners he had sexual intercourse with in the past one month	Mean ± SD Range	2.4 ± 3.2 0–20			1.9	3.0

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Where truckers meet most of their new transactional sex clients	Client's home	3/119	2.5	3.0	1.0	19.1
	At port worker's home	20/119	16.8	17.4	11.3	25.9
	Beach					
	Hotel/Restaurant	25/119	21.0	17.7	11.9	25.7
	Khat shop	2/119	1.7	2.3	0.5	9.6
	Tea shop	3/119	2.5	1.7	0.5	5.2
	They call	2/119	1.7	1.6	0.4	6.5
		64/119	53.8	56.3	46.8	65.3
Where port workers most often engage in transactional sex	At home shared with the family	72/119	60.5	62.8	53.3	71.3
	Car/Vehicle	1/119	0.8	0.5	0.0	3.4
	Hotel or restaurant	1/119	0.8	0.5	0.0	3.4
	Khat shop					
	Tea shop	1/119	0.8	0.7	0.0	4.8
	FSW's house	1/119	0.8	0.5	0.0	3.8
			43/119	36.1	35.1	26.7

3.7.6. Sexual history with paying clients

Less than one quarter (20.8%) of port workers used a male condom in their last transactional sexual intercourse. In most cases (77.9%), it is the port worker who suggests condom use. However, more than half of port workers (74%) never use condoms. The average amount of money paid by a port worker to a FSW during last transactional sex is USD 16.4, while the majority (32.6%) paid between USD 11 and USD 20 as shown in Table 94.

Table 94: Sexual history of Bossaso port workers with paying clients

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Used a condom during last transactional sexual intercourse with a client	Yes	22/105	21.0	20.8	13.8	30.0
Type of condom	Male condom	22/22	100	100	-	-
Person who suggested condom use at last transactional sexual intercourse	FSW	5/22	22.7	22.1	8.3	47.1
	Myself (port worker)	17/22	77.3	77.9	52.9	91.7
Frequency of using condoms with transactional clients over the last 30 days (1 month)	Every time	13/117	11.1	11.3	6.5	19.1
	Almost every time	6/117	5.1	4.5	2.0	10.2
	Sometimes	12/117	10.3	10.1	5.6	17.7
	Never	39/117	73.5	74.0	64.8	81.5
Number of FSWs port worker had sex with on the last day	Mean ± SD	1.3 ± 5.7			1.2	1.4
	Range	0–3				
Amount of money paid during last transactional sex (in USD)	0–5	10/119	8.4	7.4	3.9	13.7
	6–10	31/119	26.1	26.5	18.9	35.8
	11–20	61/119	51.3	50.7	41.3	60.1
	>= 21	17/119	14.3	15.4	9.5	23.8
	Mean ± SD	16.4 ± 16.9			23.3	23.8
Range	2–150					

3.7.7. Sexual history with non-paying partners

Nearly a similar proportion of port workers reported using a condom during their last sexual intercourse with transactional clients (20.8%) and with non-transactional clients (25.1%). The average number of times a port worker had sexual intercourse with a non-paying client over the last 30 days is 4.7 times, with port workers being the ones (54%) who mostly suggest condom use during last non-transactional sex as shown in Table 95.

Table 95: Sexual history of Bossaso port workers with non-paying partners

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of times uniformed officer had sexual intercourse with a non-transactional sexual partner over the last 30 days (1 month)	Mean \pm SD Range	4.7 \pm 4.8 0–25	-		4.1	5.2
Used a condom last time he had sexual intercourse with non-paying/ transactional sexual partner	Yes	56/212	26.4	25.1	19.5	31.6
Person who suggested condom use at last non-transactional sexual intercourse	Joint decision	4/53	7.6	5.7	2.0	15.3
	My partner	23/53	43.4	40.3	27.3	54.9
	Myself (port worker)	26/53	49.1	54.0	39.7	67.7

3.7.8. Availability and use of male condom

Although 81 per cent of port workers in Bossaso have ever heard of or seen a male condom, and 53.7 per cent know a place or person where to obtain male condoms, only 33.7 per cent have ever used a male condom. Few port workers received male condoms (5.5%) or counselling on condom use (9.1%) 12 months prior to this survey, even though 5.1 per cent perceive male condoms as not affordable as shown in Table 96.

Table 96: Availability and use of male condom among Bossaso port workers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a male condom	Yes	224/289	77.5	81.0	76.2	85.1
Ever used a male condom with a sexual partner	Yes	75/221	33.9	33.7	27.5	40.5
Knows of a place or person where to obtain male condoms	Yes	119/221	53.9	53.7	46.8	60.5
Usually carries condoms	Yes	49/215	22.8	23.9	18.4	30.4
Received condoms in the past three months	Yes	13/221	5.9	5.5	3.1	9.6
Received counselling on condom use and safe sex in the past three months	Yes	22/221	10.0	9.1	5.9	13.6
Person who usually supplies the condoms	Client (FSW)	24/216	11.1	10.3	6.8	15.3
	Never use a condom	143/216	66.2	66.2	59.3	72.5
	Myself	41/216	19.0	20.3	15.2	26.7
	Owner or manager of the place	8/216	3.7	3.2	1.5	6.5
Affordability of male condom	Affordable	76/211	36.0	37.9	31.3	45.0
	Not affordable	95/211	45.0	45.1	38.3	52.2
	Somewhat affordable	40/211	19.0	17.0	12.5	22.7

3.7.9. Availability and use of female condom

Unlike male condoms, fewer port workers in Bossaso have ever heard of (15.5%), used (11.3%) or know where to obtain (13.3%) female condoms as shown in Table 97.

Table 97: Availability and use of female condom among Bossaso port workers

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a female condom	Yes	47/289	16.3	15.5	11.7	20.4
Ever used a female condom with a sexual partner	Yes	5/47	10.6	11.3	4.5	25.8
Knows of a place or person where to obtain female condoms	Yes	6/47	12.8	13.3	5.7	28.1

3.7.10. HIV testing history and avoidance of HIV services

Nearly half (43.6%) of port workers in Bossaso know where to go for HIV test, while only one quarter (22%) have ever received an HIV test in their lifetime. However, only 8.9 per cent know their HIV status from an HIV test within the past 12 months prior to this study. Fear of or concern about stigma by staff or neighbours is cited by the majority (47.5%) of port workers in Bossaso as the reason for having never sought for an HIV test. Overall, 73.8 per cent of port workers in Bossaso avoid HIV services due to stigma and discrimination as shown in Table 98.

Table 98: HIV testing history and avoidance of HIV services among Bossaso port workers

Characteristic	Responses	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Knows where to go if he wishes to receive a confidential HIV test	Yes	123/289	42.6	43.6	37.7	49.7
Knows his HIV status from an HIV test	Have ever been tested	65/289	22.5	22.0	17.4	27.4
Last tested	Less than 6 months	15/65	23.1	25.9	16.0	39.1
	6–12 months	8/65	12.3	12.8	6.2	24.6
	More than 12 months	42/65	64.6	61.3	42.7	83.5
Result of last HIV test	Positive	1/65	1.5	1.7	0.2	11.3
	Negative	64/65	98.5	98.3	88.7	99.8
	Indeterminate	0/65	0.0	0.0	0.0	0.0
Nature of HIV testing	Voluntary	59/65	90.8	92.5	83.7	96.7
	Required	6/65	9.2	7.5	3.3	16.3
Reasons for having never sought for an HIV test	Fear of or concern about stigma by staff or neighbours	121/245	49.4	47.5	41.0	54.1
	Fear of or concern about or experienced violence	43/245	17.6	19.8	14.9	25.8
	Fear of or concern about or experienced police harassment or arrest	15/245	6.1	6.1	3.6	10.0
	Didn't know where to go for an HIV test	66/245	26.9	26.7	21.3	32.8
GARPR 3.4: Knows his/her HIV status from an HIV test	Yes	24/289	8.3	8.9	6.0	13.0
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations	Yes	179/243	73.7	73.8	67.7	79.2

3.7.11. Physical and sexual violence

Only 7.2 per cent of port workers in Bossaso have seen or heard of a woman being hit, kicked or beaten because someone believed she sells sex to men. In addition, 4.1 per cent of port workers in Bossaso have seen or heard of a FSW being physically forced to have sexual intercourse against her will. In both cases, the majority of perpetrators are their social acquaintance and people not known as presented in Table 99.

Table 99: Physical and sexual violence among Bossaso port workers

Characteristic	Responses	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being hit, kicked or beaten because someone believed she sells sex to men in the past 12 months	Yes	24/286	8.4	7.2	4.8	10.8
Person who last hit, kicked or beat the FSW	Social acquaintance	10/24	41.7	34.7	17.7	56.7
	Police	3/24	12.5	17.2	5.3	43.6
	Family and relatives	1/24	4.2	2.8	0.3	20.0
	Client	3/24	12.5	12.2	3.5	35.1
	Don't know the person	7/24	29.4	33.1	15.6	57.0
Have seen/heard of a woman being forced to have sex with a man by sexually assaulting or raping her or having intercourse against her will in the past 12 months	Yes	13/287	4.5	4.1	2.3	7.8
Person who last forced her to have sex with them against her will	Social acquaintance	2/12	16.7	17.8	3.4	57.2
	Family and relatives	1/12	8.3	5.8	0.6	40.8
	Client	1/12	8.3	11.5	1.2	59.0
	Don't know the person	8/12	66.7	64.9	30.1	88.9
Sought medical treatment after being physically forced to have sexual intercourse against her will	Yes	7/10	70.0	79.2	41.9	95.3
Reported this incident to the police	Yes	6/10	60.0	65.0	27.7	90.0

3.7.12. Programme coverage

Overall, the coverage of HIV prevention programmes among port workers in Bossaso is low (28.3%). Furthermore, only 16.4 per cent and 10 per cent of port workers are aware of any local NGO here that delivers non-medical assistance or advice to members of the group and have attended any meetings to discuss STI or HIV/AIDS during the last 12 months respectively, as shown in Table 100.

Table 100: Programme coverage among Bossaso port workers

Characteristic	Responses	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Aware of any local NGO here that delivers non-medical assistance or advice to members of the group	Yes	50/289	17.3	16.4	12.4	21.2
Have attended any meetings to discuss STI or HIV/AIDS during the last 12 months	Yes	28/276	10.1	10.0	6.9	14.3
Attended the sites he was referred to	Yes	8/93	8.6	8.5	4.2	16.6
GARPR 3.7 Coverage of HIV prevention programmes among key populations	Yes	87/289	30.0	28.3	23.2	33.9

3.7.13. Alcohol and drug use in the past three months

Few (3.8%) port workers in Bossaso consume alcohol compared to 60.4 per cent who consume khat. In addition, 52.9 per cent of them smoke cigarette. Other drugs and substances consumed include marijuana or hashish (9.5%), and shisha smoking (12%). In addition, 1.3 per cent inject drugs (mostly cocaine and memphetamine), while nearly three quarters (74.1%) reported use of a sterile needle and syringe the last time they were injected. Only 11.9 per cent of port workers reported having had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette.

Table 101: Alcohol and drug use among Bossaso port workers in the past three months

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	Never	278/288	96.5	96.2	92.9	97.9
	Monthly or less	6/288	2.1	2.4	1.1	5.3
	2–4 times a month	2/288	0.7	0.8	0.2	3.2
	2–3 times a week	1/288	0.4	0.3	0.0	2.0
	4 or more times a week	1/288	0.4	0.4	0.0	2.8
Frequency of chewing khat during the past three months	Never	120/289	41.5	39.6	33.9	45.6
	Monthly or less	31/289	10.7	10.6	7.5	15.1
	2–4 times a month	36/289	12.5	12.6	9.1	17.1
	2–3 times a week	41/289	14.2	15.1	11.2	20.2
	4 or more times a week	61/289	21.1	22.1	17.4	27.5
Frequency of smoking marijuana or hashish during the past three months	Never	261/289	90.3	90.5	86.3	93.4
	Monthly or less	11/289	3.8	3.9	2.1	7.0
	2–4 times a month	8/289	2.8	2.8	1.4	5.6
	2–3 times a week	0/289	-	-	-	-
	4 or more times a week	9/289	3.1	2.9	1.5	5.6
Frequency of smoking cigarette during the past three months	Never	148/289	51.2	47.1	41.2	53.1
	Monthly or less	17/289	5.9	5.5	3.3	9.0
	2–4 times a month	32/289	11.1	11.9	8.4	16.5
	2–3 times a week	27/289	9.3	11.4	7.8	16.3
	4 or more times a week	65/289	22.5	24.2	19.3	29.8
Frequency of smoking shisha during the past three months	Never	252/289	87.2	88.0	83.6	91.4
	Monthly or less	15/289	5.2	4.4	2.6	7.6
	2–4 times a month	21/289	7.3	7.2	4.6	11.0
	2–3 times a week	0/289	-	-	-	-
	4 or more times a week	1/289	0.4	0.4	0.0	2.8
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette	Yes	40/287	13.9	11.9	8.7	16.1
Frequency of injecting drugs during the past three months	Monthly	5/289	1.7	1.3	0.5	3.2
	Never	284/289	99.0	99.0	96.9	99.7
Type of drug injected	Cocaine	1/5	20.0	17.4	0.6	87.6
	Memphetamine	3/5	60.0	48.6	4.8	94.6
	Decline to answer	1/5	20.0	34.1	1.6	94.3
Used a sterile needle and syringe during last IDU	Yes	2/3	66.7	74.1	0.4	99.9
Shared a syringe or needle with anyone else when injecting drugs in the last three months	Yes	2/5	40.0	33.0	2.6	90.1
Received new, clean needles or syringes in the past three months	Yes	0/5	0.0	0.0	-	-

3.8. Bossaso truckers

3.8.1. Sociodemographic characteristics

A total of 287 truckers, all of Somalia nationality, participated in the study. The average age of truckers in Bossaso is 32.5 years with half (50.8%) of the respondents aged 25 to 34 years. Most truckers (46.9%) have primary level of education, and the majority (54.8%) have stayed in Bossaso for more than two years. Three quarters (73.3%) are married with an average monthly income of USD 227.0. Nearly two thirds (63.3%) of truckers travel to neighbouring countries mostly on a weekly basis as shown in Table 102.

Table 102: Sociodemographic characteristics of Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Age (Years)	Mean ± SD	32.5±9.6			31.4	33.7
	Range	19–64				
	< 25 years	54/287	18.8	19.1	13.9	25.5
	25+ years	233/287	81.2	80.9	74.5	86.1
	18–24	54/287	18.8	19.1	13.9	25.5
	25–34	132/287	46.0	50.8	43.6	58.0
	35–44	55/287	19.2	13.3	9.6	18.2
	45 +	46/287	16.0	16.8	12.3	22.6
Education level	None	97/287	33.8	40.9	34.2	47.9
	Primary	144/287	50.2	46.9	40.2	53.7
	Secondary	42/287	14.6	11.4	8.2	15.7
	University/College	4/287	1.4	0.9	0.3	2.4
Nationality	Somalia	287/287	100.0	100.0	-	-
Length of stay in Bossaso	Less than 7 days	30/287	10.5	11.5	7.9	16.5
	7 days–1 month	62/287	21.6	18.6	14.2	24.0
	2–3 months	4/287	1.4	1.5	0.5	4.2
	4–6 months	3/287	1.1	1.1	0.3	3.9
	7–11 months	12/287	4.2	5.3	2.6	10.3
	1–2 years	23/287	8.0	7.3	4.5	11.4
	More than 2 years	153/287	53.3	54.8	48.0	61.4
Frequency of visiting his family	Daily	85/287	29.6	31.9	25.9	38.5
	Once in a week	109/287	38.0	33.4	27.5	39.8
	>once in a week	20/287	7.0	7.0	4.0	11.9
	Once in a month	16/287	5.6	6.8	3.8	11.9
	Twice in a month	45/287	15.7	15.1	11.0	20.4
	2–3 months	8/287	2.8	4.8	2.1	10.4
	>3 months	4/287	1.4	1.1	0.4	2.8
Marital status	Single	73/287	25.4	26.8	21.0	33.5
	Married	214/287	74.6	73.3	66.6	79.0
Number of dependants	Mean ± SD	4.5 ± 4.0			4.0	4.9
	Range	0–23				
Frequency of visiting neighbouring countries	Never	112/287	39.0	43.3	36.7	50.2
	Weekly	134/287	46.7	42.7	36.1	49.4
	Monthly	32/287	11.2	11.0	7.3	16.3
	Every 2–3 months	9/287	3.1	3.1	1.4	6.5
Overall monthly income in USD	< 100	24/287	8.4	8.8	5.6	13.5
	>= 100	263/287	91.6	91.2	86.5	94.4
	Mean ± SD	227.0 ± 174.9			206.6	247.3
	Range	20–1,000				

3.8.2. HIV and syphilis prevalence

The overall prevalence of HIV and syphilis infection (active) among truckers in Bossaso is 0.4 per cent and 0.2 per cent respectively as shown in Table 103.

Table 103: HIV and syphilis prevalence among Bossaso truckers

Characteristic	Sample proportions		Population estimates		
	n/N	%	%	95% confidence interval	
HIV	2/287	0.7	0.4	0	1.5
Syphilis – Ever infected	1/287	0.4	0.2	0	1.4
Syphilis – Active infection	1/287	0.4	0.2	0	1.4

3.8.3. Patterns of STI care and treatment seeking behaviour

Nearly all truckers have heard of HIV and AIDS (97.1%) and STIs (89.4%). Even though 17.8 per cent of truckers had received an STI test in the past three months, only 11.1 per cent had been diagnosed to have an STI 12 months prior to this survey. Contrastingly, only 5.3 per cent of truckers had experienced an abnormal penile discharge in the past 12 months prior to this study, and 91.4 per cent of among them sought STI treatment. In addition, only 0.6 per cent of truckers have had a sore or ulcer on or near the penis in the past 12 months prior to this survey, and none of them sought treatment as shown in Table 104.

Table 104: Patterns of STI care and treatment seeking behaviour among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of HIV/AIDS	Yes	281/287	97.9	97.1	93.6	98.7
Heard about other infections that can be transmitted through sex	Yes	265/287	92.3	89.4	84.0	93.1
Tested for STIs in the past three months	Yes	44/262	16.8	17.8	13.0	23.8
Diagnosed by a doctor or medical professional to have had STI in the past 12 months	Yes	24/264	9.1	11.1	7.0	17.1
Had an abnormal discharge from the penis in the past 12 months	Yes	14/285	4.9	5.3	2.9	9.3
Had an abnormal discharge from the penis in the past 12 months and sought treatment	Yes	12/14	85.7	91.4	64.6	98.4
Reasons for not seeking treatment for the sore or ulcer on or near the penis or anus	Could not afford treatment	1/2	50.0	57.1	0	100
	Embarrassed or afraid to seek treatment	1/2	50.0	42.9	0	100
Had a sore or ulcer on or near the penis or anus in the last 12 months	Yes	1/284	0.4	0.6	0	4.1
In the last 12 months, had a sore or ulcer on or near the penis or anus and sought treatment	Yes	0/1	0.0	0.0	-	-

3.8.4. Knowledge on transmission of HIV and STI

While all truckers scored above 55 per cent on individual knowledge questions, their overall composite knowledge on how to correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is however very low (8.6%). Highest knowledge score (88.8%) recorded on awareness of existence of special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby as shown in Table 105.

Table 105: Knowledge on transmission of HIV and STI among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Risk of HIV transmission can be reduced by having sex with only one uninfected partner who has no other partners	Yes	171/281	60.9	62.7	56.1	68.9
People can reduce their chance of getting HIV and STI by using a condom every time they have sex	Yes	156/279	55.9	57.0	50.2	63.5
It is possible for a healthy-looking person to have HIV/AIDS	Yes	242/279	86.7	81.7	75.4	86.7

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
People can get HIV from mosquito bites	No	218/282	77.3	75.5	68.7	81.2
People can get HIV by sharing food with a person who has HIV/AIDS	No	235/282	83.3	84.4	79.0	88.6
Heard about special antiretroviral drugs that people infected with HIV/AIDS can get from a doctor or nurse to help them live longer	Yes	243/284	85.6	84.7	79.2	88.9
HIV can be transmitted from mother to her baby during pregnancy	Yes	245/281	87.2	84.6	78.9	88.9
HIV can be transmitted from mother to her baby during delivery	Yes	248/282	87.9	85.1	79.5	89.4
HIV can be transmitted from mother to her baby by breastfeeding	Yes	249/282	88.3	85.5	79.9	89.7
There are special drugs that a doctor or nurse can give to a woman infected with HIV to reduce the risk of HIV transmission to the baby	Yes	257/284	90.5	88.0	82.6	91.9
GARPR 5.1: Both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	Yes	27/287	9.4	8.6	5.6	13.0

3.8.5. General sexual history

Nearly all (94.6%) truckers have had vaginal sex compared to only 1.3 per cent who have ever had anal sex. The average age at first vaginal sex among truckers in Bossaso is 20.6 years. Nearly one third (30.3%) of truckers having ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse. The majority of truckers meet their new transactional clients and engage in sex at their client's (FSW) homes as shown in Table 106.

Table 106: General sexual history of Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have ever had vaginal sex with a woman	Yes	270/279	96.8	94.6	89.0	97.4
Age at first vaginal sex	Mean ± SD Range	20.6 ± 2.7 16–30	-		20.3	20.9
Ever had anal sex with a woman	Yes	4/282	1.4	1.3	0.5	3.6
Ever given a woman money, a gift (like khat) or favour in exchange of sexual intercourse	Yes	90/279	32.3	30.8	24.8	34.5
Number of different sexual partners in total he had sexual intercourse with in the past one month	Mean ± SD Range	2.6 ± 1.8 1–14			2.2	3.0
Where truckers meet most of their new transactional sex clients	Client's home	57/90	63.3	62.8	50.4	73.8
	At trucker's home	6/90	6.7	7.2	3.0	16.3
	Hotel/Restaurant	1/90	1.1	1.0	0.1	7.2
	Khat shop	23/90	25.6	22.1	14.0	32.9
	Tea shop	3/90	3.3	6.9	2.2	19.5
Where truckers most often engage in transactional sex	At home shared with family	3/90	3.3	3.2	0.9	10.8
	Car/Vehicle	5/90	5.6	5.9	2.2	14.5
	Khat shop	5/90	5.6	4.7	1.8	12.0
	FSW's house	77/90	85.6	86.3	76.3	92.4

3.8.6. Sexual history with paying clients

The majority of truckers (38.8%) used a male condom in their last transactional sexual intercourse. In most cases (97.8%), it is the truckers who suggested condom use. However, half of the truckers (55.5%) never use condoms. The average amount of money paid by a trucker to an FSW during last transactional sex is USD 8.1, while the majority (52.9%) paid between USD 0 and USD 5 as shown in Table 107.

Table 107: Sexual history of Bossaso truckers with paying clients

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Used a condom the last time she had transactional sexual intercourse with a client	Yes	36/88	40.9	38.8	27.7	51.3
Type of condom	Male condom	36/36	100	100	-	-
Person who suggested condom use at last transactional sexual intercourse	FSW	1/36	2.8	2.3	0.3	15.8
	Myself (trucker)	35/36	97.2	97.8	84.2	99.7
Frequency of using condoms with transactional clients over the last 30 days (one month)	Every time	9/90	10.0	9.9	4.8	19.3
	Almost every time	7/90	7.8	5.1	2.3	10.7
	Sometimes	27/90	30.0	29.6	19.7	41.7
	Never	47/90	52.2	55.5	43.2	67.1
Number of FSWs truckers had sex with on the last day	Mean ± SD	1.4 ± 0.5			1.3	1.5
	Range	0–3				
Amount of money paid during last transactional sex	0–5	47/90	52.2	52.9	40.6	64.9
	6–10	35/90	38.9	37.4	26.5	49.7
	11–20	7/90	7.8	8.7	3.8	18.8
	>= 21	1/90	1.1	1.0	0.1	7.2
	Mean ± SD	8.1 ± 6.6			6.7	9.5
	Range	0–60				

3.8.7. Sexual history with non-paying partners

Whereas the majority of truckers reported using a condom during their last sexual intercourse with transactional clients, only 20.5 per cent of truckers used a condom with their last non-transactional client. In addition, the average number of times truckers had sexual intercourse with non-paying clients over the last 30 days is 1.9 times. In most non-transactional sexual intercourse acts, it is the truckers (79.7%) who suggested condom use as shown in Table 108.

Table 108: Sexual history of Bossaso truckers with non-paying partners

Characteristic		Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Number of times trucker had sexual intercourse with a non-transactional sexual partner over the last 30 days (one month)	Mean ± SD Range	1.9 ± 1.8 0–15	-		1.7	2.1
Used a condom last time he had sexual intercourse with non-paying/ transactional sexual partner	Yes	42/205	20.5	20.1	14.6	27.1
Person who suggested condom use at last non-transactional sexual intercourse	Joint decision	2/41	4.9	4.4	0.9	18.5
	My partner	6/41	14.6	16.0	6.4	34.6
	Myself (trucker)	33/41	80.5	79.7	61.2	90.7

3.8.8. Availability and use of male condom

Though 88.9 per cent of truckers in Bossaso have ever heard of or seen a male condom and 46 per cent know a place or person where to obtain male condoms, only 19.9 per cent have ever used a male condom. Few truckers received male condoms (3.2%) or counselling on condom use (7.1%) 12 months prior to this survey, even though 96.4 per cent perceive male condoms to be affordable as shown in Table 109.

Table 109: Availability and use of male condom among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a male condom	Yes	255/287	85.8	88.9	79.8	90.2
Ever used a male condom with a sexual partner	Yes	53/254	20.9	19.9	15.0	26.0
Knows of a place or person where to obtain male condoms	Yes	127/254	50.0	46.0	38.9	53.1
Usually carries condoms	Yes	37/254	14.6	13.0	9.2	18.1
Received condoms in the past three months	Yes	8/249	3.2	3.2	1.4	7.2
Received counselling on condom use and safe sex in the past three months	Yes	17/251	6.8	7.1	4.2	12.0
Person who usually supplies the condoms	Client (FSW)	2/249	0.8	0.5	0.1	2.1
	Never use a condom	196/249	78.7	78.5	72.1	83.7
	Myself	46/249	18.5	18.3	13.5	24.4
	Owner or manager of the place	5/249	2.0	2.7	1.1	6.5
Affordability of male condom	Affordable	218/226	96.5	96.4	92.4	98.4
	Not affordable	3/226	1.3	1.7	0.5	5.7
	Somewhat affordable	5/226	2.2	1.9	0.7	4.8

3.8.9. Availability and use of female condom

Unlike male condoms, fewer truckers in Bossaso have ever heard (28.4%), used (2.4%) or know where to obtain (25.7%) female condoms as shown in Table 110.

Table 110: Availability and use of female condom among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Ever heard of a female condom	Yes	85/287	29.6	28.4	22.9	34.8
Ever used a female condom with a sexual partner	Yes	1/85	1.2	2.4	0.3	15.8
Knows of a place or person where to obtain female condoms	Yes	18/85	21.2	25.7	16.0	38.5

3.8.10. HIV testing history and avoidance of HIV services

More than half (59.9%) of truckers in Bossaso know where to go for HIV test. However, only 10.9 per cent know their HIV status from an HIV test within the past 12 months prior to this study. Fear of or concern about stigma by staff or neighbours is cited by the majority (50.2%) of truckers in Bossaso as the reason for having never sought for an HIV test. Overall, 75.3 per cent of truckers in Bossaso avoid HIV services due to stigma and discrimination among FSWs as shown in Table 111.

Table 111: HIV testing history and avoidance of HIV services among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates			
		n/N	%	%	95% confidence interval		
Knows where to go if he wishes to receive a confidential HIV test	Yes	164/281	58.4	59.9	53.1	66.3	
Knows his HIV status from an HIV test	Have ever been tested	53/287	18.5	18.9	14.1	24.9	
Last tested	Less than 6 months	14/53	26.4	30.3	17.6	47.0	
	6–12 months	19/53	35.9	27.7	16.5	42.6	
	More than 12 months	20/53	37.7	42.1	24.0	71.5	
Result of last HIV test	Negative	53/53	100	100	-	-	
Nature of HIV testing	Voluntary	46/52	88.5	92.1	79.9	97.1	
	Required	6/52	11.5	7.9	2.9	20.1	
During most recent HIV counselling/testing, revealed to the health provider that he is engaged in transactional sex	Yes	0/27	0.0	0.0	-	-	
Reasons for having never sought for an HIV test	Fear of or concern about stigma by staff or neighbours	124/224	55.4	50.2	42.6	57.8	
	Fear of or concern about or experienced violence	41/224	18.3	20.2	14.4	27.7	
	Fear of or concern about or experienced police harassment or arrest	3/224	1.3	2.1	0.7	6.6	
	Didn't know where to go for an HIV test	56/224	25.0	27.5	21.1	34.8	
GARPR 3.4: Knows his/her HIV status from an HIV test	Yes	33/287	11.5	10.9	7.5	15.7	
GARPR 4.2: Avoidance of HIV services because of stigma and discrimination among key populations	Yes	168/219	76.7	75.3	68.0	81.3	

3.8.11. Physical and sexual violence

The proportion of truckers in Bossaso who have seen or heard of a woman being hit, kicked or beaten (social acquaintance (54.2%)) because someone believed she sells sex to men is 13.2 per cent. In addition, 6.5 per cent of truckers in Bossaso have seen or heard of an FSW being physically forced to have sexual intercourse against her will commonly by their social acquaintance (69.1%) as illustrated in Table 112.

Table 112: Physical and sexual violence among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates			
		n/N	%	%	95% confidence interval		
Have seen/heard of a woman being hit, kicked or beaten because someone believed she sells sex to men in the past 12 months	Yes	38/274	13.9	13.2	9.2	18.5	
Person who last hit, kicked or beat the female sex worker	Social acquaintance	23/38	60.5	54.2	35.2	72.1	
	Police	2/38	5.3	8.4	1.9	30.6	
	Other sex worker	5/38	13.2	16.5	6.3	36.7	
	Client	1/38	2.6	2.1	0.3	14.6	
	Don't know the person	2/38	5.3	11.0	2.7	35.7	
	Family or relative	3/38	7.9	3.8	1.1	12.1	
	Non-paying partner or boyfriend	2/38	5.3	4.1	0.9	16.2	

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Have seen/heard of a woman being forced to have sex with a man by sexually assaulting or raping her or having intercourse against her will in the past 12 months	Yes	23/276	8.3	6.5	4.2	10.1
Person who last forced her to have sex with her against her will	Social acquaintance	16/23	69.6	69.1	44.2	86.4
	Don't know the person	1/23	4.4	2.6	0.3	19.3
	Police	1/23	4.4	4.4	0.5	28.7
	Other sex worker	2/23	8.7	11.4	2.2	41.8
	Client	3/23	13.0	12.6	3.7	35.3
Sought medical treatment after being physically forced to have sexual intercourse against her will	Yes	9/23	39.1	34.9	16.9	58.5
Reported this incident to the police	Yes	11/23	47.8	50.4	27.9	72.8

3.8.12. Programme coverage

Overall, the coverage of HIV prevention programmes among truckers in Bossaso is (11.9%). Furthermore, only 6.8 per cent and 3.9 per cent of truckers are aware of any local NGO here that delivers non-medical assistance or advice to members of the group and have attended any meetings to discuss STI or HIV/AIDS during the last 12 months respectively as shown in Table 113.

Table 113: Programme coverage among Bossaso truckers

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Aware of any local NGO here that delivers non-medical assistance or advice to members of the group	Yes	14/278	5.0	6.8	3.9	11.5
Have attended any meetings to discuss STI or HIV/AIDS during the last 12 months	Yes	9/274	3.3	3.9	1.9	7.9
Attended the sites he was referred to	Yes	6/20	30.0	35.3	14.7	63.3
GARPR 3.7 Coverage of HIV prevention programmes among key populations	Yes	29/287	10.1	11.9	8.0	17.2

3.8.13. Alcohol and drug use in the past three months

About 5.3 per cent of truckers in Bossaso consume alcohol compared to 100 per cent who consume khat. In addition, 72.7 per cent of the truckers smoke cigarette. Other drugs and substances consumed include marijuana or hashish (6.8%), injectable drug, cocaine (0.4%) and shisha smoking (11.9%). Furthermore, 3.4 per cent of truckers reported having had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat or smoked marijuana/hashish or cigarette.

Table 114: Alcohol and drug use among Bossaso truckers in the past three months

Characteristic	Response	Sample proportions		Population estimates		
		n/N	%	%	95% confidence interval	
Frequency of having a drink containing alcohol during the past three months	Never	272/285	95.4	94.7	90.7	97.1
	Monthly or less	4/285	1.4	2.0	0.7	5.4
	2–4 times a month	2/285	0.7	0.6	0.1	2.2
	2–3 times a week	5/285	1.8	2.2	0.9	5.5
	4 or more times a week	2/285	0.7	0.6	0.1	2.2
Frequency of chewing khat during the past three months	Never	71/287	24.7	27.3	21.7	33.7
	Monthly or less	12/287	4.2	5.4	3.0	9.7
	2–4 times a month	52/287	18.1	14.9	11.0	19.9
	2–3 times a week	48/287	16.7	14.8	10.8	19.8
	4 or more times a week	104/287	36.2	37.6	31.1	44.6
Frequency of smoking marijuana or hashish during the past three months	Never	271/287	94.4	93.2	87.9	96.3
	Monthly or less	2/287	0.7	0.9	0.2	4.3
	2–4 times a month	1/287	0.4	0.7	0.0	4.8
	2–3 times a week	3/287	1.1	1.7	0.5	5.6
	4 or more times a week	10/287	3.5	3.5	1.5	8.1
Frequency of smoking cigarette during the past three months	Never	77/287	26.8	30.8	24.9	37.4
	Monthly or less	12/287	4.2	5.9	3.3	10.3
	2–4 times a month	45/287	15.7	14.0	10.1	19.1
	2–3 times a week	57/287	19.9	17.2	12.9	22.5
	4 or more times a week	96/287	33.5	32.1	25.9	39.1
Frequency of smoking shisha during the past three months	Never	240/287	83.6	88.1	83.9	91.4
	Monthly or less	0/287	-	-	-	-
	2–4 times a month	12/287	4.2	2.8	1.5	5.4
	2–3 times a week	12/287	4.2	3.3	1.7	6.3
	4 or more times a week	23/287	8.0	5.7	3.6	8.8
Have had sex with a client in the past three months after having taken a drink containing alcohol, chewed khat, smoked marijuana/hashish or cigarette	Yes	10/272	3.7	3.4	1.7	6.8
Frequency of injecting drugs during the past three months	Never	285/286	99.7	99.7	97.9	99.9
	2–4 times a month	1/286	0.4	0.3	0.0	2.1
Type of drug injected	Cocaine	1/1	100	100	-	-
Used a sterile needle and syringe during last IDU	Yes	1/1	100	100	-	-
Shared a syringe or needle with anyone else when injecting drugs in the last three months	Yes	0/1	0.0	0.0	-	-
Received new, clean needles or syringes in the past three months	Yes	1/1	100	100	-	-

4. Discussion

This section examines the various key variables and GARPR indicators and makes intergroup comparisons. Since this is the first IBBS study to be implemented in South Central Somalia and Puntland, the majority of discussions will be based on both intergroup discussion and Somaliland FSW IBBS studies in 2008 and 2014. At the same time, uniformed officers, port workers and truckers are key populations, though no IBBS in Somalia had been conducted before targeting these particular groups. Therefore, comparison with Hargeisa IBBS will be limited to FSWs only. This study, however, forms a good baseline for subsequent IBBS surveys required to track HIV programme performance in Somalia.

4.1. Sociodemographic characteristics and HIV/syphilis prevalence

The findings of this IBBS indicate relatively similar patterns across the surveys. Most of the participants were youths aged between 25 and 34 years old, with their mean ages ranging from 28 years to 33 years, with either no education or primary education. This finding is similar to those in previous studies indicating the majority of FSWs have a mean age of about 28–29 years (IOM, forthcoming (a); IOM, 2014; Kriitmaa et al., 2010). This is critical to informing HIV programming in Somalia to tailor information education communication materials to the target key population group. In addition, the majority of truckers, port workers and uniformed categories were married with some having up to four wives. In comparison, across the two survey sites, many FSWs were either separated or divorced, which could be a contributing factor to engagement in transactional sex. This could explain in part the findings of this survey showing the majority of transactional sexual activities happen at client's (FSW) home. Across the four surveys, truckers significantly travel to neighbouring countries with varied duration of stay outside the country before visiting their families.

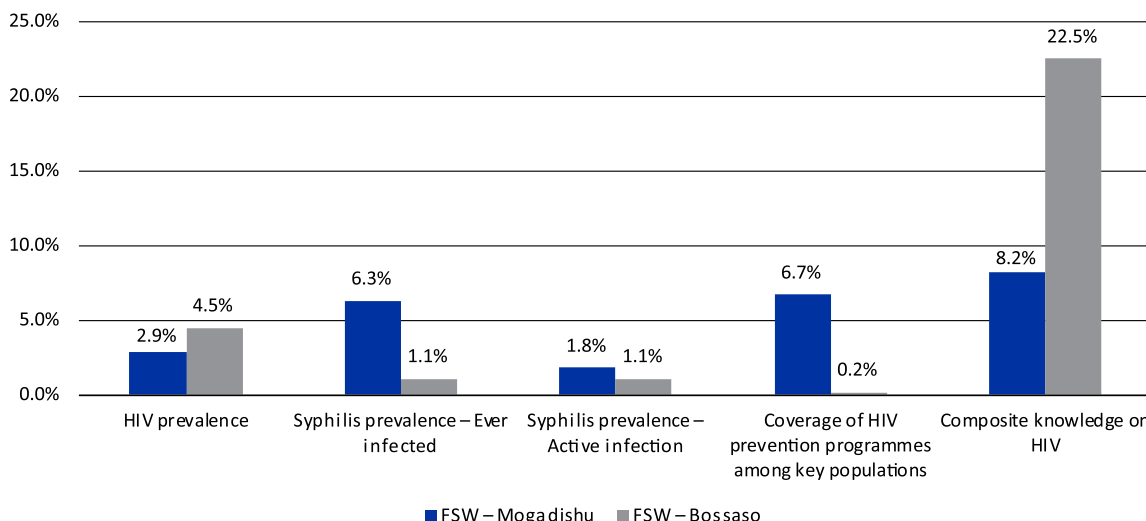
This study reports an almost similar HIV prevalence among FSWs in Bossaso (4.5%) to that conducted Somaliland in 2014 (4.8%). However, the Mogadishu FSW HIV prevalence of 2.9 is lower than that established in Hargeisa in 2014.

4.2. Comparison of key indicators across Mogadishu and Bossaso study groups

4.2.1. Female sex workers

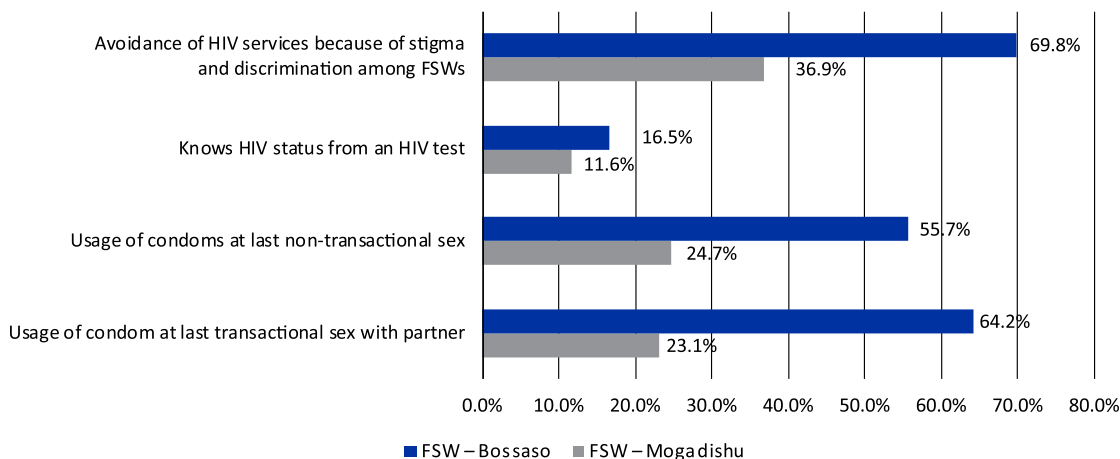
Comparison of FSW group across Mogadishu and Bossaso indicate a higher HIV disease burden in Bossaso compared to Mogadishu as evidenced by a comparatively high HIV prevalence, but low coverage of HIV prevention programmes targeting FSW. However, syphilis prevalence is higher in Mogadishu as shown in Figure 15.

Figure 15: Comparison of GARPR indicators among FSWs



Although most FSWs are avoiding HIV services in Bossaso due to stigma and discrimination, a higher proportion of FSWs in Bossaso used condom with both last transactional and non-transactional clients compared to FSWs in Mogadishu. Similarly, fewer FSWs in both Bossaso and Mogadishu have had an HIV test and know their HIV status. This indicates the magnitude of high-risk sex the FSWs and their clients in these two areas engage in. Furthermore, it demonstrates the need to bridge this gap by increasing coverage of HIV prevention programmes targeting key populations in Somalia.

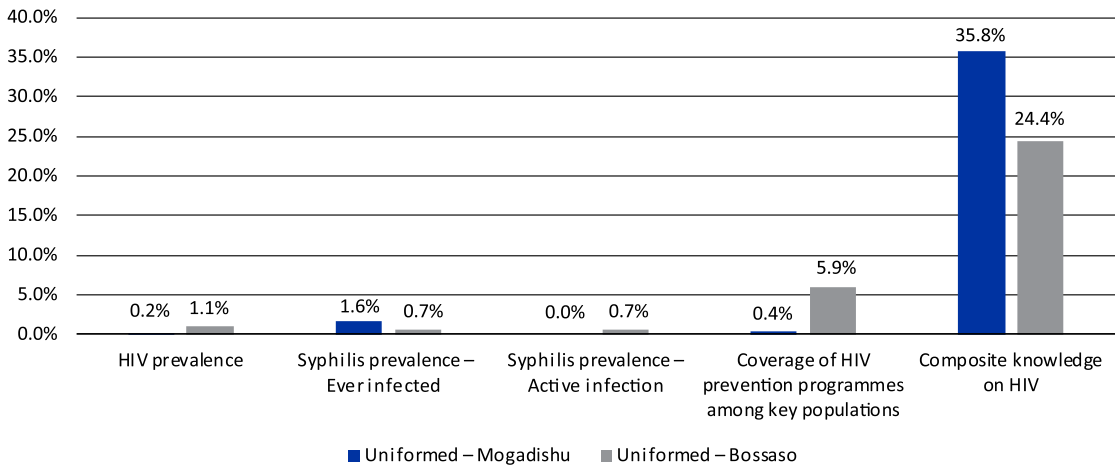
Figure 16: Comparison of selected indicators among FSWs



4.2.2. Uniformed personnel

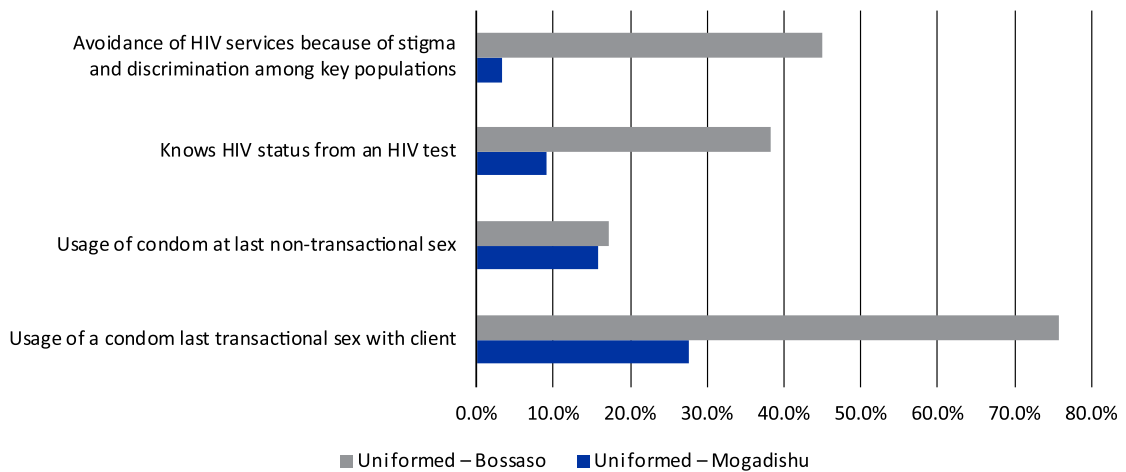
HIV and syphilis prevalence among uniformed personnel is low in both Mogadishu and Bossaso. Unlike Bossaso FSWs, coverage of HIV prevention programme is high among uniformed personnel in Bossaso. However, uniformed personnel in Mogadishu have higher composite knowledge on HIV compared to their colleagues in Bossaso as illustrated below in Figure 17.

Figure 17: Comparison of GARPR indicators among uniformed personnel



The findings in Figure 18 indicating higher proportion of uniformed personnel avoiding HIV prevention services due to fear of stigma and discrimination is consistent with findings for FSWs, port workers and truckers in Bossaso on the same indicator, as shown in Figures 18, 19 and 20.

Figure 18: Comparison of selected indicators among uniformed personnel



4.2.3. Port workers

Across Mogadishu and Bossaso, HIV prevalence and active syphilis is low as shown in Figure 19. Condom usage is higher among transactional clients than non-transactional clients. The performance among groups is highest across all indicators in Bossaso. This could, in part, be explained by the relatively higher coverage of HIV prevention programmes among key populations.

Figure 19: Comparison of GARPR indicators among port workers

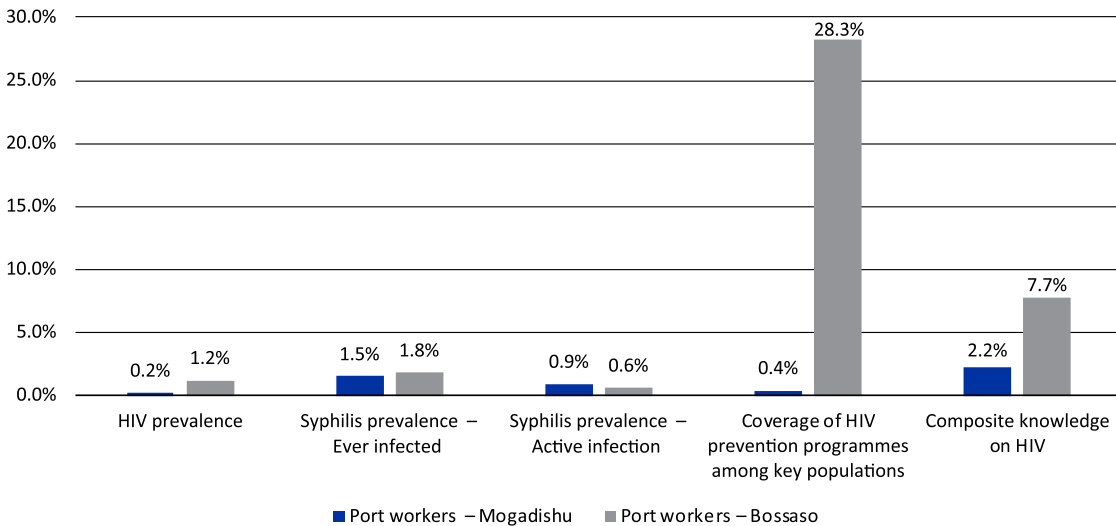
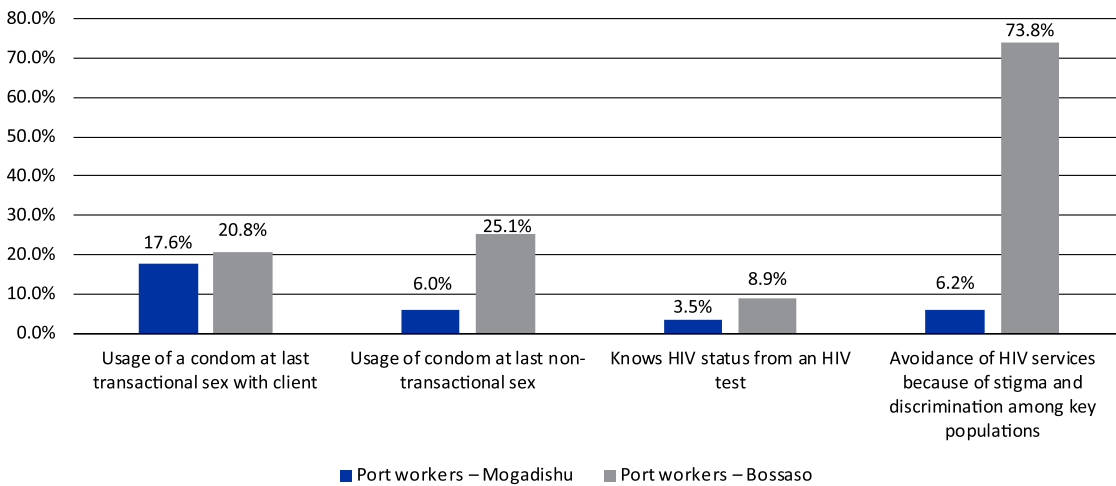


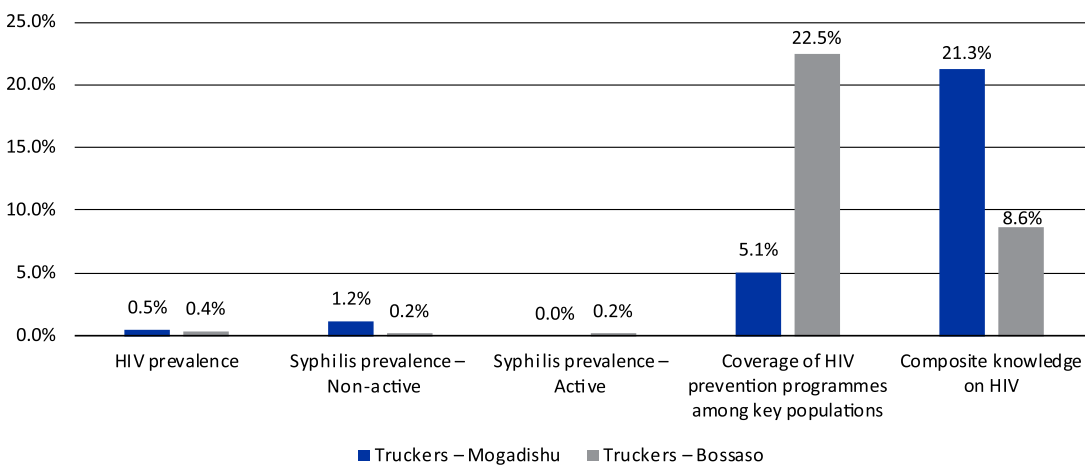
Figure 20: Comparison of selected indicators among port workers



4.2.4. Truckers

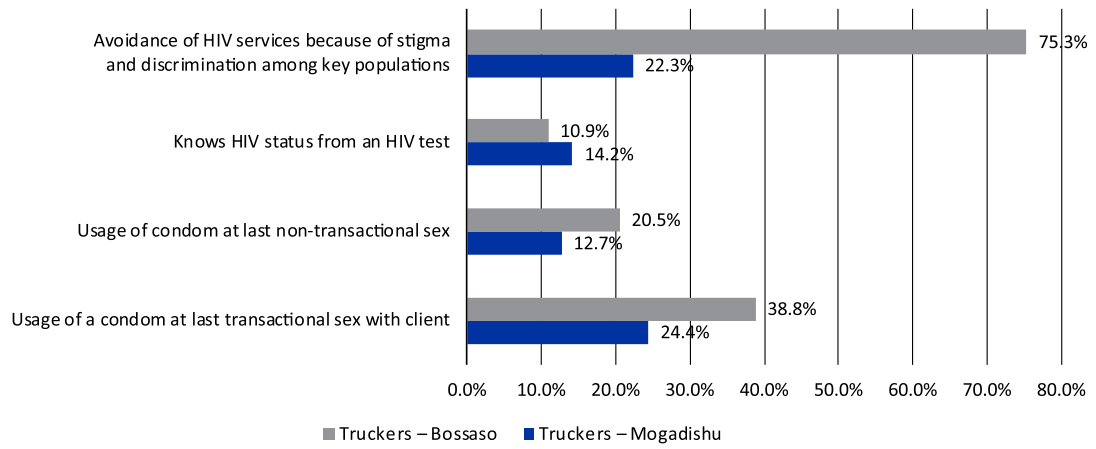
There is significantly higher HIV prevalence and coverage of HIV prevention programmes among Bossaso truckers. However, composite knowledge on HIV is higher among truckers in Mogadishu.

Figure 21: Comparison of GARPR indicators among truckers



Avoidance of HIV services is more pronounced among truckers in Bossaso. This could have affected their uptake for HIV services in Bossaso. Inconsistency in condom usage is present in both Mogadishu and Bossaso truckers as illustrated in Figure 22.

Figure 22: Comparison of selected indicators among truckers



5. Conclusion

The prevalence of HIV in South Central Somalia and Puntland is higher among FSWs compared with truckers, uniformed personnel and port workers. The prevalence of HIV among FSWs in Mogadishu (2.9%) and Bossaso (4.5%) is highest. Among uniformed personnel, the prevalence of HIV is 0.9 per cent in Mogadishu compared with 1.1 per cent among uniformed personnel in Bossaso. The prevalence of HIV among port workers is lower in Mogadishu (0.2%) compared to port workers in Bossaso (1.2%). In addition, truckers in Bossaso have a slightly lower HIV prevalence (0.4%) compared to those in Mogadishu (0.5%).

Furthermore, the prevalence of syphilis infection (ever infected) among FSWs in Mogadishu is 6.3 per cent compared to 1.1 per cent among FSW in Bossaso. Active syphilis infection is less than those who have had previous syphilis infection across the study groups. For instance, 1.8 per cent and 1.1 per cent is the active syphilis infection prevalence among FSWs in Mogadishu and Bossaso respectively. On the other hand, the prevalence of syphilis infection among client groups is highest among port workers in Bossaso (1.8%), uniformed personnel (1.6%) and port workers (1.5%) in Mogadishu.

The proportion of participants who correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission is highest among uniformed personnel (35.8% in Mogadishu and 24.4% in Bossaso) but lowest among port workers in Mogadishu (2.2%). Condom usage during last transactional sex is generally low across study groups, though highest among uniformed personnel in Bossaso (75.8%) and lowest among port workers in Mogadishu (17.6%). However, in most study groups in Bossaso and Mogadishu, condom use at last non-transactional sex is less than that in transactional sex.

Few participants knew their HIV status from an HIV test. A higher proportion among uniformed personnel in Bossaso (38.2%) know their HIV status from an HIV test compared to other groups. Coverage of HIV prevention programmes among key populations is generally low across the surveys in Mogadishu and Bossaso. Highest HIV programme coverage was recorded among groups in Bossaso compared to those in Mogadishu. Port workers in Bossaso had the highest coverage (28.3%), whereas the lowest is 0.2 per cent among FSWs in Bossaso.

Avoidance of HIV programmes because of stigma and discrimination among key populations is more pronounced among groups in Bossaso. For instance, 75.3 per cent of truckers in Bossaso reported this as a contributor to their low access to HIV services in Bossaso.

IDU exists among key populations in Mogadishu and Bossaso. IDU is highest among FSWs in Mogadishu and port workers both in Mogadishu and Bossaso. In addition, a small proportion of truckers and uniformed personnel also inject drugs across the two study sites.

6. Limitations of the study

In order to meet project timelines, this IBBS survey was implemented within a short period. The duration of the data collection ranged from one month to two months. In order for the survey team – especially the FSW team – to build trust with participants, it requires considerably more time to ensure validity of survey subjects, and comfort responding to invasive and personal questions. The IBBS team was able to reassure those who had the courage to come to the survey site, participate in the interview and obtain an HIV and syphilis test; however, with additional time and outreach/advocacy of the survey, the participants could have been more varied.

Security for both participants and IBBS survey data collection team was a constant challenge especially in Mogadishu. Frequent explosions occasionally led to teams and participants failing to access study site. The time lost was compensated by working from 7 a.m. until 6 p.m. for the days the security situation was favourable.

This IBBS survey intended to estimate the size of key population as part of good IBBS practices and in line with GARPR recommendations. However, there was no programme data specific to key population groups. This could have allowed for computation using survey data to generate size estimates by the health service multiplier methods.

This IBBS survey was undertaken during a drought and food shortage in Somalia. The fact that monetary incentives were given to participants to compensate their time and travel, the study risked to recruit participants disguising as FSWs, truckers, port workers or uniformed personnel. However, each study site had a well-trained screener and site team leader who tried as much as possible to ensure all participants met inclusion criteria. All the same, during the TWG in Mogadishu and Garowe, they agreed on locally appropriate incentive amount that could not meet the threshold of luring people to fake eligibility.

The high level of stigma and criminalization of sex work and HIV/AIDS in Somalia was more evident during RDS recruitment of FSWs. Some refused to come to the study site, fearing they could be arrested by law enforcers. In other instances, two FSWs relocated from Mogadishu and Bossaso to other towns like Garowe for fear that people might know they are sex workers and/or had HIV and AIDS. The IBBS site staff constantly reassured the participants of the safety and confidentiality of the whole data collection process.

The high stigma and discrimination associated with those who test HIV positive among uniformed personnel, truckers, port workers and FSWs could have contributed to some potential participants who knew their HIV positive status to choose not to participate in the IBBS survey as participation in this survey was entirely voluntary. The uniformed personnel also risked losing their job in the police or military in case their managers discovered they are HIV positive.

7. Recommendations

Optimization of HIV testing services among key populations

Findings of this IBBS survey indicate very low proportion of key populations who know their HIV status. To be precise, the lowest is 3.5 per cent (Mogadishu port workers), whereas the highest is 38.2 per cent (Bossaso uniformed personnel). Multiple HIV testing strategies targeting key populations at different hotspots should be undertaken by all stakeholders, including outreach testing using peer education approaches, and testing within health facility outpatient and inpatient testing (Provider Initiated Counselling and Testing).

Design and prompt implementation of a peer education strategy to increase coverage of HIV prevention programme among key populations

Coverage of HIV prevention programmes among key populations is low (less than 25%), with high rates of avoidance of HIV services due to stigma and discrimination, especially in Bossaso (up to 75.3% and 73.8% among truckers and port workers in Bossaso respectively). To ensure essential that HIV services reach the target population through recruited and trained key population peer educators, efforts need to be made by all stakeholders in Somalia to quickly design and roll out a peer education strategy. Such a peer education strategy should be designed in a way to increase referral of peers for HIV counselling and testing services in addition to STI screening and treatment.

Increase access to and use of condoms among key populations

Across all study groups, condom use (both male and female condoms) is low, with inconsistencies in condom use between transactional and non-transactional clients. The majority of respondents preferred to access condoms through pharmacies. HIV programmes in Somalia should consider partnering with private pharmacies to enable easier access to condom among key populations. Such partnership however, should take precautions as religious practices in Somalia prohibit condom promotion and use.

Comprehensive response to HIV prevention

For a comprehensive response to eliminate HIV focusing on prevention, more attention should be done to address social determinant of health such as education and employment. Programmes focusing on Income-generating activities and incentives to retain children and adolescents at school should be considered in the selected area with particular focus on women and adolescents.

Additional future IBBS research

While this survey acts as a baseline, future IBBS surveys should be conducted in Somalia to track progress of performance on key HIV indicators and establish trends in prevalence for HIV and STIs. Such future IBBS surveys will help to measure the success of HIV programmes in Somalia. In future IBBS surveys, it will be ideal to follow up the four groups included in this IBBS survey; however, it is also recommended to consider including other key population groups not included in this round. In Mogadishu, for instance, key HIV risk groups recommended to be included in future surveys include returnees, short-term migrants, prisoners and internally displaced persons.

Additional future HIV research

An evaluation study on the effectiveness of existing HIV programmes should be encouraged to better understand the low HIV information in Bosasso versus Mogadishu, despite higher coverage of HIV programmes. This study will serve programming future interventions and readjusting current operations.

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Appendix

Appendix 1: Combined population estimates across Somalia and Somaliland (separate report)

Table 1: Female sex workers estimates across Somalia and Somaliland (separate report)

Characteristic	Sample proportions		Population estimates	
	n/N	%	%	95% confidence interval
Prevalence of HIV among sex workers in Somalia	29/859	3.38	4.22	2.57–5.87
Prevalence of syphilis (ever infected) among sex workers in Somalia	39/859	4.54	4.54	1.64–7.44
Prevalence of syphilis (active infection) among sex workers in Somalia	27/859	3.14	2.44	1.50–3.38
Percentage of sex workers in Somalia who both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	217/859	25.26	27.78	24.62–30.94
Percentage of sex workers in Somalia who report the use of a condom at last transactional sexual intercourse	353/851	41.48	43.27	40.13–46.41

Table 2: Clients of sex workers estimates across Somalia and Somaliland (separate report)

Characteristic	Sample proportions		Population estimates	
	n/N	%	%	95% confidence interval
Prevalence of HIV among clients of sex workers (uniformed personnel, truck drivers and port workers in Somalia)	13/2,296	0.6	0.6	0.3–1.3
Prevalence of syphilis (ever infected) among clients of sex workers (uniformed personnel, truck drivers and port workers in Somalia)	22/2,296	1.0	0.6	0.4–1.1
Prevalence of syphilis (active infection) among clients of sex workers (uniformed personnel, truck drivers and port workers in Somalia)	11/2,296	0.5	0.4	0.2–0.9
Percentage of clients of sex workers (uniformed personnel, truck drivers and port workers) in Somalia who both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	308/2294	13.4	10.3	8.6–12.4

International Organization for Migration
Mission in Somalia, Nairobi Office
Gitanga Groove, off Gitanga Road, Lavington,
Nairobi/Kenya, P.O. Box 1810-00606,
Tel: +254 20 2926000 • +254 708 151656 • +254 708 151643 • +254 733122584
E-mail: iomsomalia@iom.int