Navigating Challenges and Strategies: Men's Engagement in HIV Prevention and Care

Linkage to HIV care and early retention in HIV care among men in the ‘universal test-and treat’ era in a high HIV-burdened district, KwaZulu-Natal, South Africa

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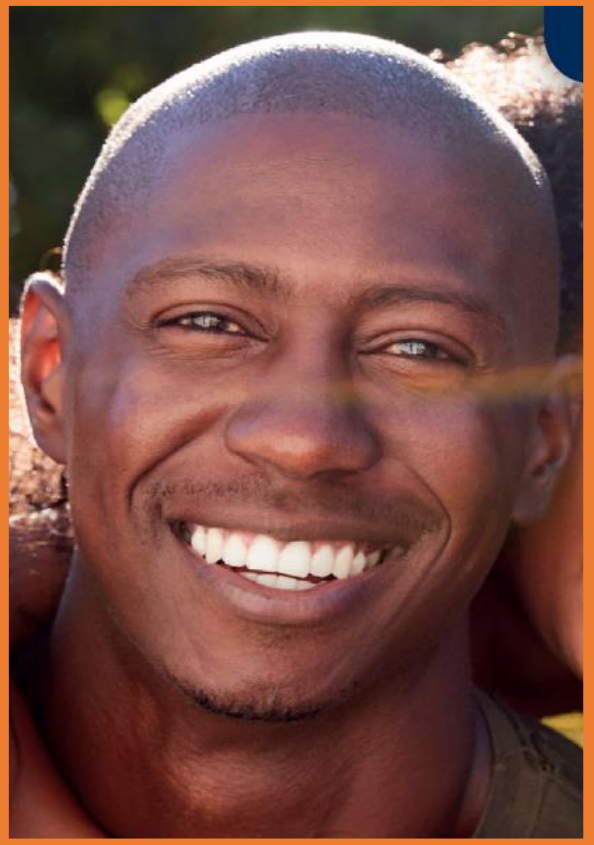

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Introduction

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Linkage to HIV care and early retention in HIV care among men in the 'universal test-and-treat' era in a high HIV-burdened district, KwaZulu-Natal, South Africa

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Abstract

Introduction Despite the numerous efforts and initiatives, males with HIV are still less likely than women to receive HIV treatment. Across Sub-Saharan Africa, men are tested, linked, and retained in HIV care at lower rates than women, and South Africa is no exception. This is despite the introduction of the universal test-and-treat (UTT) prevention strategy anticipated to improve the uptake of HIV services. The aim of this study was to investigate linkage to and retention in care rates of an HIV-positive cohort of men in a high HIV prevalence rural district in KwaZulu-Natal province, South Africa.

Methods From January 2018 to July 2019, we conducted an observational cohort study in 18 primary health care institutions in the uThukela district. Patient-level survey and clinical data were collected at baseline, 4-months and 12-months, using isiZulu and English REDCap-based questionnaires. We verified data through TIER.Net, Rapid mortality survey (RMS), and the National Health Laboratory Service (NHLS) databases. Data were analyzed using STATA version 15.1, with confidence intervals and *p*-value of ≤0.05 considered statistically significant.

Results The study sample consisted of 343 male participants diagnosed with HIV and who reside in uThukela District. The median age was 33 years (interquartile range (IQR): 29–40), and more than half (56%; *n* = 193) were aged 18–34 years. Almost all participants (99.7%; *n* = 342) were Black African, with 84.5% (*n* = 290) being in a romantic relationship. The majority of participants (85%; *n* = 292) were linked to care within three months of follow-up. Short-term retention in care (≤ 12 months) was 46% (*n* = 132) among men who were linked to care within three months.

Conclusion While the implementation of the UTT strategy has had positive influence on improving linkage to care, men's access of HIV treatment remains inconsistent and may require additional innovative strategies.

Keywords HIV treatment, Men, Linkage to care, Retention in care, South Africa

- Despite progress, significant gender inequities exist in HIV treatment in sub-Saharan Africa (SSA).
- Men living with HIV are less likely to access care and have higher treatment disruptions.
- Understanding barriers to HIV treatment among men is crucial for addressing this issue.

Universal Test-and-Treat (UTT) Strategy

- Introduction of UTT:
  - Ensures immediate ART initiation for all HIV-diagnosed individuals.
  - Implemented in South Africa since 2016.
  - Aims to improve linkage and retention in care.

Aim

- To investigate linkage to and retention in care rates of an HIV-diagnosed cohort of men in a high HIV prevalence rural district in KwaZulu-Natal province, South Africa

Methods

Study setting

- This study was conducted in the uThukela District Municipality in KwaZulu-Natal.
- The district is comprised of three local municipalities (LMs) - Alfred Duma LM, Inkosi Langalibalele LM and Okhahlamba LM (Fig 1)
- The population of uThukela district is predominantly poor, rural and utilizing public health services.
- HIV prevalence is high in the district at 22% among men aged 15–49 years, with individuals required to travel long distances to access basic health care services

Map of UThukela District, KwaZulu-Natal

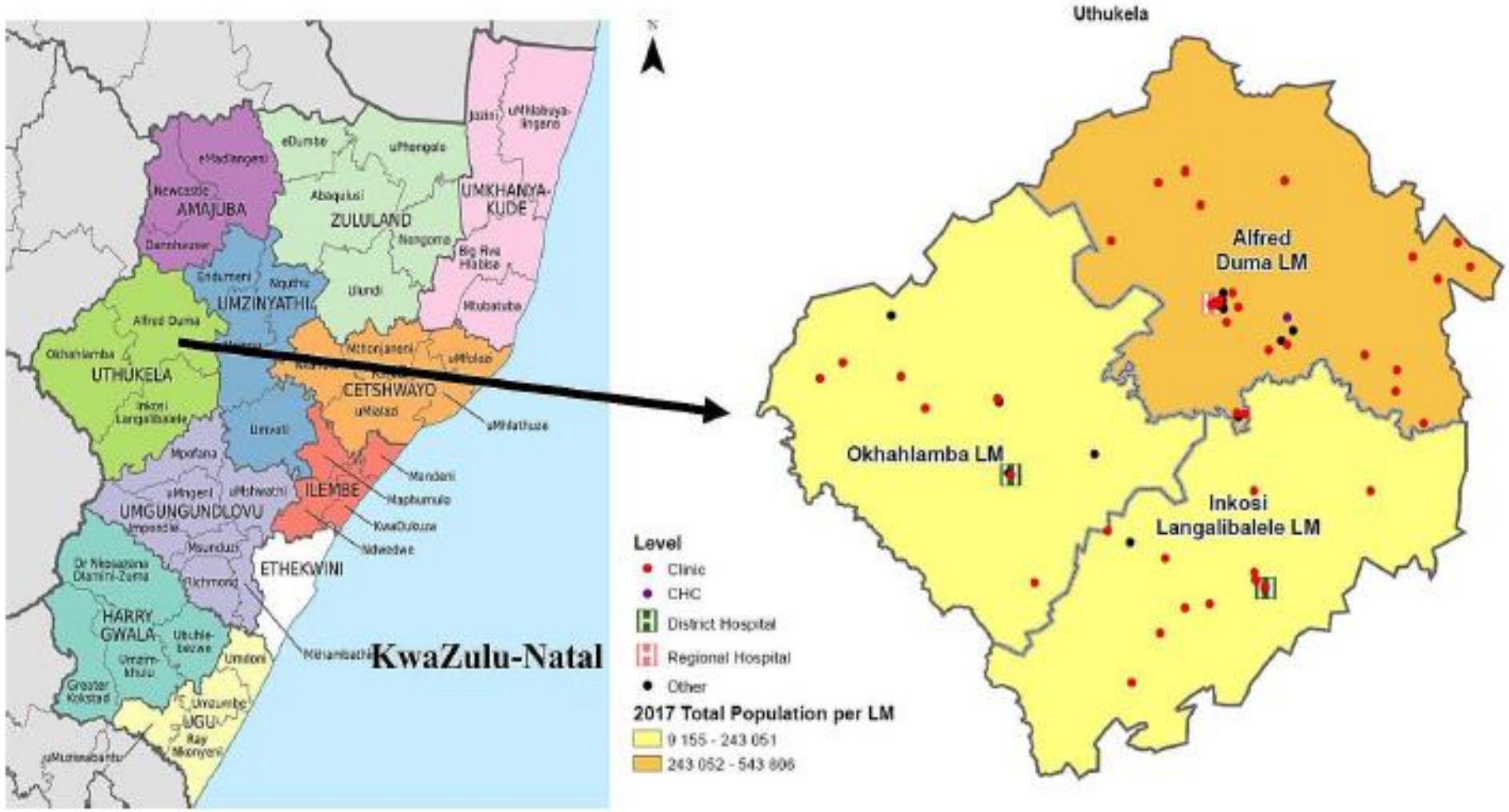


Fig. 1 Map of uThukela District, KwaZulu-Natal, 2017, showing the population density for the three local municipalities
LM-local municipality; CHC-Community Health Centre

Methods

Study design & sampling

- An observational cohort design was undertaken over 21 months from December 2017 to August 2019, in 18 healthcare facilities in uThukela district (3 gateway clinics, 8 PHC clinics, 2 community day centers, 3 mobile clinics, 1 community health center (CHC), and 1 outpatient department within a hospital)
- At the time of our data collection, the uThukela district did not have published data on linkage to and retention in care rates among men during the UTT era.
- However, a linkage to care rate of 62% within the first year of HIV diagnosis has been reported from KwaZulu-Natal province, South Africa
- Therefore, we hypothesized a 10% increase in linkage to care rate due to the possible impact of the UTT strategy
- We adopted a convenience sampling of study participants until we reached the targeted number of participants.

Methods

Inclusion criteria:

- Aged 18 years or older;
- Intending to take an HIV test in one of the participating health care facilities during the study period;
- Access to a cell phone
- Willingness to provide contact details.

Definitions

- We defined linkage to HIV care in this analysis as the successful completion of a first medical clinic visit after HIV diagnosis within three months after HIV-positive diagnosis, and have been initiated onto ART as verified through TIER.Net record.
- Retention in care was defined as the proportion of HIV-positive participants who were linked on ART, remained in contact with HIV care services and are active on ART, and were not reported as dead or having interrupted treatment during the last 12 months post HIV diagnosis.

Data collection and analysis

- Data were collected using isiZulu and English REDCap based questionnaires
- Demographic data and potential barriers and enablers of linkage to care information were collected at recruitment and during the 4-month follow-up visit.
- Enrolled participants was assessed four months after the date of enrolment via a follow-up interview.
- At 12 months, retention of the reactive participants was reviewed using data from the NHLS database and the rapid mortality survey (RMS), which uses the participants' national ID number and contains information on registered deaths by Home Affairs
- Each questionnaire was completed within 45–60 min, depending on whether it was self-administered or completed with assistance.
- Data were analyzed using STATA 14.2

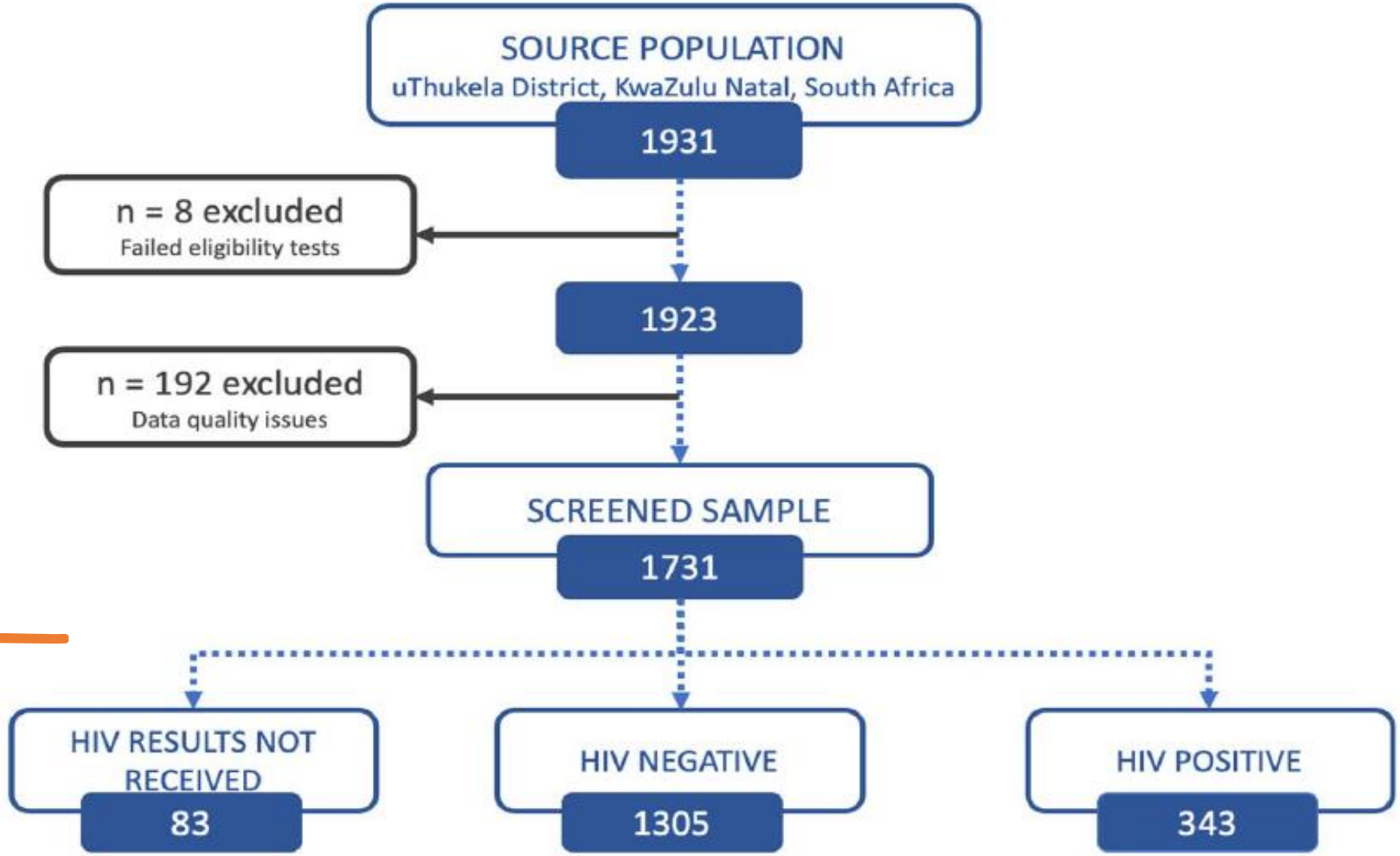
Ethics considerations

- Approvals to conduct this study were obtained from the SAMRC ethics committee
- Additional permissions to conduct this study were obtained from the KZN Provincial Department of Health and the uThukela district authorities.
- All participants signed an informed consent form.

Results

- A total of 1731 male participants were recruited after the screening of 1931 consenting participants approached for inclusion eligibility in the study
- Small proportion was excluded because they failed eligibility checks (0.4%; *n* = 8) and others had data quality issues (9.9%; *n* = 192) including enrolment ID duplicates, incomplete questionnaires, or no enrolment numbers
- Of those recruited via screening for HIV reactivity (*n* = 1731), a small proportion did not receive their test results (4.8%; *n* = 83), most were HIV negative (75.4%; *n* = 1305) and almost a quarter were HIV positive (19.8%; *n* = 343)
- The final study sample for this analysis consisted of 343 male participants who were residing in the uThukela District from December 2017 to June 2018
- The median age was 33 years (IQR: 29–40) and more than half (56%; *n* = 193) were aged 18–34 years.
- Almost all participants (99.7%; *n* = 342) were Black African, with the majority (98.0%; *n* = 336) being SA citizens.
- More than half (60.2%; *n* = 204) had completed a secondary level of education, 5.6% (*n* = 19) had completed a primary level of education, and 2.4% (*n* = 8) had no education at all

Results



Consort diagram detailing the recruitment of the male participants into the Linkage to Care study in uThukela district, 2018

Results – Linkage to HIV Care

Table 2 Demographic characteristics of participants disaggregated by linkage to HIV care within three months of follow-up, uThukela District, KwaZulu-Natal, 2019

Variable	Total (*N* = 343)			Not linked in care (*N* = 51)			Linked in care (*N* = 292)				
	n	%	95% CI	N	%	95% CI	n	%	95% CI	F-value	*p*-value
Nationality											
South African citizen	336	98.0	95.6–99.1	51	15.2	11.4–20.0	285	84.8	80.9–88.6	0.5	0.58
Other SADC	6	1.7	0.7–4.6	0	0	-	6	100	-		
Other African	1	0.3	0.0-2.5	0	0	-	1	100	-		
Facility type											
Clinics	235	68.5	56.7–78.3	46	19.6	14.7–25.6	189	80.4	74.4–85.3	1.5	***<0.01***
Gateway	64	18.7	12.7–26.7	5	7.8	4.5–13.2	59	92.2	86.8–95.5		
Hospital	38	11.1	4.6–24.2	0	0	-	38	100	-		
Mobile clinic	6	1.7	0.2–13.4	0	0	-	6	100	-		
Ethnicity											
Black African	342	99.7	97.6–99.9	51	14.9	11.2–19.6	291	85.1	80.4–88.8	0.6	0.73
Colored/Mixed ancestry	1	0.3	0.0-2.4	0	0	-	1	100	-		
Education level											
No education	8	2.4	0.9–5.8	1	12.5	1.6–55.3	7	87.5	44.7–98.4	0.5	0.61
Primary education	19	5.6	3.6–8.7	2	10.5	2.4–35.8	17	89.5	64.2–97.6		
Secondary education	204	60.2	53.3–66.6	34	16.7	12.6–21.7	170	83.3	78.3–87.4		
Post matriculation	108	31.9	25.2–39.4	13	12.0	5.9–23.1	95	88.0	76.9–94.1		
Age, median (IQR)	343	33	29–40	51	33	29–38	292	33	29–40	-0.4	0.68 *
Age categories											
18–24 years	32	9.3	6.2–13.9	6	18.8	17.1–36.4	26	81.3	67.5–90.0	0.9	0.46
25–29 years	69	20.1	14.6–27.0	9	13.0	6.1–23.3	60	87.0	75.0-93.7		
30–34 years	92	26.8	20.9–33.7	17	18.5	11.1–27.9	75	81.5	72.7–88.0		
35–49 years	126	36.7	29.6–44.5	17	13.5	8.1–20.7	109	86.5	81.1–90.5		
50 + years	24	7.0	3.5–13.4	2	8.3	1.0–27.0	22	91.7	71.3–98.0		
Marital status											
Married (living together)	32	9.3	5.7–15.3	3	9.4	2.7–27.5	29	90.6	72.5–97.3	0.7	0.56
Married (living separately)	6	1.7	0.7–3.9	1	16.7	4.4–46.4	5	83.3	53.6–95.6		
Cohabiting	69	20.1	16.5–25.5	12	17.4	8.8–31.5	57	82.6	68.5–91.2		
Dating	189	55.1	51.2–62.1	30	15.9	10.9–24.1	159	84.1	75.9–89.9		
Single	47	13.7	7.9–15.0	5	10.6	3.5–23.1	42	89.4	76.9–96.5		

p-value of ≤ 0.05 was considered statistically significant

p-values derived using Mann Whitney U-test for continuous data

p-values derived using Pearson's Chi-squared test considered the one stage cluster design

proportions (%) for the columns reported as n/N, the associated test statistic and the associated 95% CI

IQR– Interquartile range; CI– Confidence Interval

* z value reported.

Results – Retention to HIV Care

Table 3 Demographic characteristics of participants disaggregated by whether they were retained in care after 12 months of follow-up, uThukela District, KwaZulu-Natal, 2019

Variable	Total ($n=292$)			Retained in care ($n=132$)			Not retained in care ($n=160$)				
	N	%	95% CI	N	%	95% CI	N	%	95% CI	F-value	*p*-value[+]
Nationality											
South African citizen	285	97.6	94.8–98.9	130	45.6	32.9–58.9	155	54.4	41.1–67.1	1.2	0.56
Other SADC	6	2.1	0.8–5.4	2	33.3	8.3–73.5	4	66.7	26.5–91.7		
Other African	1	0.3	0.0-2.9	0	0	-	1	100	-		
Facility type											
Clinic	189	64.7	52.4–75.4	80	42.3	27.5–58.7	109	57.7	41.3–72.5	1.2	**0.04**
Gateway	59	20.2	14.0-28.2	24	40.7	15.5–72.0	35	59.3	45.7–71.9		
Hospital	38	13.0	5.5–27.7	25	65.8	50.8–78.2	13	34.2	21.9–49.2		
Mobile clinic	6	2.1	0.2–15.4	3	50.0	50.0–50.0	3	50.0	50.0–50.0		
Education level											
No education	7	2.4	0.9–6.3	4	57.1	30.6–80.2	3	42.9	19.9–69.4	1.0	0.40
Primary education	17	5.9	3.6–9.5	6	35.3	14.1–64.6	11	64.7	35.5–86.0		
Secondary education	170	58.8	51.0-66.2	73	42.9	29.0-58.1	97	57.1	41.9–71.0		
Tertiary	95	32.9	25.8–40.8	48	50.5	37.4–63.6	47	49.5	36.4–62.7		
Age in years	292	33.0	29.0–40.0	132	34.0	28.0–41.0	160	33.0	29–40	0.1	0.92 *
Age categories											
18–24 years	26	8.9	5.9–12.1	13	50.0	24.3–75.7	13	50.0	24.3–75.7	0.1	0.94
25–29 years	60	20.5	16.3–25.1	27	45.0	28.3–63.0	33	55.0	37.0-71.7		
30–34 years	75	25.7	21.7–31.2	33	44.0	26.3–63.4	42	56.0	36.6–73.7		
35–49 years	109	37.3	32.6–43.1	48	44.0	30.0-59.5	61	56.0	40.5–70.3		
50 + years	22	7.5	4.5–10.1	11	50.0	30.4–69.6	11	50.0	30.4–69.6		
Marital status											
Married (living together)	29	10.2	6.5–15.6	13	44.8	20.0-72.6	16	55.2	27.4–80.1	0.9	0.44
Married (living separately)	5	1.8	0.7–4.6	4	80.0	39.1–96.2	1	20.0	3.9–61.0		
Cohabiting	57	20.1	14.2–27.6	29	50.9	34.4–67.2	28	49.1	32.8–65.6		
Dating	159	56.0	50.5–61.4	92	57.9	44.2–70.2	67	42.1	29.8–55.6		
Single	34	12.0	7.2–19.3	18	52.9	33.9–71.2	16	47.1	27.8–66.2		

p-value of ≤ 0.05 was considered statistically significant

p-values derived using Mann Whitney U-test for continuous data

p-values derived using Pearson's Chi-squared test considered the one stage cluster design

proportions (%) for the columns reported as n/N, the associated test statistic and the associated 95% CI

IQR– Interquartile range; CI– Confidence Interval

* z value reported

Discussion

- Our results showed that linkage to care among those who were diagnosed with HIV was high, with 85% initiating HIV treatment within 3 months of knowing their HIV status
- Retention in HIV care after 12 months post diagnosis was low, at 45%
- The high rate of linkage to care in our setting may be indicative of the success of the UTT strategy implementation. This is an important finding because it demonstrates the UTT programme's success and effectiveness in engaging men into HIV treatment.
- More efforts are needed to improve retention in care among men, to improve health outcomes and curb the spread of HIV.
- Therefore, identifying men who are more likely to experience treatment interruptions may provide imperative prospects for designing tailored service delivery interventions which would be more responsive to their needs.

Conclusions

- Our findings illustrate that the adoption and implementation of the UTT strategy has had positive benefits towards improving linkage to care among men in the uThukela district.
- However, retention in care remains a concern given the low rates of men retained within 12 months of follow-up.

Recommendations

- These findings suggest the need for additional and targeted interventions to improve retention among men to address barriers deterring men from consistently accessing HIV treatment in healthcare facilities.
- Community based ART initiation services and mobile clinic services are effective in improving access to HIV treatment in sub-Saharan Africa, as it address numerous distinctive barriers to accessing HIV services in clinic settings. Therefore, scaling of these strategies is critical.
- Gender-transformative interventions such as “One Man Can”, Decentralized Medication Delivery, the MINA and Coach Mpilo campaigns, which provide men with information and support that help them to get tested for HIV, to initiate and remain in care could be scaled up.
- More research is needed to understand barriers to care linkage and retention for men.