

## **An HIV/AIDS knowledge scale for adolescents: item response theory analyses based on data from a study in South Africa and Tanzania**

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### **Periodical title:**

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### **Description:**

A 14-item human immunodeficiency virus/acquired immunodeficiency syndrome knowledge scale was used among school students in 80 schools in 3 sites in Sub-Saharan Africa (Cape Town and Mankweng, South Africa, and Dar es Salaam, Tanzania). For each item, an incorrect or don't know response was coded as 0 and correct response as 1. Exploratory factor analyses based on polychoric correlations showed two separate factors for all sites. Two-parameter item response theory (IRT) analysis (bifactorial multiple indicators multiple causes confirmatory factor analysis models) consistently showed a general first factor and a second 'method' factor. One single global latent variable seemed to sufficiently well capture most of the systematic variation in knowledge. Some items did not discriminate well between levels of the underlying knowledge latent variable and information values were highest for low levels of knowledge. The scale might be improved by adding items, in particular items that are more difficult to answer. Some differential item functioning effects related to site and socioeconomic status were identified. Scores on the latent knowledge variable were particularly low among females in Dar es Salaam and Mankweng, and were negatively associated with socioeconomic status. This study illustrates advantages of using IRT analysis instead of more conventional approaches to examining psychometric properties of knowledge scales.

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