

Uptake of HIV Testing Services Among Refugee Men in Kiryandongo Refugee Settlement Camp, Mid-Western Uganda.

ABSTRACT

Aims: HIV testing is a critical check point to late diagnosis and delayed treatment. However, utilization of HIV testing services has not yet reached the desired target especially for men. This study aimed at determining the level of uptake of HIV testing services and the associated factors among refugee men in Kiryandongo Refuge Settlement Camp.

Study design: Cross-sectional

Methodology: The study was conducted by mixed methods. A total of 422 men >18 years were selected using systematic random sampling. Interview administered semi-structured - questionnaires and informant interview guides were used to collect quantitative and qualitative data respectively.

Results: The level of uptake of HIV testing services was 32%. Participants who thought that the man is always wrong ($P=0.006$, AOR=3.80) were 3.80 times less likely to uptake HIV testing services. In addition, men who were unable to disclose their HIV status when positive ($P=0.006$, AOR=0.29), uneducated on HIV/AIDs ($P=0.002$, AOR=0.14), never thought that HIV testing is important ($P=0.000$, AOD=0.08), men unemployed ($P=0.015$, AOR=0.17), Anglican ($P=0.043$, AOD=0.37), had 4-6 sexual partner ($P=0.033$, AOR=0.23), where less likely to uptake the uptake HIV testing services.

Conclusion: The level of uptake of HIV testing services among refugee men in Kiryandongo refugee settlement camp is significantly lower than the national mark. Targeted testing strategies and sensitization are critical to address factors that are negatively associated with the uptake.

Key words: *Uptake, HIV Testing services, Refuge Men, Kiryandongo Settlement Camp*

1. INTRODUCTION

By the end 2023, over 39 million people were living with HIV, 65% of whom are in the WHO African Region [<https://www.who.int/news-room/fact-sheets/detail/hiv-aids>]. Over 85% of the people living with HIV, had tested for HIV. Globally, over 80% of the men tested for HIV by 2023. In Uganda, over 1.4 million people are living with HIV and of these, (1,289,028, 92%) know their status[1].

Three quarters the world's refugees are hosted in low- and middle-income countries. [<https://www.unhcr.org/refugee-statistics/>]. Currently the refugees in Uganda are 1,673,811 and of these, . (119,219, 6.9%) are hosted in the Kiryandongo settlement camp [<https://data.unhcr.org/en/country/uga>]. Only 1.1% of the refugees in Uganda are the men living with HIV[2]. Men have a lower tendency in up taking HIV testing services as compared to women[3, 4]. In as much, inhabitants of refugee camps have peculiar challenges and barriers to HIV testing[5]. While limited data is available on refugee men-specific barriers to HIV testing, the existing literature mentions challenges including refugees tending to prioritize day-to-day survival matters such as food, safety, and shelter over their future health[5]. Therefore, understanding what makes HIV testing possible and impossible can inform interventions to increase HIV testing among refugee men. This study, therefore, aimed at establishing the level of uptake of HIV testing and the factors associated to HIV testing among refugee men in Kiryandongo refugee settlement camp in order to inform targeted interventions and policies to improve HIV testing among the men in the refugees.

2. METHODOLOGY

2.1 Study area

Kiryandongo refugee camp is located in Bweyale town council, Kibanda Health Sub-District in Kiryandongo District, Mid-western Uganda with a population of 119,219. The settlement is divided into 19 clusters; A, B, C, D, E, F, K, T, S, M, R, I, O, Q, L, N, J, H and G. The camp has three health facilities; Panyadoli health Centre III, Panyadoli hills health Centre II and Nyakadoti health centre II. (<https://data.unhcr.org/en/country/uga>).

2.1.1 Study design: This was a cross sectional study of mixed research methods.

2.1.1.1 Study population: This study focused on refugee men >18 years old, living and receiving care at the health facilities in Kiryandongo Refugee Settlement Camp

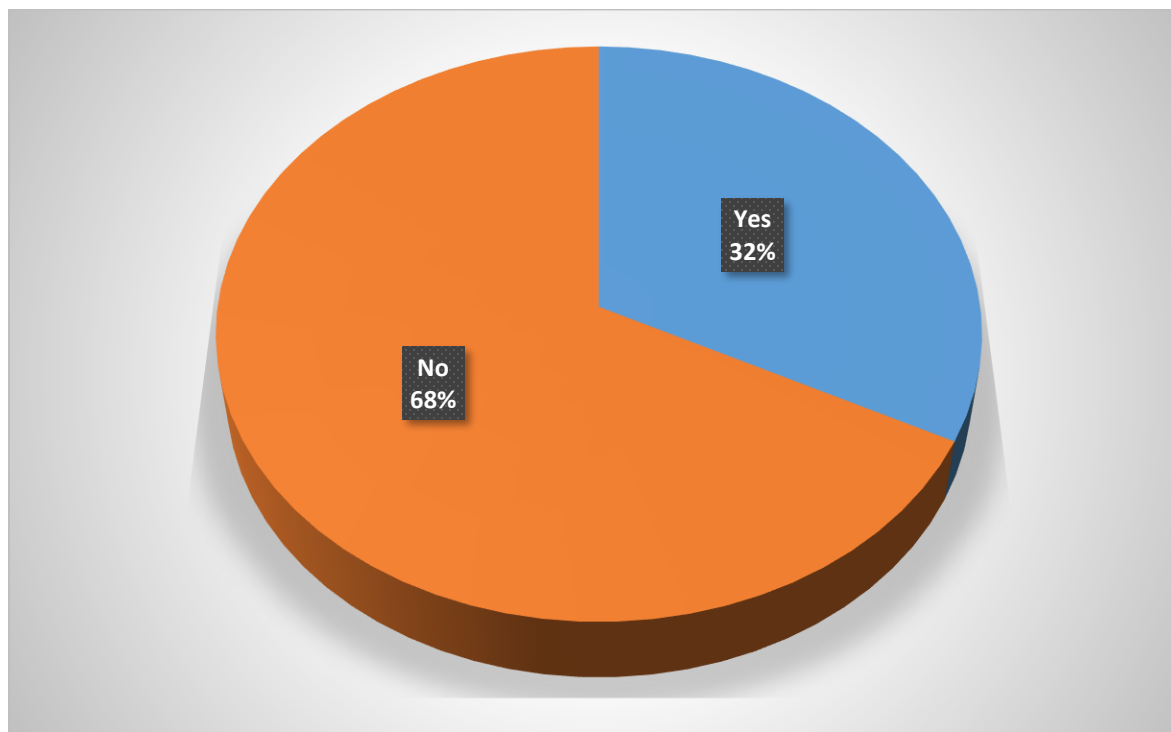
2.1.1.1.1 Sampling technique: The eligible participants were enrolled using a systematic random sampling method.

3. RESULTS AND DISCUSSION

3.1 The level of uptake of HIV Testing services

Figure 1 shows that uptake HIV testing services was almost one third (32%, n=422)

Figure 1: Level of HIV testing services uptake



3.1.1 Factors associated with uptake of HIV testing at bivariate analysis

3.1.1.1 Socio-demographic factors

At bivariate binary logistic analysis, the age, occupation, religion, sexual partners and the distance from the health facility were significantly associated with the uptake of the HIV testing services as shown in table 1, below. Men who were aged 31-45 ($P=0.01$, $COR=0.55$ (0.34-0.89), $CI=95\%$), 46-60 ($P=0.000$, $COR=0.15$ (0.07-0.34), $CI=95\%$), and 61-75 ($P=0.009$, $COR=0.07$ (0.01-0.51), $CI=95\%$) were less likely to uptake the HIV testing services. Men who were Pentecostal ($P=0.001$, $COR=4.03$ (1.86-9.94), $CI=95\%$) were 4.03 times more likely to uptake HIV testing services. However, men who were Anglican ($P=0.03$, $COR=0.58$ (0.36-0.95), $CI=95\%$) and those who were SDA ($P=0.028$, $COR=0.41$ (0.19-0.91), $CI=95\%$) were 0.58 times and 0.41 times respectively less likely to uptake the HIV testing services than any other man in the reference category. Men who had 4-6 sexual partners ($P=0.000$, $COR=0.10$ (0.05-0.22), $CI=95\%$) were 0.1 times less likely to uptake the HIV testing services than any other man in the reference category. Men who lived in a distance of more than 5km from the health facility ($P=0.000$, $COR=0.03$ (0.01-0.07), $CI=95\%$) were 0.03 times less likely to uptake the HIV testing services than any other man in the reference category.

Table 1: Socio-demographic factors associated with the uptake of the HIV testing service

Factors	Uptake of HIV testing				Crude Odds Ratios (COR) at 95% Confidence Interval (CI)	P-values
	Yes (137)		No (285)			
	F	%	F	%		
Age group						
18-30	89	64.87	113	39.65		
31-45	40	29.20	93	32.63	0.55 (0.34-0.89)	0.010*
46-60	7	5.11	60	21.05	0.15 (0.07-0.34)	0.000*
61-75	1	0.73	19	6.67	0.07 (0.01-0.51)	0.009*
Occupation						
Formal	24	17.52	29	10.18		
Informal	87	63.50	176	61.75	0.59 (0.33-1.09)	0.092
Unemployed	26	18.98	80	28.07	0.39 (0.20-0.79)	0.009*
Marital status						
Single	29	21.71	58	20.35		
Married	96	70.07	216	75.79	0.89 (0.54-1.48)	0.649
Separated/divorced	2	1.46	8	2.81	0.50 (0.10-2.51)	0.399
Widowed	10	3.70	3	1.05	6.67 (0.170-26.11)	0.006
Level of education						
Never educated	22	16.06	45	15.79		
Primary	45	32.85	127	44.56	0.72 (0.39-1.34)	0.303
Secondary	54	39.42	98	34.39	1.13 (0.61-2.07)	0.700
Tertiary	16	11.65	15	5.26	2.81 (0.91-5.21)	0.079
Religion						
Catholic	64	46.72	118	41.40		
Anglican	34	24.82	108	37.89	0.58 (0.36-0.95)	0.030*
Save/Pentecostal	21	15.33	9	3.16	4.03 (1.86-9.94)	0.001*
Muslim	9	6.57	10	3.51	1.65 (0.64-4.29)	0.296
SDA	9	6.57	40	14.04	0.41 (0.19-0.91)	0.028*
Sexual partners						
0-3	120	87.59	159	55.79		
4-6	8	5.84	105	36.84	0.10 (0.05-0.22)	0.000*
7-9	9	6.57	21	7.37	0.57 (0.25-1.28)	0.174
Distance from the health facility						
Less a kilometer	57	41.61	63	22.11		
More than 1km but less than 5km	74	55.47	75	26.32	1.12 (0.69-1.81)	0.643
More than 5km	4	2.92	147	51.58	0.03 (0.01-0.07)	0.000*

3.1.1.1.1 Socio-cultural factors

Table 2 shows that respondent's ability to disclose positive HIV status and negative HIV status, where a man is wrong or not, a person to pay bills when the respondent is unable, and the substance taken by the respondents were significantly associated with the uptake of the HIV testing services.

Men who could not disclose their HIV status when they test positive ($P=0.000$, COR= 0.02 (0.01-0.04), CI=95%) were 0.02 times less likely to uptake HIV testing services. Similarly, men who could not disclose their HIV status when they test negative ($P=0.000$, COR= 0.04 (0.02-0.067), CI=95%) were 0.04 times less likely to uptake the HIV testing services than any other man in the reference category.

Men who thought that a man is always wrong ($P=0.000$, $COR=6.34$ (4.06-9.94), $CI=95\%$) were 6.34 times more likely to uptake HIV testing services compared to men who thought that a man is always right.

Men who mention a brother ($P=0.000$, $COR=0.24$ (0.13-0.450), $CI=95\%$) and those who mentioned friends ($P=0.000$, $COR=0.12$ (0.04-0.32), $CI=95\%$) as a people to come when they are unable to pay bills were 0.24 time and 0.12 times respectively less likely to uptake HIV testing services compared to other men in the reference category.

Also, men who use substances (cigarette and alcohol) ($P=0.000$, $COR=7.88$ (4.92-12.63), $CI=95\%$) were 7.88 more likely to uptake the HIV testing services compared to those who never used substance.

Table 2: socio-cultural factors associated with the uptake of the HIV testing services

Variable	Uptake of HIV testing				Crude Odds Ratios (COR) at 95% Confidence Interval (CI)	P-values
	Yes (137)		No (285)			
	F	%	F	%		
Respondent able to disclose HIV status in case it is negative						
Yes	112	81.25	42	14.74		
No	25	18.25	243	85.26	0.04 (0.02-0.067)	0.000*
In your culture, a man is always;						
Right	43	31.39	212	74.39		
Wrong/somehow right	94	68.61	73	25.65	6.34 (4.06-9.94)	0.000*
A person to come in if the respondent is un able to pay bills						
Parents	60	43.80	74	25.96		
Brother	18	13.14	91	31.93	0.24 (0.13-0.45)	0.000*
Sister	11	8.03	13	4.56	1.04 (0.44-2.60)	0.924
Wife	22	16.06	34	11.93	0.80 (0.42-1.51)	0.486
Friends	5	3.65	52	18.25	0.12 (0.04-0.32)	0.000*
None	4	2.92	6	2.11	0.82 (0.22-3.05)	0.770
Others*6	17	12.41	15	5.26	1.40 (0.64-3.02)	0.396
Use of substance						
Yes	58	42.34	243	85.26		
No	79	57.66	42	14.74	7.88 (4.92-12.63)	0.000*

3.1.1.1.1 Knowledge and attitude towards the uptake of HIV testing services

Table 3 indicates that awareness about HIV testing services, being educated on HIV/AIDs, a place to go for HIV test, and having a thought that HIV testing is important are significantly associated with uptake of HIV testing services among men.

Men who were not aware of the HIV testing services in the health facility ($P=0.000$, $COR=0.03$ (0.01-0.06), $CI=95\%$) were 0.03 times less likely to uptake the HIV testing services than men who were aware of the testing services in the health facility.

Men who had never been educated on HIV/AIDs ($P=0.000$, $COR=0.04$ (0.02-0.08), $CI=95\%$) were 0.04 times less likely to uptake HIV testing services than those were educated on the HIV/AIDs.

Men who did not know a place to go when they want to test for HIV ($P=0.000$, $COR=0.03$ (0.01-0.07), were 0.04 times less likely to uptake HIV testing services than any other man in the reference category

Men who never thought that HIV testing is important ($P=0.000$, $COR=0.01$ (0.01-0.03), $CI=95\%$) were 0.01 less likely to uptake HIV testing services compared to men who thought that HIV testing is important.

Table 3: Association between uptake of the HIV testing and knowledge and attitude towards HIV testing

Factor	Uptake of HIV testing				Crude Odds Ratios (COR) at 95% Confidence Interval (CI)	P-values
	Yes (137)		No (285)			
	F	%	F	%		
Awareness of the respondent about HIV testing services in the health facilities in the settlement camp						
Yes	130	94.89	99	34.74		
No	7	5.11	186	65.25	0.03 (0.01-0.06)	0.000*
Respondent ever been educated on HIV/AIDs						
Yes	124	90.51	85	29.82		
No	13	9.49	200	70.18	0.04 (0.02-0.08)	0.000*
A place to go when the respondent wants to test for HIV/AIDs						
Health facility	119	86.86	89	31.23		
Don't know	8	5.84	189	66.32	0.03 (0.01-0.07)	0.000*
Wait for mass testing to take place	7	5.11	4	1.04	1.30 (0.37-4.68)	0.675
Others*2	3	2.19	3	1.05	0.74 (0.37-3.79)	0.726
Do you think HIV testing is Important?						
Yes	127	92.70	41	14.39		
No	10	7.30	244	85.61	0.01 (0.01-0.03)	0.000*

3.1.1.1.1.1 Factors associated with the uptake of HIV testing services at multivariate analysis

After adjusting for the cofounding factors at multilevel binary logistic regression analysis, occupation, religion, sexual partners, ability to disclose positive HIV status, a man being right or not, education on HIV/AIDs, and thought whether HIV testing is important maintained their statistical significance as shown in table 4 below. Men who were unemployed ($P=0.015$, $AOR=0.17$ (0.04-0.71), $CI=95\%$) were 0.17 times less likely to uptake the HIV testing services. Men who were Anglican ($P=0.043$, $AOR=0.37$ (0.14-0.97), $CI=95\%$) were 0.37 times less likely to uptake HIV testing services compared to men from any other religions. Men who had 4-6 sexual partner ($P=0.033$, $AOR=0.23$ (0.06-0.89), $CI=95\%$) were 0.23 times less likely to uptake HIV testing than any other man in the reference category. Men who were unable to disclose their HIV status when positive ($P=0.006$, $AOR=0.29$ (0.12-0.69), $CI=95\%$) were 0.29 times less likely to

uptake the HIV testing services compared to men who were able to disclose their HIV status. Men who thought that the man is always wrong ($P=0.006$, AOR=3.80 (1.46-9.88), CI=95%) were 3.80 times less likely to uptake HIV testing services than men who thought that a man is always right. Men who had never been educated on HIV/AIDs ($P=0.002$, AOR=0.14 (0.04-0.49), CI=95%) were 0.14 less likely to uptake HIV testing services than men who had ever been educated on HIV/AIDs

Men who never thought that HIV testing is important ($P=0.000$, AOR=0.08 (0.02-0.21), CI=95%) were 0.08 times less likely to uptake HIV services compared to those who thought that HIV testing is important.

Table4: Factors associated with the uptake of HIV testing services at multivariate analysis

Factors	Uptake of HIV testing				Adjusted Odds Ratios (COR) at 95% Confidence Interval (CI)	P-values
	Yes (137)		No (285)			
	F	%	F	%		
Age group						
18-30	89	64.87	113	39.65		
31-45	40	29.20	93	32.63	0.86 (0.29-2.54)	0.779
46-60	7	5.11	60	21.05	0.97 (0.20-4.76)	0.966
61-75	1	0.73	19	6.67	0.36 (0.01-10.00)	0.549
Occupation						
Formal	24	17.52	29	10.18		
Informal	87	63.50	176	61.75	0.60 (0.17-2.15)	0.433
Unemployed	26	18.98	80	28.07	0.17 (0.04-0.71)	0.015*
Religion						
Catholic	64	46.72	118	41.40		
Anglican	34	24.82	108	37.89	0.37 (0.14-0.97)	0.043*
Save/Pentecostal	21	15.33	9	3.16	0.39 (0.09-1.69)	0.208
Muslim	9	6.57	10	3.51	4.88 (4.81-49.53)	0.180
SDA	9	6.57	40	14.04	0.41 (0.10-1.76)	0.233
Sexual partners						
0-3	120	87.59	159	55.79		
4-6	8	5.84	105	36.84	0.23 (0.06-0.89)	0.033*
7-9	9	6.57	21	7.37	4.14 (0.67-25.44)	0.126
Distance from the health facility						
Less a kilometer	57	41.61	63	22.11		
More than 1km but less than 5km	74	55.47	75	26.32	1.07 (0.45-2.57)	0.874
More than 5km	4	2.92	147	51.58	0.21 (0.04-1.08)	0.062
Ability to disclose status in case it is positive						
Yes	105	75.64	20	7.02		
No	32	23.36	265	92.98	0.29 (0.12-0.69)	0.006*
In your culture, a man is always;						
Right	43	31.39	212	74.39		
Wrong/somehow right	94	68.61	73	25.65	3.80 (1.46-9.88)	0.006*

A person to come in if the respondent is un able to pay bills						
Parents	60	43.80	74	25.96		
Brother	18	13.14	91	31.93	0.33 (0.10-1.06)	0.063
Sister	11	8.03	13	4.56	0.97 (0.16-6.03)	0.973
Wife	22	16.06	34	11.93	1.18 (0.30-4.61)	0.813
Friends	5	3.65	52	18.25	0.19 (0.03-1.26)	0.085
None	4	2.92	6	2.11	4.88 (0.27-89.72)	0.286
Others*6	17	12.41	15	5.26	1.27 (0.24-6.59)	0.777
Use of substance						
Yes	58	42.34	243	85.26		
No	79	57.66	42	14.74	1.03 (0.40-2.68)	0.944
Awareness about HIV testing services						
Yes	130	94.89	99	34.74		
No	7	5.11	186	65.25	0.93 (0.18-4.82)	0.929
Educated about HIV/AIDS						
Yes	124	90.51	85	29.82		
No	13	9.49	200	70.18	0.14 (0.04-0.49)	0.002*
A place to go when the respondent wants to test for HIV/AIDS						
Health facility	119	86.86	89	31.23		
Don't know	8	5.84	189	66.32	1.48 (0.31-7.09)	0.625
Wait for mass testing to take place	7	5.11	4	1.04	0.72 (0.10-5.29)	0.749
Others*2	3	2.19	3	1.05	0.88 (0.07-10.64)	0.921
Do you think HIV testing is Important?						
Yes	127	92.70	41	14.39		
No	10	7.30	244	85.61	0.08 (0.02-0.21)	0.000*

3.2 DISCUSSION

In this study, the level of uptake of the HIV testing services among the men was 32% which is far lower than the national standard of 92%[1]. This result is even extremely lower than (84%) of the similar study conducted in central Uganda[6]. This discrepancy could be due to unique study settings. The lowest level of uptake of the HIV testing services (32%) we report, is indeed a public health concern and a challenge to the UNAID fast-track target[7]. It is important to note, never the less, that restricted populations such as refugee camps are not defined as key populations in Uganda.

Our results show that men who were unemployed ($P=0.015$, AOR=0.17 (0.04-0.71), CI=95%) were 0.17 times less likely to uptake HIV testing services. This finding is similar to previous reports from in other African countries[8, 9]. Unemployment is a potential risk for HIV infection for, most people in that status are vulnerable to and tend to engage in risky behaviors either for survival or consolation and comfort.

A previous study in central Uganda indicated that Catholics were more likely to have ever tested for HIV in their life time[6]. We report that Anglican Christians were less likely to accept HIV testing compared to their counterparts. In fact, our finding is in phase with the previous reports highlighted above. Different religions defer in doctrines which influence practices and life choices of the respective members.

Our results show that men who had 4-6 sexual partner ($P=0.033$, AOR=0.23 (0.06-0.89), CI=95%) were 0.23 times less likely to uptake HIV testing than their counterparts. Having multiple sexual partners has been considered as a more characteristic of risky sexual behaviour which put people at risk of contracting sexually transmitted diseases. Previous related studies reported that men who exhibit risky sexual behaviour were more likely to get tested for HIV[10, 11]. This was probably because men who have risky sexual behaviour are apprehensive about their HIV test result and are more curious to know their HIV status compared to men without sexual risky behaviour. However, this was not the case with the current study probably because the setting has restricted movements in and out of the camp and most of men in the camp perceived having multiple sexual partners as normal.

Men who were unable to disclose their HIV status when positive ($P=0.006$, AOR=0.29 (0.12-0.69), CI=95%) were 0.29 times less likely to uptake the HIV testing services. Our finding agrees with previous reports[9]. It is established that fear of HIV related stigma is critical barrier to HIV testing. Evidence has shown that there is need to set up strategies that enhance disclosure of HIV status to partners at both individual level and facility level[8].

This study reports that men who thought that the man is always wrong ($P=0.006$, AOR=0.29 (0.12-0.69), CI=95%) were 3.80 times more likely to uptake HIV testing services than men who thought that a man is always right. Men who perceived that they are not always right perhaps easily accepted the advice from the health workers which increased their likelihood of up taking HIV testing services. This is in fact reported for the first time.

We report that that men who had never been educated on HIV ($P=0.002$, AOR=0.14 (0.04-0.49), CI=95%) were 0.14 less likely to uptake HIV testing services. Previous studies among youths in Sub-Saharan Africa reported that those with comprehensive knowledge of HIV were more likely to be tested for HIV[10, 11]. Being knowledgeable and knowing the benefits of treatment enhances uptake of HIV testing services. In addition, it minimizes misconceptions about HIV which has been reported to be possibly having a negative effect on HIV testing and counseling.

Men who never thought that HIV testing important ($P=0.000$, AOD=0.08 (0.02-0.21), CI=95%) were 0.08 times less likely to uptake HIV services. This finding is in phase with previous reports[10, 11]. This could be linked to low perception of risk as most the respondents perceived that HIV infection is basically for Ugandans and therefore, it cannot affect them. Therefore, putting more emphasis in risk communication within the refugee settlement could improve the uptake of HIV testing services among men in the settlement.

CONCLUSION

The level of uptake of HIV testing services among refugee men in Kiryandongo refugee settlement camp is significantly lower than the national mark ever recorded in Uganda. Social – demographic and cultural as well awareness factors are attributed to the level of uptake. Targeted testing strategies and sensitization are critical to address factors that are negatively associated with the uptake.

ETHICAL CONSIDERATIONS

The study was reviewed and approved by Uganda Christian University Research Ethics Committee, REC Number: UG-REC-026

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