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Background

HIV/AIDS is recognized to affect both the life expectancy and the quality of life of individuals (Wachtel, 1992; Globe, 1999), evidence from clinical trials has proved that antiretroviral therapy (ART) is an effective intervention for extending the life of HIV patients while reducing morbidity outcomes (Valdez, 2001).

Health Related Quality of Life (HRQoL) assesses people's perceptions of their health status i.e., a combination of statements about multiple aspects of the individual's well being including disease as symptoms, physical functioning, work, social activities, and mental health. However, very few examples of this type of assessment are found in resource poor settings and none is related to the provision of antiretroviral therapy (ART) for people living with HIV/AIDS in Uganda.

We assessed the performance of the Luganda version of the Medical Outcomes Study HIV Health Survey (MOS-HIV) in HIV infected individuals in Entebbe, Uganda.

Methods

We recruited a subgroup of study participants (≥ 18 years) of the DART trial (an open-label randomised trial evaluating different ART management strategies), at Entebbe site before they started taking ART (DART group (DG); $n=276$), and HIV infected individuals that were ART naive (Entebbe Cohort Group (ECG); $n= 159$). Participants were administered a socio-economic questionnaire and the Luganda version of the MOS-HIV, a 35-item questionnaire that assesses the functional status and well being of HIV infected individuals. The questionnaire was administered face-to-face in the local language (Luganda). The degree to which responses were internally consistent was evaluated.

Results

The majority of the participants from both groups were females, with 64% in the DART group and 76% in Entebbe Cohort Group; this difference was statistically significant at conventional levels (Pearson $\chi^2(1)= 6.9040$; $Pr = 0.009$). The mean age of the participants was 36.5 and 36.7 for the DART and Entebbe groups; the age distribution was comparable across groups. Only one participant from DART did not know her age. The level of education for Entebbe Cohort participants was slightly lower than among those in the DART groups. Although the difference was not significant at the 5% level (Fisher's exact test; 0.262). The groups differed with respect to marital status; DART participants were more likely to be married than the Entebbe Cohort participants, and the Entebbe participants were more likely to be widowed than those in the DART. This difference was statistically significant at 1% level (Pearson $\chi^2(4) = 60.9160$ $Pr = 0.000$).

Both groups reported selling perishable goods in the market as their main economic activity. DART participants reported a higher family expenditure, 155,310 Ugandan Shillings (US\$85) per month, than Entebbe Cohort participants, which reported an average of 117,927 Ugandan Shillings i.e., US\$64, per month. However, there was no a statistical difference between the two groups.

We observed a 100% response and good acceptability of the MOS-HIV. Internal consistency reliability coefficients for multi-item scales were > 0.70 in the two groups except for role functioning (0.36), social functioning (0.69) and mental health (0.68) in the DG and for vitality (0.65) in the Entebbe Cohort Group (See Table 2). Item-internal consistency and discriminant validity were satisfactory, ranging from 0.40-0.87 for those dimensions that were found reliable. Factor analysis revealed that physical health (PH) and mental health (MH) components together accounted for 57% of the variance (See Graph 1). Overall PH had the highest factor loadings from vitality, pain and physical subscales and for Overall MH the highest factor loading was quality of life (See Table 3).

Table 1 Socio-economic characteristics at baseline

	DART Participants (%)	Entebbe Cohort Participants (%)	Difference between groups
Selling perishable goods as the main type of occupation (%)	57 (21)	45 (28)	
Family expenditure Mean (IQR)	N = 173 155,310 (40,000 - 180,000)	N = 116 117,927 (40,000 - 150,000)	N = 289 -47,912.39*
Per capita family expenditure per month	39,823	35,736	
Personal income last month Mean (IQR)	N = 140 150,629 (40,000 - 157,000)	N = 105 107,438 (20,000 - 120,000)	N = 245 -43,190.48**
Paid job twelve months ago	116 (42)	114 (71)	
Personal income twelve months ago Mean (IQR)	N = 108 117,245 (40,000 - 150,000)	N = 98 106,759 (30,000 - 120,000)	N = 206 -10,486.19***
Reason for not having a job twelvemonths ago			
<i>Ill health</i>	20 (12.5)	12 (26)	
<i>Lack of employment</i>	106 (66)	25 (54)	

* $p = 0.272$ i.e., results not significant at 10% level. Tests results based on logarithmic transformation of the variable
 ** $p = 0.003$ i.e., results were significant at 5% level. Tests results based on logarithmic transformation of the variable
 *** $p = 0.056$ i.e., results not significant at 5% but significant at 10%. Tests results based on logarithmic transformation of the variable

Table 2 MOS-HIV reliability results

Scale (number of items per scale)	Mean	Median	SD	Item internal consistency
General Health perception (5)				
DART	34.7	30.0	20.9	0.75
Entebbe Cohort	34.1	25.0	34.4	0.88
Pain (2)				
DART	37.9	30.0	20.9	0.69
Entebbe Cohort	47.9	55.5	33.4	0.76
Physical functioning (6)				
DART	57.1	58.3	26.4	0.81
Entebbe Cohort	73.9	75.0	25.5	0.78
Social functioning (2)				
DART	65.7	60.0	33.6	-
Entebbe Cohort	73.9	75.0	25.5	-
Mental health (1)				
DART	57.8	60.0	17.4	0.68
Entebbe Cohort	57.9	56.0	23.4	0.79
Vitality (5)				
DART	47.4	50.0	19.4	0.76
Entebbe Cohort	59.1	55.0	23.4	0.65
Health distress (4)				
DART	67.0	65.0	22.2	0.82
Entebbe Cohort	79.2	100	29.0	0.96
Cognitive functioning (4)				
DART	58.3	55	23.2	0.84
Entebbe Cohort	69.0	70	27.4	0.81
Role functioning				
DART	32.8	25	36.7	0.36
Entebbe Cohort	46.1	50	47.6	0.88
Overall quality of life (1)				
DART	58.3	55	23.2	-
Entebbe Cohort	69.0	70	27.4	-
Health transition (1)				
DART	58.3	55	23.2	-
Entebbe Cohort	69.0	70	27.4	-
Physical Health Summary Score (PHSS)	50	-	10.3	Range (4.03 - 98.6)
Mental Health Summary Score (MHSS)	50	-	9.8	(19.41 - 79.85)

Graph 1 Eigenvalues

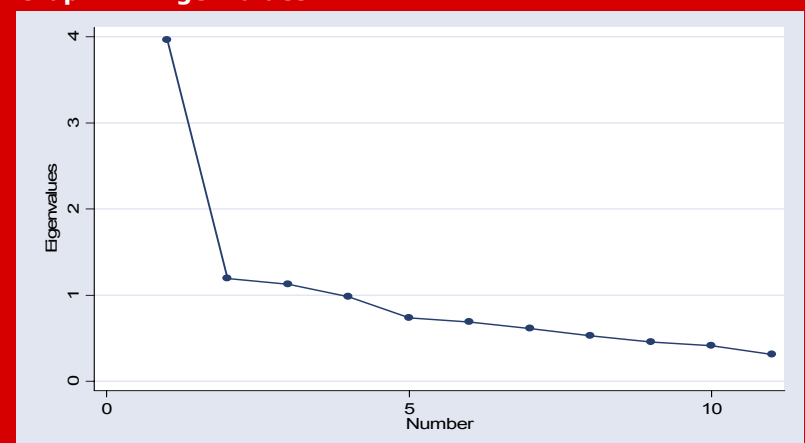


Table 3 Factor structure for the two principal components

Subscale ¹	Factor 1	Factor 2
	Physical Health	Mental Health
PF_Z	0.36194	0.28005
GH_Z	0.31198	-0.45426
PN_Z	0.37749	-0.23047
RP_Z	0.35908	0.14897
SF_Z	0.28595	0.23555
MH_Z	0.27818	-0.24434
VT_Z	0.40619	0.12066
HD_Z	0.34902	-0.04832
CF_Z	0.23059	0.11669
QL_Z	0.03101	0.62213
HT_Z	0.01181	-0.32737

¹ PF =Physical functioning; GH=General life; PN= Pain; RP= Role Functioning; SF=Social Functioning; MH=Mental Health; VT=Vitality; HD=Health distress; CF=cognitive functioning; QL=Quality of life and HT=Health Transition.

Conclusions:

Our results demonstrate the feasibility of assessing HRQoL in HIV infected individuals using the Luganda version of the MOS-HIV. Further work using repeated measure designs is underway to identify the sources of variability of responses in those dimensions that were found unreliable in this study.