PATIENT ADVOCATES

Impact of a Community Based Adherence Support Programme on ART Outcomes

AN EVALUATION OF SELECTED GOVERNMENT HIV TREATMENT SITES IN SOUTH AFRICA

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Background

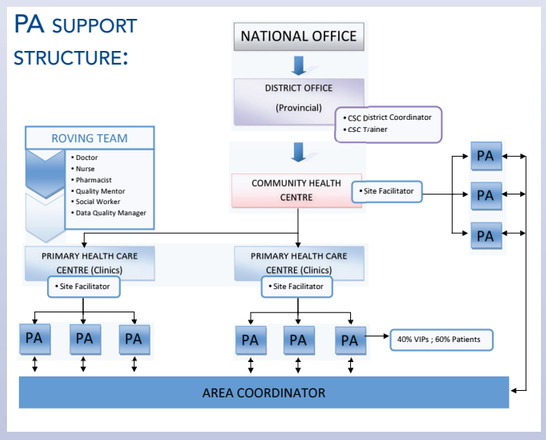
1. Optimum adherence to ART is critical for effective HIV/AIDS management
2. Poor adherence is a major predictor of treatment failure, progression to AIDS and death
3. High levels of virologic failures (>40%) noted in many ART programmes in resource-poor settings[1]

Intervention

To pre-empt poor adherence:

- A community based adherence support programme was established for patients through community workers (PAs)
- Ongoing treatment, counselling and psycho-social support at the community level is provided
- Special attention paid to very important patients (VIPs), 40% of workload; the ill, pregnant, TB, children and adolescents, those who have not disclosed and those showing early signs of defaulting
- Patients are encouraged to contract with themselves and get a treatment buddy to facilitate taking of treatment and keeping appointments.

PA SUPPORT STRUCTURE:



Patient Advocates (PAs)

- PAs are community healthcare adherence supporters
- PAs are the link between clinical services and the community
- PAs are trained in the basics of patient rights, confidentiality, ethics, health promotion
- Each PA is assigned to about 100 to 120 patients – mainly those initiating therapy or VIPs.

How the PAs assist in patient treatment

PAs assist with patient treatment readiness and assessment that include:

1. Psychosocial assessments to identify barriers to adherence including disclosure
2. Pre-treatment initiation education to ensure the understanding around the need for adherence
3. Plan support services to suit individual client needs through planned home visits and clinic follow-ups. Information gathered is presented at the treatment initiation multidisciplinary team meetings
4. PAs refer patients for services to address challenges that may be barriers to treatment; e.g. food insecurity, alcohol abuse, domestic violence
5. PAs provide support for the patient's household, encouraging testing, facilitating access to grants and certification, immunisation and other health and psychosocial issues.

Impact of PA support

1. **Patient level analysis**: the study variables among patients exposed and not exposed to PA services at ART sites with PA services were compared.
2. **Site level analysis**: patient outcomes at sites with and without PA services were compared.

Methods

1. Patient level analysis

Sites with better data quality, higher patient enrolment rates & sites with comparable proportions of clients with and without PAs were selected. 4 study sites were selected from 3 SA provinces. Patients who were initiated to ART between July and September of 2007 were assessed. The spectrum of elements extracted from the database included patients' PA support status; ratio of clinical care workers to total on site patients on ART; patient use of other adherence support measures like clinic based lay counsellors; history of missed-clinic-appointments; treatment pick-up rate; patient retention status and viral load.

Correlations were conducted to establish the associations between variables. The variables were compared between patients with and without PA support. Chi-square test and the student-t test were used to compare rates of patient retention status, missed appointments and treatment-pick-up rates between the two groups of patients.

2. Site level analysis

The site level analysis used patient records from ART sites with (n=12) and without (n=14) PA services. The analysis included all patient records where viral load (VL) test results were available. Survival time was taken as the difference between patients' most recent pharmacy visit date for medication pick-up and the ART start date. The analysis compared the optimum time patients remained in care at sites with and without PA services.

Results

1. Patient demographic information distribution by key variables

540 patient records were used for patient level analysis. The average treatment duration of the patients was about 9 months. The majority of the patients were female (64%), between 25 and 39 years old (59%), supported by adherence supporters (56%) and lived within a 9 kilometre radius from the health facility (58%). A higher proportion of the patients had clinic based adherence counselling (66%). HIV disclosure was high (96%) and 47% of the patients had disclosed their HIV status to one person only; 18% disclosed to two people and about 32% had disclosed to more than 3 people. But 25% (n = 125) of the study participants were neither being supported by a PA nor by a clinic based counsellor. The majority (82%) of this study cohort remained in care, 12% of patients who were lost to follow up, 4% transferred and 3% died. The participants were followed up for an average of 9 months from treatment initiation in July 2007 to about May 2008.

Table 1. Cross-tabulation of exposure to Adherence supporters and patient characteristics

		Exposure to PA		Pearson chi-square
		No	Yes	(p-value)
Sex	Female (n = 346)	44.8%	55.2%	.641 (.469)
	Male (n = 194)	41.2%	58.8%	
Age group	0 to 19 years (n = 34)	58.8%	41.2%	7.781 (.358)
(N= 537)	20 to 24 years (n = 27)	37.0%	63.0%	
	25 to 29 years (n = 90)	40.0%	60.0%	
	30 to 34 years (n = 118)	43.2%	56.8%	
	35 to 39 years (n = 108)	44.4%	55.6%	
	40 to 44 years (n = 77)	45.5%	54.5%	
	45 to 49 year (n = 39)	51.3%	48.7%	
	50 + years (n = 44)	31.8%	68.2%	
Distance from home	0 to 9 km (n = 300)	26.0%	74.0%	118.013 (.001)
to health facility	10 to 19 km (n = 22)	31.8%	68.2%	
(N = 514)	20 to 29 km (n = 112)	71.4%	28.6%	
	30 to 39 km (n = 15)	66.7%	33.3%	
	40 + km (n = 65)	83.1%	16.9%	
Type of accommodation	shacks and traditional	7.6%	92.4%	9.987 (.001)
(N = 299)	houses (n = 79)			
	Modern houses (n = 220)	24.1%	75.9%	
Disclosure of HIV status	No (n = 20)	75.0%	25.0%	8.418 (.005)
(N = 457)	Yes (n = 437)	42.1%	57.9%	
Number of persons	No person (n = 20)	75.0%	25.0%	41.694 (.001)
disclosed to (N = 452)	1 or 2 persons (n = 289)	51.6%	48.4%	
	> 2 persons (n = 143)	22.4%	77.6%	
Exposure to clinic based	No (n = 172)	72.7%	27.3%	70.956 (.001)
counselling (N = 501)	Yes (n = 329)	33.1%	66.9%	
Frequency of exposure to	Never (n = 172)	72.7%	27.3%	124.986 (.001)
clinic based counselling	1 or 2 times (n = 97)	62.9%	37.1%	
(N = 490)	> 2 times (n = 221)	19.0%	81.0%	
Viral load at six months	< 400 copies/ml (n = 221)	29.9%	70.1%	10.802 (.001)
(N = 319)	400 + copies/ml (n = 98)	49.0%	51.0%	

2. Relationship between Adherence supporter exposure and key study variables

Table 1 contains the distribution of study variables by exposure to PA. Patients who resided more than 40km from the health facilities were significantly less likely to have a PA (Table 1). As an indicator of economic standing, PAs were significantly more likely to be allocated to patients who lived in shacks and traditional houses (75%) versus those who lived in modern houses (25%). Patients with PAs were more likely to disclose their HIV status (58%) versus those without (42%; p = 0.005). Patients with PAs were also significantly more likely to be receiving clinic based counselling.

A significantly higher proportion of patients with PAs had viral loads of less than 400 copies/ml at six months (70%, p = 0.001). The proportion of patients with unsuppressed viral loads at six months was higher among those without PAs (42%) than those with PAs (24%; p > 0.001).

3. Relationship between treatment pick up rates and patient characteristics

The average treatment pick-up rate was 99.0% (95% CI = 96.4 – 101.0) and the average missed appointments was 11.4 days (95% CI = 6.8 – 16.0). The treatment pickup rate was significantly higher among patients with VL< 400 copies/ml (100.3%) when compared to patients with viral loads => 400 copies/ml (91%; p = 0.001). The number of days between scheduled medicine pick-up date and actual medicine pick up date was significantly more among patients with unsuppressed viral load (30.1 days) when compared to the number of missed days among patients with suppressed viral load (16.0 days; p = 0.001). The treatment pick up rate showed that 78% of the participants attained a 95% pick-up rate. The 95% benchmark is in line with the commonly cited global requirement for optimum adherence to ART. 50% of those who did not attain the 95% treatment pick up rate experienced virologic failure, while 17% of those who achieved the 95% treatment pick up rate experienced virologic failure ($\chi2$ = 6.558; p = 0.010). A significantly higher proportion of patients with PAs (89%) attained a treatment pick up rate of over 95% when compared to the proportion of patients without PAs who achieved the 95% pick up rate (67%) ; $\chi2$ = 6.131; p = 0.021).

4. Impact of PA services on the rate of virologic failure

The median time in which patients at sites with PA services maintained a suppressed viral load was 235 days while the median time in which patients at sites without PA services maintained a suppressed viral load was 199 days ($\chi2$ = 143.46; p = 0.001).

The probability of having an unsuppressed viral load was thus significantly lower at sites with PA services as compared to sites without PA services (Table 2).

Table 2: Risk of virologic failure among patients at Sites with and without PA services (N = 3,097)

PA status	Incidence rate of unsuppressed viral load	Hazard ratio	95% CI	Sig.
Sites without PA (n = 1,958)	0.003	0.64	0.585 – 0.693	0.001
Sites with PA (n = 1,139)	0.002			

5. Impact of PA services on patient retention

The median retention in care time for patients at sites with PA services was 561 days while the median retention in care time for patients at sites without PA services was 455 days ($\chi2$ = 124.27; p = 0.001). The Hazard Ratio was <1 (0.62) implying non-retention in care (dying and LTF) is less likely to occur at sites with PA services. (Table 3).

Table 3: Risk of non retention in care (Dying and LTF) among patients at Sites with and without PA services (N = 2,431)

PA status	Incidence rate of Death or LTF	Hazard ratio	95% CI	Sig.
Sites without PA (n = 1,958)	0.003	0.62	0 .620541 – 0 .6757964	0.001
Sites with PA (n = 1,139)	0.002			

Conclusion

- Community-Based Adherence support is relevant in promoting adherence to ART and treatment outcomes.
- The outcomes of this research could be applied to the management of other chronic diseases that require good adherence.

REFERENCES:

1. Ivers et al. Efficacy of Antiretroviral Therapy Programs in Resource Poor Settings: A Meta Analysis of the Published Literature. (2005) Clinical Infectious Diseases 41(2): 217-4

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