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Rheumatic Heart Disease in Namibia

Evaluating the Burden and the Cost- Effectiveness of a Preventive Strategy

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Akademisk avhandling

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För att delta digitalt via Zoom:

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Abstract**Background**

Rheumatic Heart Disease (RHD) is a neglected public health problem, which is most prevalent in low-to-middle income countries. It affects over 460 million people and causes about 390,000 deaths annually, predominantly children, young adults, and women. This thesis aimed to assess the burden of Rheumatic Heart Disease in Namibia and to evaluate the cost-effectiveness of a preventive strategy.

Methods

Data was obtained from primary and secondary sources in four distinct studies. The first study analysed the RHD outpatient and inpatient data from 2010-2020. The second employed a cross-sectional survey, incorporating a questionnaire with the EQ-5D-5L tool, to assess the health-related quality of life and healthcare usage pre- and post-RHD diagnosis. A systematic review was conducted in the third study synthesising preventive interventions, while the fourth study used a Markov model to evaluate the cost-effectiveness of a secondary prevention strategy in Namibia.

Results

The clinical RHD prevalence was estimated at 28 per 100,000 cases. From the survey, 83 RHD patients participated, predominantly women (77%) and primarily young adults aged 20-29 (41%). The majority (84%) had received surgical treatment. Notably, there was a significant increase in mean QALY from 0.773 pre-diagnosis to 0.941 post-diagnosis ($p < 0.001$). The systematic review underscored the effectiveness of school and nurse-led prevention programmes. The health economic evaluation demonstrated echocardiographic RHD screening cost-effective, with an Incremental Cost-Effectiveness Ratio of N\$ 28,516.75 per QALY gained, which falls below Namibia's GDP per capita.

Conclusions

The findings highlight a significant gap in RHD data, particularly in high-endemic regions like Sub-Saharan Africa, emphasising the need for enhanced data quality and surveillance. The effectiveness of school-based and community-led programmes is apparent, but the scarcity of data from diverse regions limits a comprehensive understanding of optimal prevention strategies. Echocardiographic screening is identified as a feasible component of RHD secondary prevention in Africa, pointing towards a policy need for improved surveillance and data quality. Future research should investigate the impact of various interventions on RHD incidence and prevalence.

Key words: Rheumatic Heart Disease, Prevention, Cost-effectiveness, Namibia

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