The Disability Grant:

Obstacle or Enabler to Effective, Sustainable Antiretroviral Treatment?

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Background

- According to Russell *et al* (2007: 344), “considerable challenges remain for people who are trying to live with HIV as a manageable chronic condition. ART programmes need to seek convergence with economic programmes that have expertise in

  livelihood support and promotion

  [*and]*

  social protection initiatives.

  The future for those on ART depends not only on the provision of medicine but also on economic and social support for rebuilding lives and livelihoods.”

- The 2007-2011 National Strategic Plan recommends “the introduction of a chronic diseases grant that will promote adherence by supporting people with long term medical needs” (NDoH, 2007: 114)

Puzzle of the Disability Grant Dilemma

patients may trade off this source of stable income against their health, adhering sub-optimally to treatment, with potential major implications for the long-term sustainability and cost-effectiveness of ARV treatment (Nattrass, 2006/07)

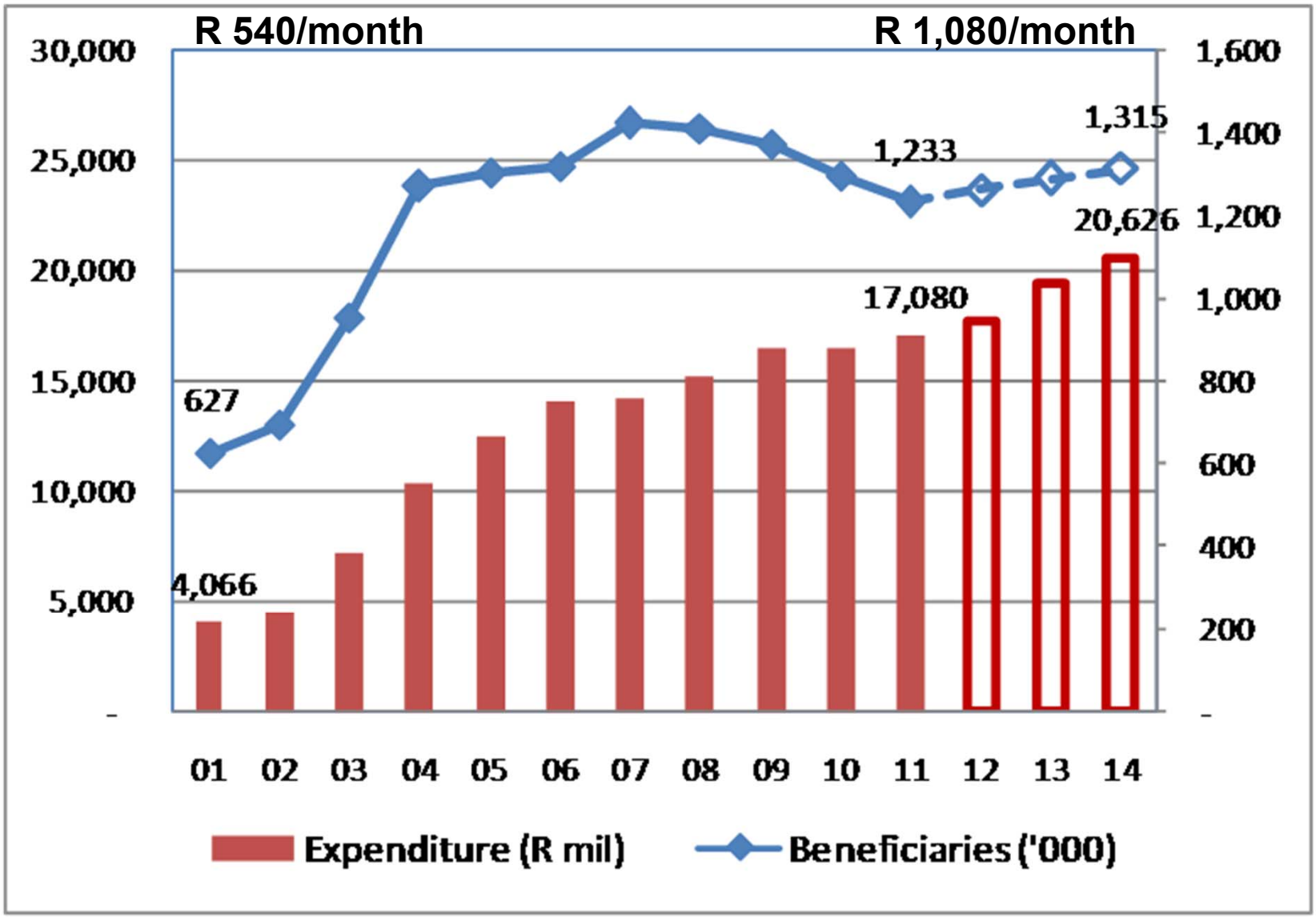
yet, supporting ***qualitativ***e evidence (Leclerk-Madlala, 2006; Peltzer & Phaswana-Mafuya, 2008; Goudge et al., 2010)

refuted by

a singular ***quantitative*** study

(Venakataramani et al., 2011)

Figure 1: Disability Grant Beneficiaries and Expenditure



Data

Effective Aids Treatment and Support (FEATS) study [2007-10]:

- Open enrolment into prospective experimental study at 12 phase I ART clinics of patients and patient households (n=648)
- Eligibility criteria: adult (age 18+ years), commenced ART in past month, living in community where the particular ART clinic is located
- Three survey rounds using patient and household questionnaires

Identification Strategy

Independent variables:

(a) Transitions in DG access

DG Lost

versus

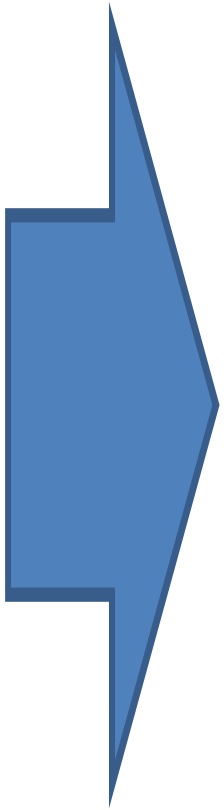
DG Gain

(b) Income effects associated with transitions in DG status

DG Lost * Income Loss (ZAR)

versus

DG Gain * Income Gain (ZAR)



Dependent variables:

(a) Missing a clinic/hospital visit

(b) CASE / CASE cut-off

(c) Self-reported adherence (MCA)

(d) Clinical markers

- CD4 count (copies/mm^3)
- ln RNA level (copies/mL)
- Virologic suppression
- Virologic failure
- Immunologic failure

Method

Propensity Score Matching (PSM), using Stata's *psmatch2* command

Explanatory variables:

sex, education, dwelling, district, pre-ART CD4 baseline, employment status when first tested HIV-positive, employment status when initiating ARV treatment

plus

lag of non-government income, health-related quality-of-life, months on ARV treatment

Two approaches:

Singular Treatments

(logit model, nearest neighbour, common support area)

versus

Multiple Treatments

(multinomial logit model, propensity scores as weights)

Table 1: Estimates of Mean Income Effects

	DG Loss		DG Gain	
	Household	**Per Capita**	**Household**	**Per Capita**
(a) Nearest Neighbour PSM				
	- R359 *	- R316 ***	+ R371	+ R18
[95% CI]	[-787: +69]	[- 544 : - 87]	[-540 : +1282]	[-263 : +299]
(b) Weighted PSM				
	- R510 *	- R244**	+ R437 **	- R11
[95% CI]	[-942: -77]	[-479 : -9]	[+83: +791]	[-864 : +842]

Note: Estimates are obtained from a linear regression model where the difference in real household income and real per capita household income is regressed on DG loss and DG gain adjusting for lag of real income, age, sex and marital status of household head, dependency ratio, number of employed household members, dwelling and district.

Table 2: Impact of income effects on ART treatment outcomes

	CASE	Adherence	CD4	Ln (RNA)
(a) Nearest Neighbour PSM				
DG Loss * Y-loss	-	-	-	+ ***
DG Gain * Y-gain	+	+	-	-
(b) Weighted PSM				
DG Loss * Y-loss	-	-	-	+
DG Gain * Y-gain	+	+	+	-

Table 3: Impact of income effects on ART treatment outcomes

	∆ CASE	∆ Adherence	∆ CD4	∆ Ln (RNA)
(a) Nearest Neighbour PSM				
DG Loss * Y-loss	+	+	-	+ ***
DG Gain * Y-gain	+	+	+ **	+
(b) Weighted PSM				
DG Loss * Y-loss	+	+	-	+
DG Gain * Y-gain	+	+	+	+

Table 4: Impact of income effects on ART treatment outcomes

	Miss	CASE cut-off	Immunologic failure	Virologic suppression	Virologic failure
(a) Nearest Neighbour PSM					
DG Loss * Y-loss	+ ***	- ***	+	- **	+
DG Gain * Y-gain	- ***	+ ***	n/a	+	-
(b) Weighted PSM					
DG Loss * Y-loss	+ *	- *	n/a	- **	+ **
DG Gain * Y-gain	-	+ **	n/a	+	-

Table 5: Mean effect sizes of income effects on ARV treatment outcomes

	∆ CD4	Miss	CASE cut-off
(a) Nearest Neighbour PSM			
DG Loss * Y-loss (R ‘00)			
DG Gain * Y-gain (R ‘00)	+23.6 *** [13.3 : 33.9]	-55.3 *** [25.6 : 85.0]	+44.7 *** [29.4 : 60.1]
(b) Weighted PSM			
DG Loss * Y-loss (R ‘00)		+0.06 * [0.4 – 13.8]	-0.06 * [0.5 : 13.9]
DG Gain * Y-gain (R ‘00)			+67.9 *** [44.5 : 91.2]

Conclusion

Income loss from termination of DG has small but negative effects only on ART adherence and treatment outcomes, while income gains from receiving a DG has large, positive effects on ART adherence

Social welfare officers and health care teams, in particular physicians considering applications for a disability grant, should take particular care when supporting poor ARV clients' applications for a first disability grant or the renewal of an existing disability grant

, BUT in the longer term, healthy ARV clients should be referred to public welfare programmes or welfare-to-work programmes to eliminate dependency on social welfare grants