

Table 1 Characteristics of the 1140 refugee community members included in the study.

	Total (%) n=1140	Male (%) n=570	Female (%) n=570	<i>P</i> value
Age (years)				<.001
15-19	318 (27.9)	137 (24.0)	181 (31.8)	
20-29	375 (32.9)	227 (39.8)	148 (26.0)	
30-39	233 (20.4)	115 (20.2)	118 (20.7)	
40-49	214 (18.8)	91 (16.0)	123 (21.6)	
Current marital status				<.001
Married and living with a spouse	516 (45.3)	273 (47.9)	243 (42.6)	
Not married but living with a long-term partner	198 (17.4)	91 (16.0)	107 (18.8)	
Married but not living with a spouse	51 (4.5)	17 (3.0)	34 (6.0)	
Divorced	38 (3.3)	11 (1.9)	27 (4.7)	
Widow/widower	45 (3.9)	6 (1.1)	39 (6.8)	
Single	292 (25.6)	172 (30.2)	120 (21.1)	
Ever attended school				<.001
Yes	967 (84.8)	539 (94.6)	428 (75.1)	
No	173 (15.2)	31 (5.4)	142 (24.9)	
Incoming generating activity				<.001
Yes	341 (29.9)	209 (36.7)	132 (23.2)	
No	799 (70.1)	361 (63.3)	438 (76.8)	
Length of stay in Nyarugusu Camp				.105
1-3 years	41 (3.6)	22 (3.9)	19 (3.3)	
4-6 years	277 (24.3)	153 (26.8)	124 (21.8)	
7+ years	822 (72.1)	395 (69.3)	427 (74.9)	

Chi-square test

Table 2 Risks of HIV infection before and after displacement of refugees aged ≥ 15 years at the time of displacement.

	<i>Before Displacement (%) n=682</i>	<i>After Displacement (%) n=682</i>	<i>Pvalue</i>
N of non-regular partners in the last 12 months			.300
1+	188 (27.6)	206 (30.2)	
0	69 (10.1)	52 (7.6)	
N. A.	425 (62.3)	424(62.2)	
Sex in exchange for money or gifts			<.001
Yes	131 (19.2)	149 (21.8)	
No	74 (10.9)	56 (8.3)	
N.A.	477 (69.9)	477 (69.9)	
Forced sex			<.001
Yes	37 (5.5)	25 (3.7)	
No	18 (2.6)	30 (4.4)	
N.A.	627 (91.9)	627 (91.9)	
Sex with a male partner			N.A.
Yes	4 (0.6)	0	
No	0	4 (0.6)	
N.A.	678 (99.4)	678 (99.4)	
Sharing syringes with others			.151
Yes	2 (0.3)	5 (0.7)	
No	7 (1.0)	5 (0.7)	
N.A.	673 (98.7)	672 (98.6)	

Chi-square test (N.A. was not included in conducting the chi-square test.)

Table 3 Knowledge and attitude towards HIV/AIDS by sex.

	Total (%) n=1140	Male (%) n=570	Female (%) n=570	Pvalue
Ever heard of HIV/AIDS				<.001
Yes	1079 (94.6)	561 (98.4)	518 (90.9)	
No	61 (5.4)	9 (1.6)	52 (9.1)	
Ever heard of a (male) condom				<.001
Yes	1000 (87.7)	546 (95.8)	454 (79.6)	
No	140 (12.3)	24 (4.2)	116 (20.4)	
Ever heard of a female condom				.062
Yes	662 (58.1)	379 (66.5)	283 (49.6)	
No	336 (29.4)	166 (29.1)	170 (29.8)	
N.A.	142 (12.5)	25 (4.4)	117 (20.6)	
Perceived access to condoms				.085
Easy	865 (75.8)	482 (84.6)	383 (67.2)	
Difficult/it depends	134 (11.8)	64 (11.2)	70 (12.3)	
N.A.	141 (12.4)	24 (4.2)	117 (20.5)	
Knowledge of HIV prevention				
There is anything one can do to avoid HIV/AIDS	1026 (90.0)	557 (97.7)	469 (82.3)	<.001
Can prevent by abstaining from sex	785 (68.9)	533 (93.5)	252 (44.2)	<.001
Can prevent by staying faithful to one partner	1019 (89.4)	546 (95.8)	473 (83.0)	<.001
Can prevent by using a condom correctly for every sex	776 (68.1)	508 (89.1)	268 (47.0)	<.001
Can prevent by not injecting with a used needle	1035 (90.8)	549 (96.3)	486 (85.3)	<.001
Attitude on HIV prevention				
Would be willing to abstain from sex	722 (63.3)	364 (63.9)	358 (62.8)	.165
Would be willing to stay faithful to one partner	1060 (93.0)	554 (97.2)	506 (88.8)	.111
Would be willing to use a condom	753 (66.1)	422 (74.0)	331 (58.1)	<.001
Would be willing to request/ask for a permission to use a condom	756 (66.3)	414 (72.6)	342 (60.0)	.004
Would be willing to maintain personal control over syringes, ie. not sharing them with others	1040 (91.2)	543 (95.3)	497 (87.2)	.290

Chi-square test (N.A. was not included in conducting the chi-square test.)

Table 4 Risky behaviors related to HIV/AIDS by sex.

	Total (%)	Male (%)	Female (%)	P value
	n=1140	n=570	n=570	
Age of the first sexual intercourse				.001
14 years of age or below	213 (18.7)	131 (23.0)	82 (14.4)	
15 years of age or above	773 (67.8)	379 (66.5)	394 (69.1)	
N.A.	154 (13.5)	60 (10.5)	94 (16.5)	
Had sex before marriage				<.001
Yes	480 (42.1)	313 (54.9)	167 (29.3)	
No	279 (24.5)	46 (8.1)	233 (40.9)	
N.A.	381 (33.4)	211 (37.0)	170 (29.8)	
N of regular partners in the last 12 months				.008
1+	878 (77.0)	442 (77.5)	436 (76.5)	
0	108 (9.5)	69 (12.1)	39 (6.8)	
N.A.	154 (13.5)	59 (10.4)	95 (16.7)	
N of non-regular partners in the last 12 months				<.001
1+	346 (30.4)	219 (38.4)	127 (22.3)	
0	61 (5.4)	53 (9.3)	8 (1.4)	
N.A.	733 (64.2)	298 (52.3)	435 (76.3)	
Ever had sex for money or gifts after displacement				.001
Yes	248 (21.8)	141 (24.7)	107 (18.8)	
No	62 (5.4)	50 (8.8)	12 (2.1)	
N.A.	830 (72.8)	379 (66.5)	451 (79.1)	
Partner of sex for money or gift (multiple response)				
Refugee/Congolese	219 (19.2)	132 (23.2)	87 (15.3)	.324
Persons from local Tanzanian community	42 (3.7)	32 (5.6)	10 (1.8)	.042
Military/militias/other security forces	5 (0.4)	0 (0)	5 (0.9)	.004
Police	33 (2.9)	1 (0.2)	32 (5.6)	<.001
Humanitarian worker	33 (2.9)	4 (0.7)	29 (5.1)	<.001
Used a condom with the last regular partner				<.001
Yes	228 (20.0)	147 (25.8)	81 (14.2)	
No	758 (66.5)	364 (63.8)	394 (69.1)	
N.A.	154 (13.5)	59 (10.4)	95 (16.7)	
Used a condom with the last non-regular partner				<.453
Yes	155 (13.6)	100 (17.5)	55 (9.6)	
No	251 (22.0)	171 (30.0)	80 (14.0)	
N.A.	734 (64.4)	299 (52.5)	435 (76.4)	
Ever requested or asked for permission to use a condom during sex				<.001
Yes	381 (33.4)	244 (42.8)	137 (24.0)	
No	495 (43.4)	234 (41.1)	261 (45.8)	
N.A.	264 (23.2)	92 (16.1)	172 (30.2)	
Ever took drugs, e.g. miraa, bangi, madrax				.005
Yes	54 (4.7)	37 (6.5)	17 (3.0)	
No	1084 (95.1)	531 (93.1)	553 (97.0)	
N.A.	2 (0.2)	2 (0.4)	0	
Ways to take drugs (multiple response)				
Smoking	31 (2.7)	21 (3.7)	10 (1.8)	.973
Eating/drinking after infusion	20 (1.8)	17 (3.0)	3 (0.5)	.038
Chewing	10 (0.9)	4 (0.7)	6 (1.1)	.036
Injection	7 (0.6)	3 (0.5)	4 (0.7)	.127
Inhalation	5 (0.4)	2 (0.4)	3 (0.5)	.160
Ever shared syringes with other drug users				.095
Yes	7 (0.6)	3 (0.5)	4 (0.7)	
No	39 (3.4)	29 (5.1)	10 (1.8)	
N.A.	1094 (96.0)	538 (94.4)	556 (97.5)	

Chi-square test (N.A. was not included in conducting the chi-square test.)

Table 5 Sexual practice by condom use with a non-regular partner.

	Total (%)	Used a condom with a non-regular partner	Did NOT use a condom with a non-regular partner	<i>P</i> value
Ever had sex for money or gifts after displacement (n=242 ^a)				<.001
Yes	201 (83.1)	109	92	
No	41 (16.9)	6	35	
Partner of sex for money or gift after displacement (multiple response)				
Refugee/Congolese	178 (89.4)	92	86	.086
Persons from local Tanzanian community	38 (19.1)	26	12	.044
Military/militia/other security forces	5 (2.5)	5	0	.036
Police	31 (15.6)	21	10	.089
Humanitarian worker	31 (15.6)	20	11	.191

Chi-square test (N.A. was not included in conducting the chi-square test.)

a. Those who have ever had sex for money/gift among 406 refugees with a non-regular partner sex experience.

Table 6 Perceived sources of influence on HIV prevention by sex, age and awareness of condom use with a non-regular partner.

	Sex				Age			Have ever heard of a condom			Used a condom with the last non-regular partner				
	Total (%) n=1079 ^a	Male (%) n=560	Female (%) n=519	P value	15-29 (%) n=655	30-49 (%) n=424	P value	Yes (%) n=990	No (%) n=89	P value	Total (%) n=401 ^b	Yes (%) n=155	No (%) n=246	P value	
Perceived influence on HIV prevention (multiple response / n=1079)	Radio broadcast messages			<.001			.573			<.001				.198	
	Yes	843 (78.1)	480 (85.7)	363 (69.9)	508 (77.6)	335 (79.0)		796 (80.4)	47 (52.8)		343 (85.5)	137 (88.4)	206 (83.7)		
	No	236 (21.9)	80 (14.3)	156 (30.1)	147 (22.4)	89 (21.0)		194 (19.6)	42 (47.2)		58 (14.5)	18 (11.6)	40 (16.3)		
	Dispensary/health post			<.001			<.001			.492					.600
	Yes	766 (71.0)	324 (57.9)	442 (85.2)	431 (65.8)	335 (79.0)		700 (70.7)	66 (74.2)		289 (72.1)	114 (73.5)	175 (71.1)		
	No	313 (29.0)	236 (42.1)	77 (14.8)	224 (34.2)	89 (21.0)		290 (29.3)	23 (25.8)		112 (27.9)	41 (26.5)	71 (28.9)		
	Refugee workers*			<.001			.043			<.001					.618
	Yes	762 (70.8)	429 (76.7)	333 (64.3)	479 (73.2)	283 (66.9)		718 (72.6)	44 (50.0)		313 (78.1)	123 (79.4)	190 (77.2)		
	No	314 (29.2)	130 (23.3)	184 (35.5)	175 (26.8)	139 (32.9)		270 (27.3)	44 (50.0)		88 (21.9)	32 (20.6)	56 (22.8)		
	Friends			.185			.503			.029					<.001
	Yes	685 (63.5)	366 (65.4)	319 (61.5)	421 (64.3)	264 (62.3)		638 (64.4)	47 (52.8)		265 (66.1)	119 (76.8)	146 (59.3)		
	No	394 (36.5)	194 (34.6)	200 (38.5)	234 (35.7)	160 (37.7)		352 (35.6)	42 (47.2)		136 (33.9)	36 (23.2)	100 (40.7)		
	Family/relatives			.001			.460			.021					.022
	Yes	375 (34.8)	169 (30.2)	206 (39.7)	222 (33.9)	153 (36.1)		354 (35.8)	21 (23.6)		143 (35.7)	66 (42.6)	77 (31.3)		
No	704 (65.2)	391 (69.8)	313 (60.3)	433 (66.1)	271 (63.9)		636 (64.2)	68 (76.4)		258 (64.3)	89 (57.4)	169 (68.7)			
Religious leaders			<.001			.002			.004					.001	
Yes	312 (28.9)	135 (24.2)	177 (34.1)	167 (25.5)	145 (34.2)		298 (30.1)	14 (15.7)		126 (31.4)	34 (21.9)	92 (37.4)			
No	766 (71.1)	424 (75.8)	342 (65.9)	487 (74.5)	279 (65.8)		691 (69.9)	75 (84.3)		275 (68.6)	121 (78.1)	154 (62.6)			
Traditional healers/prayers			<.001			.025			.320					.028	
Yes	119 (11.0)	35 (6.3)	84 (16.2)	61 (9.3)	58 (13.7)		112 (11.3)	7 (7.9)		43 (10.7)	10 (6.5)	33 (13.4)			
No	960 (89.0)	525 (93.8)	435 (83.8)	594 (90.7)	366 (86.3)		878 (88.7)	82 (92.1)		358 (89.3)	145 (93.5)	213 (86.6)			
*Details of refugee worker	Youth peer educators			.376			<.001		.006					.002	
	Yes	550 (51.0)	294 (52.5)	256 (49.3)	401 (61.2)	149 (35.1)		519 (52.4)	31 (34.8)		220 (54.9)	100 (64.5)	120 (48.8)		
	No	529 (49.0)	266 (47.5)	263 (50.7)	254 (38.8)	275 (64.9)		471 (47.6)	58 (65.2)		181 (45.1)	55 (35.5)	126 (51.2)		
	Health Information Team			.913			<.001		.001					<.001	
	Yes	547 (50.7)	283 (50.5)	264 (50.9)	286 (43.7)	261 (61.6)		517 (52.2)	30 (33.7)		238 (59.4)	110 (71.0)	128 (52.0)		
	No	532 (49.3)	277 (49.5)	255 (49.1)	369 (56.3)	163 (38.4)		473 (47.8)	59 (66.3)		163 (40.6)	45 (29.0)	118 (48.0)		
VCT counselors			.001			<.001		.011						.117	
Yes	321 (29.8)	142 (25.4)	179 (34.6)	151 (23.1)	170 (40.1)		305 (30.9)	16 (18.0)		144 (35.9)	63 (40.6)	81 (32.9)			
No	756 (70.2)	417 (74.6)	339 (65.4)	502 (76.9)	254 (59.9)		683 (69.1)	73 (82.0)		257 (64.1)	92 (59.4)	165 (67.1)			

Chi-square test

a. Those who have ever heard of HIV/AIDS among 1140.

b. Those who have ever had sex with a non-regular partner among 1140.

Table 7 Characteristics of those who were HIV-positive and those who were HIV-negative.

	Total (%) n=643	HIV+ (%) n=182	HIV- (%) n=461	<i>P</i> value
Sex				<.001
Male	301 (46.8)	59 (32.4)	242 (52.5)	
Female	342 (53.2)	123 (67.6)	219 (47.5)	
Age (years)				.003
15-19	75 (11.7)	9 (4.9)	66 (14.3)	
20-29	263 (40.9)	73 (40.1)	190 (41.2)	
30-39	206 (32.0)	71 (39.0)	135 (29.3)	
40-49	99 (15.4)	29 (15.9)	70 (15.2)	
Mean (\pm SD)	29.49 (8.561)	30.88 (7.486)	28.94 (8.897)	
Current marital status				<.001
Married and living with a spouse	399 (62.1)	107 (58.8)	292 (63.3)	
Not married but living with a long-term partner	100 (15.6)	10 (5.5)	90 (19.5)	
Married but not living with a spouse	31 (4.8)	14 (7.7)	17 (3.7)	
Divorced	39 (6.1)	25 (13.7)	14 (3.0)	
Widow/widower	23 (3.6)	15 (8.2)	8 (1.7)	
Single	51 (7.9)	11 (6.0)	40 (8.7)	
Married or living with a partner to have sex with				<.001
Yes	538 (83.7)	133 (73.1)	405 (87.9)	
No	84 (13.1)	49 (26.9)	35 (7.6)	
N.A.	21 (3.3)	0	21 (4.6)	
Ever attended school				.629
Yes	568 (88.3)	159 (87.4)	409 (88.7)	
No	75 (11.7)	23 (12.6)	52 (11.3)	
Incoming generating activity				.013
Yes	229 (35.6)	51 (28.0)	178 (38.6)	
No	414 (64.4)	131 (71.9)	283 (61.4)	
N of years between arrival at Nyarugusu Camp and revealing his/her HIV status				<.001
<1 year	2 (0.3)	2 (1.1)	0	
1-3 years	28 (4.4)	12 (6.6)	16 (3.5)	
4-6 years	211 (32.8)	95 (52.2)	116 (25.2)	
7+ years	402 (62.5)	73 (40.1)	329 (71.4)	

Chi-square test (N.A. was not included in conducting the chi-square test.)

Table 8 Knowledge, attitude and practice of HIV prevention among those who were HIV-positive and those who were HIV-negative.

	Total (%) n=643	HIV+ (%) n=182	HIV- (%) n=461	Pvalue
Knowledge of HIV prevention				
Can prevent by staying faithful to one partner				.009
Yes	616 (95.8)	181 (99.5)	435 (94.4)	
No	23 (3.6)	1 (0.5)	22 (4.8)	
N.A.	4 (0.6)	0	4 (0.9)	
Can prevent by using a condom correctly for every sex				<.001
Yes	518 (80.6)	181 (99.5)	337 (73.1)	
No	110 (17.1)	0	110 (23.9)	
N.A.	15 (2.3)	1 (0.5)	14 (3.0)	
Attitude on HIV prevention				
Would be willing to stay faithful to one partner				<.001
Yes	552 (85.8)	100 (54.9)	452 (98.0)	
No	88 (13.7)	82 (45.1)	6 (1.3)	
N.A.	3 (0.5)	0	3 (0.7)	
Would be willing to use a condom				<.001
Yes	498 (77.4)	175 (96.2)	323 (70.1)	
No	142 (22.1)	7 (3.8)	135 (29.3)	
N.A.	3 (0.5)	0	3 (0.7)	
N of non-regular partners in the last 12 months				<.001
0	398 (61.9)	75 (41.2)	323 (70.1)	
1	92 (14.3)	24 (13.2)	68 (14.8)	
2+	153 (23.8)	83 (45.6)	70 (15.2)	
Ever had sex in exchange for money or gifts				<.001
Yes	112 (17.4)	61 (33.5)	51 (11.1)	
No	510 (79.3)	121 (66.5)	389 (84.4)	
N.A.	21 (3.3)	0	21 (4.6)	
Used a condom with the last non-regular partner				.036
Yes	141 (21.9)	69 (37.9)	72 (15.6)	
No	152 (23.6)	56 (30.8)	96 (20.8)	
N.A.	350 (54.4)	57 (31.3)	293 (63.6)	

Chi-square test (N.A. was not included in conducting the chi-square test.)