

ABSTRACT

HIV (Human Immunodeficiency Virus), the virus that causes AIDS (Acquired Immune Deficiency Syndrome), continues to present an enormous health challenge on the global front for the past three decades. Despite tremendous strides in cutting-edge research, evidence-informed programmes, and an increased global response in funding coupled with the steady scale-up of ART (antiretroviral therapy), HIV remains the leading cause of death globally and is the leading cause of death among women of reproductive age.

OBJECTIVES

The primary purpose of this study is to model the prognosis of an HIV + female patient to assist in the decision-making analysis of the effectiveness of a nutritional intervention program into the disease treatment regime.

This cost-utility analysis will calculate the Quality Adjusted Life Years (QALYs) gained by the patient from the introduction of this intervention.

METHODS

This study investigates the emergence of the triple threat – HIV, Malnutrition and Drug Resistance in women aged 15- 49 years of age.

Using a Bayesian probabilistic approach with a Markov Chain decision tree model in a resource-limited health care provider setting, sequential algorithms in different transition health states were derived using utility values extrapolated from a systematic review. This cost-utility analysis allowed for the calculation of the Quality Adjusted Life Years (QALYs) gained by the patient from the introduction of this intervention and compared with the WHO-Choice threshold of gross domestic product per capita.

RESULTS

Intervention	Cost (US\$)	Incremental Cost (US\$)	QALYs	Incremental QALYs	ICER (US \$/QALY)
Base Case					
No Nutritional Intervention	181.64		2.87		
Nutritional Intervention	1129.31	947.67	13.56	10.68	88.69

CONCLUSION

- This study provides scientific evidence to support the introduction of a nutritional program for HIV + women aged 15-49 years on ART.
- The threshold analysis showed that as the annual cost of the nutritional intervention increases, the cost of this supplemental regime for HIV + female ART patients gradually becomes less cost-effective.
- The probability of drug resistance in HIV + female ART patients decreases with nutritional support.

