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Impact of patient-selected care buddies on adherence to HIV care, disease progression and conduct of daily life among pre-antiretroviral HIV-infected patients in Rakai, Uganda: a randomized controlled trial

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Abstract

Background—Data are limited on effects of household or community support persons ("care buddies") on enrolment into and adherence to pre-antiretroviral HIV care. We assessed the impact of care buddies on adherence to HIV clinic appointments, HIV progression and conduct of daily life among pre-ART HIV-infected individuals in Rakai, Uganda.

Methods—1209 HIV infected pre-ART patients aged ≥15 years were randomized to standard of care (SOC) (n = 604) or patient-selected care buddy (PSCB) (n= 605) and followed at 6 and 12 months. Outcomes were adherence to clinic visits; HIV disease progression and self-reported conduct of daily life. Incidence and prevalence rate ratios and 95% confidence intervals (95%CI) were used to assess outcomes in the intent-to-treat and as-treated analyses.

Results—Baseline characteristics were comparable. In the ITT analysis both arms were comparable with respect to adherence to CD4 monitoring visits (adjPRR 0.98, 95%CI 0.93-1.04, p=0.529) and HIV progression (adjPRR=1.00, 95%CI 0.77-1.31, p=0.946). Good conduct of daily life was significantly higher in the PSCB than the SOC arm (adjPRR 1.08, 95%CI 1.03-1.13,

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p=0.001). More men (61%) compared to women (30%) selected spouses/partners as buddies (p<0.0001.) 22% of PSCB arm participants discontinued use of buddies.

Conclusion—In pre-ART persons, having care buddies improved the conduct of daily life of the HIV infected patients but had no effect on HIV disease progression and only limited effect on clinic appointment adherence.

Keywords

HIV; pre-ART; patient-selected care buddy; Uganda; randomized controlled trial

INTRODUCTION

Improving the outcomes of HIV/AIDS treatment programs in resource-limited settings requires successful and timely linkage of diagnosed HIV infected patients to pre-antiretroviral therapy (pre-ART) care and retention in pre-ART care until ART initiation[1]. In line with the Uganda Ministry of Health HIV treatment guidelines, pre-ART patients are provided with services including cotrimoxazole for the prophylaxis of opportunistic infections, a basic care package (health and nutritional education, counseling on living with HIV, insecticide-impregnated bed nets for malaria prevention and clean water vessels with hypochlorite disinfectant for prevention of diarrheal diseases), psychosocial support and laboratory monitoring which have been shown to improve reported quality of life, reduce mortality and may delay progression to ART eligibility[2-3].

It is critical that patients fully utilize these care services if these benefits are to be realized, but discontinuation from pre-ART care is particularly high[1, 4-12](e.g. 70% of HIV positive patients did not remain in care within one year of enrolling[4]) and can result in increased morbidity, mortality and faster disease progression[4,7-8,13]. Non-adherence to pre-ART HIV care has also been associated with detectable viremia and an AIDS-defining CD4 count[14]. Many studies have assessed interventions that support adherence to ART[15-18], but there is limited assessment of interventions to support pre-ART patients. Interventions have included the use of patient-nominated treatment supporters [15-16, 19], a strategy acceptable to patients and cost-effective to the health sector[20]. In the Nigeria randomized study by Taiwo et al (2010), the intervention group of patients with self-selected ART treatment partners achieved significantly higher virologic suppression than the control group, although benefits did not persist beyond six months[16].

Interventions that delay ART eligibility can reduce expenditures on costly ART which is especially important, given the decline in global funding for ART [21-23]. We therefore conducted a randomized controlled trial to assess the impact of trained patient-selected care buddies (intervention) on adherence to care, HIV disease progression and conduct of daily life among pre-ART HIV-infected patients in Rakai, Uganda.

METHODS

Study setting

Participants were recruited from 17 community-based Rakai Health Sciences Program (RHSP) HIV/AIDS clinics located in Rakai District, Uganda. The clinics served about 6000 HIV+ patients, about half of whom were receiving pre-ART care including regular CD4 screening to determine eligibility for ART and a basic care package. ART eligibility was based on Uganda Ministry of health (MOH) ART initiation guidelines. During the first fifteen months of this study (October 2010 to January 2012), ART was initiated at a CD4 count of <250cells/ul, then changed to <350 cells/ul under new MoH guidelines (February 2012). In the first time period, CD4 cell count monitoring in pre-ART patients was conducted every 3 months if the most recent CD4 count was 251-350 cells/ul, and every 6 months if the most recent CD4 count was ≥350 cells /ul. After the CD4 criterion was changed to <350 cells/ul, monitoring was conducted every 6 months for all pre-ART patients. All HIV-related services were funded by the President's Emergency Plan for AIDS Relief (PEPFAR) and were provided free of charge to the patient.

Patient eligibility for enrolment into study

Study eligibility criteria included age ≥15 years, receiving HIV care from RHSP HIV clinics, the ability and willingness to acquire a "care buddy" and disclose HIV sero-status to that person, and written consent to be randomized to the "Patient-selected care buddy" (intervention group) or the standard of care (non-intervention group).

Procedures

Sample size calculation—The statistical software PASS 2008 was used for sample size and power estimation, assuming a power of 80% at a two-sided α =0.05 level of significance to detect various group differences. Calculation was based on baseline CD4 count stratification of 251-350 and 351+.For the 251-350 CD4 group, assuming the proportion becoming eligible for ART in the standard of care arm, Pc=30%, and proportion becoming eligible for ART in the patient-selected care buddy (PSCB) group Pi=15% over the 12 months of follow up, adjusting for a non-response or loss to follow up rate of 10%, and a design effect of 1.5, 200 patients were needed per group for this study. For the category of patients with CD4 351+ cells, assuming Pc=20% and Pi=10% over the 12 months, a sample size of 199 per group was required, adjusting for non-response rate or loss to follow up of 10% and a design effect of 1.5, this resulted in 332 patients per group; making a total of 532 per arm. A design effect was included because study participants were drawn from 17 HIV clinics.

Patient Screening and Randomization into study—Between October 2010 and August 2011, all ART-ineligible pre-ART HIV care patients attending RHSP HIV clinics were screened for study eligibility. Based on the most recently available CD4 count results, patients were stratified into groups of CD4 count 251-350 and CD4 count >350 cells/ul, so as to enable stratified block randomization to improve comparability of CD4 counts between arms at baseline. To ensure random allocation to study arm, we used varying block sizes of four (2-per arm) and six (3-per arm), in sealed opaque envelopes in batches of 12 for

distribution among the multiple enrollment clinics. Patients selected an envelope from a box of 12 envelopes without replacement for assignment of the study arm. The randomization blocks and numbers were generated by STATA statistical software.

Study intervention and standard of care arm

Standard of care (SOC): Patients enrolled for pre-ART care received general health education, clinical monitoring, CD4 testing monitoring and other clinically indicated laboratory investigations, treatment and prevention for opportunistic infections in addition to cotrimoxazole prophylaxis.

Patient-selected Care Buddy intervention (PSCB): In addition to standard of care services (as above), pre-ART patients randomized to the PSCB arm were asked to choose a care buddy aware of the patient's HIV status who resided in the same household or in close proximity to the patient. Patient- selected care buddies attended at least two HIV health education sessions providing information on HIV, the importance of HIV-infected persons adhering to clinic visits and to prescribed medications and care, and moral and social support required by persons living with HIV. The buddy training sessions lasted 2-3 hours, were didactic in nature, followed by group discussions, and were conducted by trained RHSP nurses. PSCBs were asked to remind participants to take their prophylactic medication and adhere to clinic appointments and were encouraged to keep track of the patient's clinic appointment dates. PSCBs received a soft drink and snack during training and a transport refund of up to ~$6 per session. Participants who lost a buddy in the first six months of follow-up were offered an opportunity to identify a replacement buddy. Pre-ART patients did not receive any additional reminders from RHSP clinic staff.

Data collection—Data collected included routine clinic and laboratory data, and interviewer-administered questionnaires which included the patient's socio-demographic characteristics (age, education, occupation and marital status, distance from the participant's home to the HIV clinic). Three study visits were conducted at baseline, six and twelve month follow-up, at locations close to the patients' clinics. At the two follow-up visits, data were also collected on retention of the initial care buddy for those in PSCB arm. Since individuals interact freely in their communities, we also assessed utilization of services of a trained buddy by patients in the SOC arm (this constituted cross-over). PSCB arm participants who had lost a buddy in the first six months were asked whether they were willing to replace the buddy. Other key data included self-reported adherence to clinic appointments and cotrimoxazole use, conduct of daily life (participants' perception of their general health, pain and ability to perform activities of daily living), sexual behaviors (sexual activity, condom use and number of sexual partners), and use of components of the basic care package. Outcome measures such as progression to ART eligibility and appointment adherence were obtained from the RHSP HIV clinic. Routine clinic data included date of clinic visit, number of cotrimoxazole pills dispensed, pill count and self report adherence to drugs, blood samples for CD4 testing, patient health status (e.g. opportunistic infections, WHO staging) and laboratory results. CD4 counts were assessed by flow cytometry using a FACSCalibur (Becton Dickinson, San Jose, CA, USA). The RHSP

Quality Control Department provided oversight of data quality issues throughout the data collection period. All data were entered in Microsoft Visual Fox Pro version 9 databases.

Ethical review—The protocol was reviewed and approved by the Makerere University Higher Degree Ethics and Research Committee, and the Uganda National council for Science and Technology All adults provided written informed consent and minors under 18 years provided assent with parent/guardian consent. The study was registered on clinical trials.gov under identifier number NCT02135003.

Statistical analysis—Statistical analyses used Stata Version 13 (Stata Corporation, 4905 Lakeway Drive, College Station, TX 77845, USA). We assessed the comparability between study arms at enrollment. The primary outcomes included adherence to clinic appointments, HIV disease progression as measured by progression to ART eligibility and ability to conduct activities of daily living. The primary assessment of outcomes used intent-to-treat analysis where all participants were analyzed by their allocated study arms. We also conducted an as-treated analysis where patients were analyzed according to the SOC or PSCB support they actually received.

Adherence to a clinic appointment was defined as attendance for a CD4 blood draw within one month of the scheduled date, for patients scheduled to return in three months or attendance within two months for patients scheduled to return in six months. Adherence for the entire 12 months follow up period was defined as “adherent” if a patient adhered to both the 0-6 month visit and 6-12 month clinic visit.

To determine adherence to HIV care appointments, CD4 blood draw were used instead of cotrimoxazole refill visits because patients could procure the drug in other locales, such as pharmacies and drug stores, and a missed refill visit did not necessarily indicate non-adherence. We estimated the proportion of participants who adhered to their CD4 appointments by study arm, and estimated unadjusted and adjusted prevalence risk ratios (adjPRR) of adherence to CD4 appointment using “modified” Poisson via generalized linear models with a family (Poisson) and link (log) with robust standard errors[24] and accounted for clustering of the clinics. Covariates adjusted for included baseline CD4 count, age, sex, occupation, marital status and travel distance to the clinic.

We determined HIV progression by the incidence of ART eligibility per 100 person years for the whole interval 0-12 months and intervals of 0-6, and 6-12 months. Incidence rate ratios of ART eligibility were estimated in PSCB relative to SOC arm using Poisson multivariable regression. Adjusted incident rate ratios and their 95% confidence intervals (95% CI) of ART eligibility were estimated including all covariates with p-values <0.2 in the unadjusted analyses and potential confounders.

At the start of the study, the MOH guidelines recommended that ART be initiated at a CD4 count below 250 cells/ul and this was the ART eligibility criterion until February 1st 2012, when the cut-off threshold was increased to <350 cells/ul. The ART eligibility outcome was assessed using the ART initiation guidelines current at the time of the follow-up visits.

Conduct of daily life was assessed by participants' perception of their general health and ability to conduct the activities of daily living (vigorous physical activities e.g. digging, splitting firewood; moderate physical activities like washing clothes; light physical activities like kneeling, bending or carrying light items and routine home activities like feeding oneself, dressing up and walking to the latrine/toilet), using a Likert scale (1:excellent, 2:very good, 3:good, 4:poor, and 5:very poor). The conduct of daily life was regarded as good if the general health and ability to conduct activities of daily life ranged from good to excellent, or poor if it was described as either poor or very poor. The proportions of participants reporting good conduct of daily life was estimated by study arm and unadjusted and adjusted prevalence risk ratios and 95% CI estimated using "modified" Poisson via generalized linear models with a family (Poisson) and link (log) with robust standard errors, adjusted for baseline CD4 count, age, sex, occupation and marital status.

RESULTS

Enrolment characteristics—Figure 1 shows the study CONSORT/ trial profile[25]. A total of 1219 pre-ART patients were screened, of whom 1209 (99.1%) met study eligibility criteria, provided written consent/ assent and were randomized to the PSCB arm (n=605) and SOC arm (n=604). Ten patients were ineligible because they were unwilling to disclose their HIV status or unable to identify a buddy. Table 1 shows participant baseline characteristics which were comparable between study arms. In the intervention arm, selected buddies were mainly spouses/partners or children; a significantly higher proportion of men (61%) compared to women (30%) selected their spouses/partners as buddies (p<0.001.)

Participant retention—At 6 months, retention in the PSCB arm was 80.3% (486/605), similar to the SOC arm 77.8% (470/604, p=0.283). Retention at 12 months was 81.5% (493/605) in the PSCB arm and 79.3% (479/604) in the SOC arm (p=0.392). Three participants (1 in SOC and 2 in the PSCB arm) did not have any follow-up information.

Crossovers—Twenty two percent of participants (134/605) in the PSCB arm lost a trained buddy without replacement during the 12 months, whereas 10.1% (61/604) of patients in the SOC arm utilized services of trained buddies (p<0.001). Adherence to having a buddy in either arm was ascertained through self-report (questionnaire).

Exposure to buddies—Participants were in touch with their buddies through physical or phone contact. Adherence to having a buddy in either arm was ascertained through self-report (questionnaire). Among participants in the PSCB arm, 71% reported daily contact with their buddy, while 10% reported occasional and 19% rare contact.

Table 2 shows the Prevalence risk ratios of i) adherence to clinic appointments and ii) Conduct of daily life for both ITT and AT analyses.

Adherence to CD4 monitoring appointments—In the ITT analysis, adherence to appointments for CD4 blood draws did not differ significantly between study arms during the 0-6 months follow up (adjPRR=1.01, 95% CI: 0.98-1.05.p=0.443); in the 6-12 months interval (adjPRR= 0.98, 95% CI: 0.94-1.03,p=0.510), and overall 0-12 months interval (adjPRR= 0.98, 95% CI: 0.93-1.04,p=0.529).

However, in the AT analysis, adherence to scheduled appointments was significantly greater in the PSCB arm compared to the SOC arm in the first six months follow-up (adj PRR=1.10, 95% CI: 1.06-1.14, p<0.001), in the 6-12 month follow-up (adj PRR= 1.11, 95% CI: 1.07-1.15,p<0.001), and in the overall (0-12 months) follow-up period (adjPRR=1.06, 95% CI: 1.00-1.12, p=0.041).

HIV disease progression—Tables 3 shows the incidence of ART eligibility by study group and follow up-interval for the ITT analysis.

In the intent to treat (ITT) analysis, patients in the PSCB arm were less likely to have CD4 decline to ART eligibility during the first six months, but this difference was not statistically significant. (Adj. IRR 0.83, 95%CI 0.57- 1.20, p=0.324); there was no difference in ART eligibility in the 6th to 12 months follow-up (Adj. IRR 1.02, 95%CI 0.68-1.53, p=0.935), or during the overall 12 month follow-up period (Adj. IRR 1.00 95%CI 0.77-1.31, p=0.946). Similarly, there were no differences in ART eligibility between the two study arms in the as-treated analysis. A total of 71 patients (31/605 (5.1%) in the PSCB arm and 40/604 (6.6%) in the SOC arm; p=0.27) did not have any follow-up CD4 counts and hence did not contribute person time to this analysis.

Conduct of daily life—In the ITT analysis, a statistically significantly higher proportion of participants in the PSCB arm reported good conduct of daily life compared to the SOC arm participants, in the first 6 months of follow-up (adjPRR= 1.10, 95% CI: 1.05-1.15, p<0.001); second six months; (adjPRR= 1.07, 95% CI: 1.02-1.12, p=0.005) and overall 0-12 month follow-up (adjPRR= 1.08, 95% CI: 1.03-1.13, p=0.001). Similarly, the AT analysis showed significantly higher proportion of participants reporting good conduct of daily life in the PSCB than the SOC arm, throughout the follow-up period.

Participants in the PSCB arm reported having received care buddy help in form of; reminder to return to the clinic (97%), reminders to take medication (68%), emotional support (47%), food provision (27%), assistance with household chores (13%) and financial assistance (10%).

DISCUSSION

This is the first randomized controlled trial of patient-selected care buddies for HIV infected persons not yet on antiretroviral therapy in a resource-limited setting. Previous studies of treatment partners focused on patients on antiretroviral therapy[15-16,19]. There was no significant difference in HIV disease progression (ART eligibility) between the study arms. These findings differ from results from another randomized trial of patient-selected ART treatment partners, where the intervention achieved significantly higher virologic suppression than the control, although benefits did not persist beyond six months[16]. Adherence to clinic appointments for CD4 assessment was similar between arms in the ITT analysis throughout the follow-up, but was significantly higher in the PSCB arm compared to the SOC arm in the AT analysis. These differences between the ITT and AT analysis results may indicate that contamination due to crossovers could have biased the results, hence limiting the power to detect a significant difference between the two arms. Crossover

rates could probably have been minimized with a cluster randomized trial at the village level.

The effect on adherence seen in the AT analysis may suggest efficacy of patient-selected care buddies on adherence. In another study, buddies proved useful for reminders and other supportive tasks in the first three months, but were generally less beneficial by six or more months[19]. A main feature of some programs is the requirement for patients to choose buddies to provide support and reminders for patients to take their medications consistently[19,26] . Our findings indicate that it is not necessary for HIV programs to delay HIV care while waiting for a patient to identify a treatment buddy.

It is possible that some care buddy exhaustion occurred, as supported by the high proportion (22%) of intervention arm participants who no longer retained a buddy. Such buddy burnout has also been documented after extended periods of time[27].The absence of differences in the incidence of ART eligibility could be explained by the fact that both groups received health education including adherence counseling as part of the routine care.

Patients in the PSCB arm consistently reported better ability to conduct activities of daily life than the SOC arm, as reported in other patient-selected partner studies[19].

Buddies potentially improved the conduct of daily life by reminding study participants to return to the clinic, reminders to take medication so as to remain healthy and encouragement to seek timely medical care in case of illness, all of which could contribute to better health. Better health may have resulted in better ability to conduct activities of daily life. Similar interventions improved conduct of daily life among patients on ART[28].

This study required the patient to disclose their HIV status to their buddy. We note that women were less likely than men to select their spouse as a care buddy. It is likely that married women did not select their husband because disclosure of HIV status often carries adverse consequences for women, including intimate partner violence, abandonment and divorce[29-30]. Fear of disclosure has also been identified as a major barrier to adherence[31]. To some extent, fear of disclosure was a deterrent to participation in the study, as indicated by eight participants, who were excluded because of unwillingness to disclose their status to a buddy.

Study Strength and limitations

This study's strength is that it is the first randomized controlled trial evaluating the impact of patient-selected care buddies conduct of daily life in HIV infected patients not yet receiving ART. However, the length of follow up was limited to 12 months, and results of a longer intervention are unknown. Study limitations included the high crossover rates, particularly in the PSCB arm which may have diluted study power.

The interviewers were out of touch with the study participants between follow up visits. It is therefore unlikely that the inability to blind the study team to which arms the participants had been allocated to introduced any bias when carrying out the follow up interviews

Conclusion

In pre-ART persons, having care buddies improved the conduct of daily life of the HIV infected patients but had no effect on HIV disease progression and only limited effect on clinic appointment adherence.

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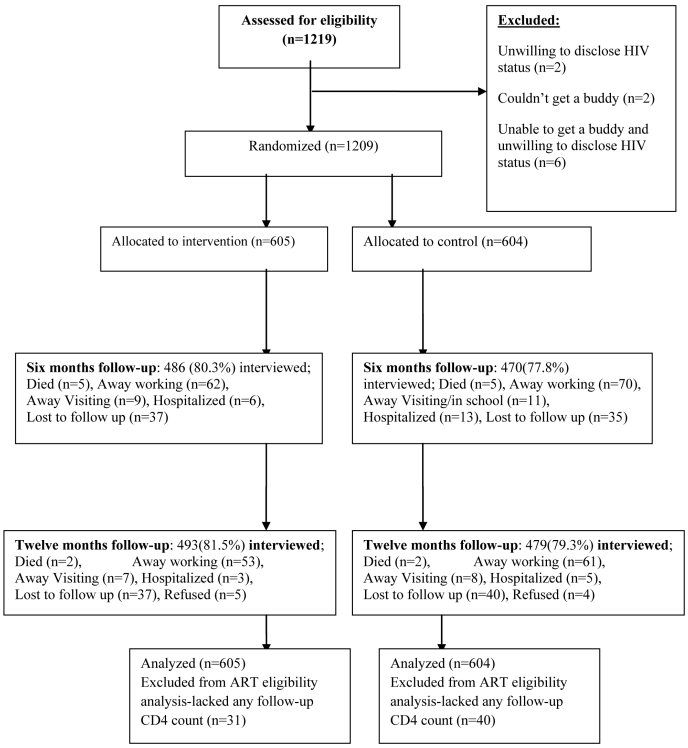

Figure 1.
Trial profile

Table 1

Participant baseline characteristics

Characteristic	Standard of care		Patient-selected care buddy arm (PSCB) n/N (%)		P-value
	(SOC)	n/N (%)			
	n/N	%	n/N	%	
Overall	604 /604	100	605/605	100	-
Age (years)					
Mean (SD)	37.0	8.8	37.6	9.1	0.272
Median (IQR)	36.0	11.0	36.0	12.0	
Age group					
15-29	107/604	17.8	102/605	16.9	0.439
30-34	147/604	24.3	149/605	24.6	
35-39	147/604	24.3	135/605	22.3	
40-44	86/604	14.2	91/605	15.0	
45+	117/604	19.4	128/605	21.2	
Sex					
Female	433/604	71.7	436/605	72.1	0.884
Male	171/604	28.3	169/605	27.9	
Baseline CD4 category					
251-350	84/604	13.9	89/605	14.7	0.690
351-499	148/604	24.5	159/605	26.3	
500+	372/604	61.6	357/605	59.0	
Marital status					
Not married	285/604	47.2	282/605	46.6	0.842
Married	319/604	52.8	323/605	53.4	
Main occupation					
Agriculture/housework	416/604	68.9	430 /605	71.1	0.404
Trading	66/604	10.9	72 /605	11.9	
Mobile occupation	8/604	1.3	5/ 605	0.8	
Bar/restaurant worker	20/604	3.3	19/605	3.1	
Other work	94/604	15.6	79/605	13.1	
Education level					
Primary or lower	506/604	83.8	526 /605	86.9	0.119
Secondary or higher	98 /604	16.2	79 /605	13.1	
Travel distance to HIV clinic (km)					
0-1	60/604	10.0	69/605	11.4	0.333
2-3	138/604	22.8	134/605	22.1	
4-5	109/604	18.0	93/605	15.4	

Characteristic	Standard of care		Patient-selected care buddy arm (PSCB) n/N (%)		P-value
	(SOC)	n/N (%)			
	n/N	%	n/N	%	
5+	148/604	24.5	175/605	29.0	
Don't Know	149/604	24.7	134/605	22.1	
Travel time to clinic (minutes)					
<30	94/604	15.6	101/605	16.7	0.425
30-59	208/604	34.4	176/605	29.1	
60+	287/604	47.5	317/605	52.4	
Don't Know	15/604	2.5	11/605	1.8	

Table 2

Prevalence risk ratios of adherence to clinic appointments and Conduct of daily life

Outcome	Intervention group		Standard of care group		Unadjusted PRR (95% CI)	Adj. PRR* (95% CI)	p-value
	n/N	%	n/N	%			
	INTENT TO TREAT ANALYSIS						
ADHERENCE TO APPOINTMENTS							
0-6 months follow-up interval							
Adhered to appointments	535/605	88.4	527/604	87.3	1.01(0.97,1.06)	1.01(0.98,1.05)	0.443
6-12 months follow-up interval							
Adhered to appointments	497/598	83.1	502/597	84.1	0.99(0.95,1.03)	0.98(0.94,1.03)	0.510
0-12 months (overall) follow-up							
Adhered to appointments	458/605	75.7	465/604	77.0	0.98(0.93,1.03)	0.98(0.93,1.04)	0529
CONDUCT OF DAILY LIFE							
0-6 months follow-up							
Good	368/555	66.3	306/556	55.0	***1.08(1.02,1.13)***	***1.10(1.05,1.15)***	***<0.001***
6-12 months follow-up							
Good	362/491	73.7	313/478	65.5	***1.08(1.02,1.15)***	***1.07(1.02,1.12)***	***0.005***
0-12 months follow-up							
Good	469/568	82.6	412/568	72.5	***1.05(1.00,1.11)***	***1.08(1.03,1.13)***	***0.001***
	AS-TREATED ANALYSIS						
ADHERENCE TO APPOINTMENTS							
0-6 months follow-up interval							
Adhered to appointments	415/435	95.4	647/725	89.2	***1.14(1.10,1.19)***	***1.10(1.06,1.14)***	***<0.001***
6-12 months follow-up interval							
Adhered to appointment	416/461	90.2	583/704	82.8	***1.15(1.01,1.20)***	***1.11(1.07,1.15)***	***<0.001***
0-12 months (overall) follow-up							
Adhered to appointments	387/474	81.7	536/704	76.1	***1.27(1.04,1.55)***	***1.06(1.00,1.12)***	***0.041***
CONDUCT OF DAILY LIFE							
0-6 months follow-up							
Good	339/435	77.9	335/512	65.4	***1.07(1.03,1.10)***	***1.07(1.03,1.11)***	***<0.001***
6-12 months follow-up							
Good	339/461	73.5	336/508	66.0	***1.09(1.02,1.17)***	***1.09(1.02,1.16)***	***0.021***
0-12 months follow-up							
Good	440/538	81.8	434/591	73.4	***1.14(1.10,1.20)***	***1.14(1.10,1.19)***	***<0.001***

*Adjusted for baseline CD4 count, age, sex, occupation, marital status and travel distance to the clinic.

Table 3

Incidence of ART eligibility by study group and follow up- interval (ITT analysis)

	Intervention (PSCB)	Standard of care (SOC)	Unadjusted IRR(95% CI)	Adj IRR* (95% CI)	p value
0-6 month follow-up interval					
0-6 months follow-up					
Number at risk	535	527			
Incident events/100 person yrs	36/277 (13.0)	43/289 (14.9)	0.87(0.57,1.34)	0.83 (0.57,1.20)	0.324
6-12 months follow-up					
Number at risk	485	480			
Incident events/100 person yrs	47/209 (22.5)	44/206 (21.4)	1.05(0.70,1.57)	1.02 (0.68,1.53)	0.935
0-12 months follow-up					
Number at risk	574	564			
Incident events/100 person yrs	83/547(15.2)	87/558(15.6)	0.97(0.74,1.29)	1.00 (0.77,1.31)	0.946

*Adjusted for age, sex, occupation and baseline CD4 count