Disparities in availability of essential medicines to treat non-communicable diseases in Uganda: A Poisson analysis using the Service Availability and Readiness Assessment

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BACKGROUND

- EM-NCD availability generally remains poor in low- and middle-income countries (LMIC).
- The extent to which disparities for EM-NCD availability exist within individual LMIC has not been previously studied.
- WHO Service Availability and Readiness Assessment (SARA), a nationally representative comprehensive survey of health facility preparedness to provide services, represents a potentially useful tool for studying such within-country disparities.
- Prior research using SARA data has been limited to descriptive analyses.
- Our research aims were to:
  1. Identify within-country disparities in EM-NCD availability in Uganda
  2. Demonstrate that SARA can be used to model predictors of health facility preparedness, including the availability of EM-NCD.

METHODS

- We built a Poisson regression model using data collected at 196 public- and private-sector Ugandan health facilities* in the 2013 Uganda SARA survey (Figure 1 and Table 1).
- Our outcome of interest was the total number of different EM-NCD available in each facility from a list of ten included in SARA (Table 2).
- Basic amenities, basic equipment, region, health facility type, managing authority, capacity for diagnosing NCDs, and range of HIV services were used as predictor variables.

*The 2013 SARA survey included 209 facilities. We excluded 13 referral hospitals because they were sampled from outside the 10-district geographic sampling frame.

RESULTS

- 37% of surveyed facilities had no EM-NCD available and no facilities had all ten EM-NCD available (Figure 2).
- Adjusting for basic amenities, equipment, and capacity for diagnosing NCDs, our model indicates significant associations between EM-NCD availability and geographic region, managing authority, health facility type, and range of HIV services.
  - Private for-profit facilities’ number of EM-NCD is 124% higher on average than public facilities’ (p<0.001).
  - General hospitals and referral health centers (HC-IV) had 80.5% (p=0.017) and 110% (p=0.006) higher EM-NCD counts than the lowest level facilities, respectively (Table 3).
  - Facilities in the North and East regions have significantly lower EM-NCD counts than those in the South (capital) region (p=0.015 and p=0.003).
  - EM-NCD counts in the West and South (capital) regions were not significantly different (p=0.693).
  - Offering HIV care and support services was associated with 35% lower average EM-NCD counts (p = 0.006), though offering HIV counseling and testing was associated with 57% higher counts of EM-NCD (p=0.048).

CONCLUSIONS

- We identified multiple internal disparities in the availability of EM-NCD in Uganda based on differences in Managing Authority, Facility Type, Region, and the availability of basic amenities and equipment.
- The presence of HIV counseling and testing and the presence of HIV services had opposite and nearly equal effects on EM-NCD availability.
- This research is limited by the cross-sectional nature of SARA data. Longitudinal research must be done to establish the causal direction of these associations.
- Our findings can be used by health system planners and policymakers to identify gaps and guide the distribution of limited resources.
- While the purpose of SARA is to assess and monitor health services readiness rather than produce data for statistical analyses, we show that it can also be an important resource for answering more complex research and policy questions.

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