

# The Impact of Antiretroviral Therapy on Quality of Life and Economic Outcomes for South African Patients: Five-Year Follow-Up

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# Background

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- Millions of adults in low- and middle-income countries are reaching  $\geq 5$  years on ART
  - Nearly 5% of adult South Africans are on ART
- Little evidence on the “non-clinical” outcomes of ART (quality of life, economic activity, household welfare)
  - Several studies show large improvement  $\leq 1$  year on ART
  - Handful of studies find improvements continue in years 2-3
  - Few data beyond 3 years
- Given high proportion of working-aged adults affected, important to know if people on lifelong ART:
  - Feel well from day to day
  - Can perform their normal daily activities
  - Can obtain or maintain employment

# Study Design

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- Prospective cohort study
- Randomly sampled patients from 1 urban hospital, 1 informal settlement clinic, and 1 rural clinic
- Included pre-ART patients and patients on ART < 6 months at enrollment
- Baseline interviews conducted June 2005-June 2006
- Interviewed subjects during routine clinic visits as frequently as possible through June 2011
- Questionnaire designed for this study
- Also had access to medical record data (ART start date, CD4 counts)

# Data Analysis

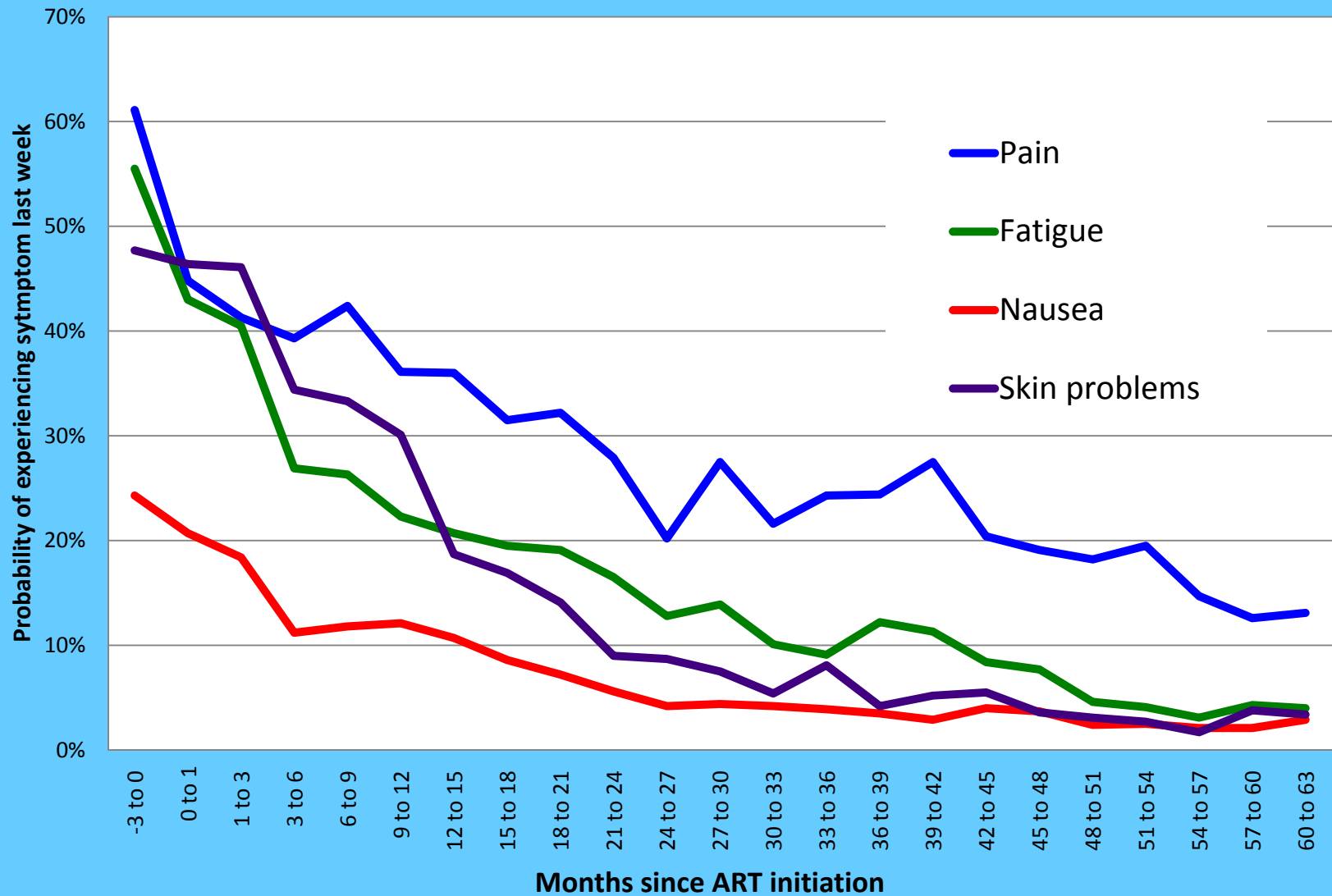
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- Interviews grouped by 90-day time intervals relative to ART initiation (3 months before to 63 months after)
- Outcome variables were dichotomous and modeled with logistic regression using a population averaged model
- Regression models included dummy variables for time category, sex, and age group
- Predictors of clinic attrition (stopped attending study clinic for any reason) identified
- Outcomes:
  - symptoms last week
  - general health yesterday
  - ability to perform normal activities
  - employment status

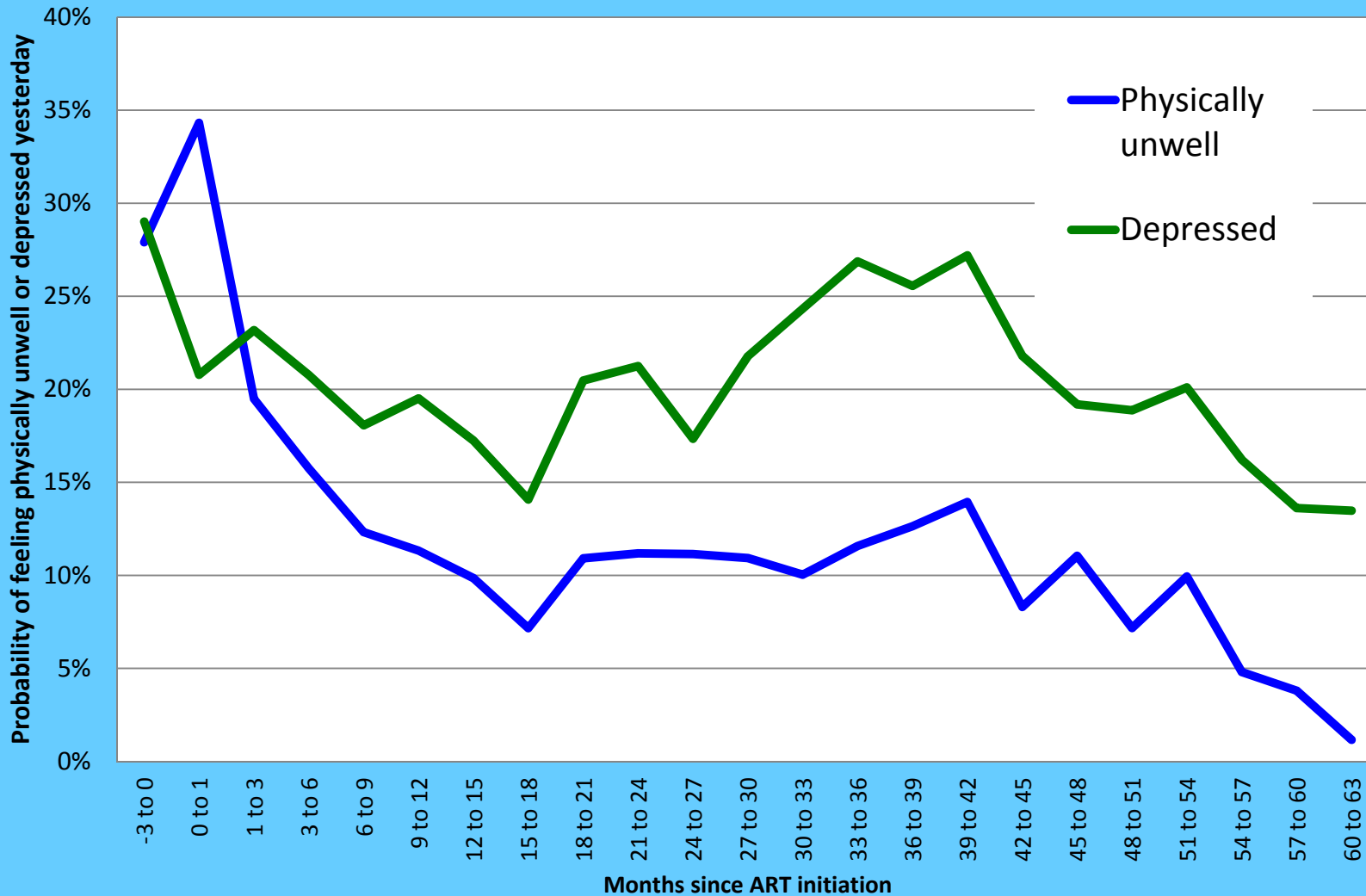
# Cohort Characteristics at Enrollment

Characteristic	Value
N	879
Sex (% female)	78%
Age (years)	
18-29	28%
30-39	47%
40-49	19%
>49	6%
Median CD4 count closest to treatment initiation (cells/mm <sup>3</sup> ) [IQR]	104 [35-159]
Primary activity when feeling well	
Formal employment	26%
Informal work	20%
Unemployed, seeking work	24%
Housework / family care (unpaid)	26%
Other	5%
Mean number of interviews conducted/subject	7.3

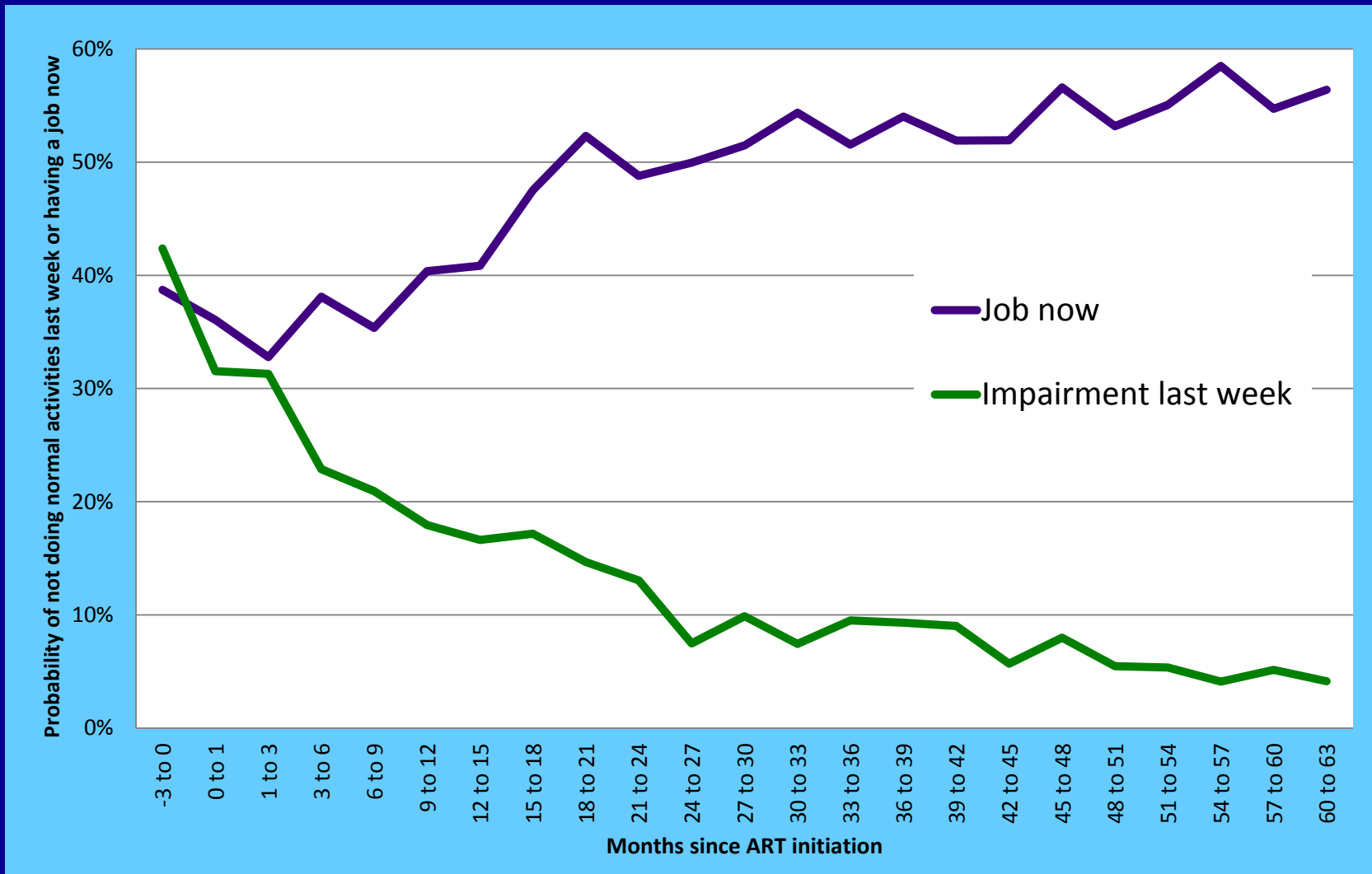
# Outcomes 1: Symptoms Last Week



# Outcomes 2: General Health Yesterday



# Outcomes 3: Normal Activities and Employment





# Outcomes: Summary

Outcome	% reporting outcome*	
	3 months before ART	5 years after ART
<i>*conditional on remaining in care for 5 years after ART initiation</i>		
Pain last week	61%	13%
Fatigue last week	56%	4%
Nausea last week	24%	3%
Skin problems last week	48%	3%
Felt physically unwell yesterday	37%	8%
Felt sad or depressed yesterday	29%	13%
Could not perform normal activities last week	42%	4%
Have a job now	39%	56%

*Among those with  $\geq 4$  years' follow up, not employed, and not looking for work at baseline (n=96, 18% of cohort), 30% were employed and 53% were looking for work by last interview.*

# Clinic Attrition

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- 47% clinic attrition by end of 5 year period
  - Study loss (remaining in care but not in study) < 4%
- Clinic attrition/year and mean CD4 counts of study subjects remaining in care did not differ from overall treated population at largest study site
- Significant predictors of clinic attrition included:
  - Younger (<30) (HR=1.55) or older (>50) (HR=1.64) age
  - Less time lived in current community (HR=1.59 for < 1 year)
  - No prior experience with study clinic (HR=1.27)
  - Lower CD4 counts (HR per 100 cell decrease=1.16)
- Some patients who drop out of treatment program likely have worse or better outcomes than rest
- ***Have to interpret results as conditional on remaining in care***

# Conclusions

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- Adult ART patients experience large and sustained improvements in non-clinical outcomes that continue to increase over at least 5 years after starting treatment
- Benefits to individual patients should translate into improved incomes for households and economic and social development for communities
- Patients are still burdened by some symptoms, frequent clinic visits, other consequences of HIV
- Results are conditional on remaining on treatment; study underscores importance of retention in care

# Acknowledgements

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