

Code: ABS_RHD_001

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Score: Conditional

Role of technology in creating rheumatic heart disease awareness among school-going children in Kenya

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Introduction: Rheumatic heart disease (RHD) is the most common cardiovascular disease in Kenya and mainly affects school-going children. As a preventable disease, its incidence may be significantly reduced by educating the community on preventive measures. Educating children is crucial in combating the disease since they are especially vulnerable to streptococcal infection. The role of innovative training approaches (technology-based) among school-going children remains unverified.

Objective: The current project therefore sought to train school-going children on RHD using an interactive digital module from WiRED international, a US based non-profit organization working in Kenya.

Methods: The module offered simplified animated presentations linking sore throat, rheumatic fever and RHD, as well as ways of their prevention. The module also introduced questions throughout the presentation and provided instant feedback to reinforce key concepts.

Upper primary pupils from two schools were randomly assigned into control (n=100) and experimental (n=100) groups. The experimental group was trained using the module, while the control group did not have any teaching. Both groups then answered 23 multiple choice questions (MCQs). During a follow-up visit one week later, the students were re-administered with the same final exam. The results were analyzed using SPSS version 16.0.

Results: The mean age of the pupils was 12.71 years. On the first visit test, the experimental group had higher average scores compared to the control group (16.3±2.5 vs. 10.5±2.3 marks; $p<0.001$). The follow-up test results were 15.7±2.7 for experimental and 10.4±2.4 marks for the control, $p<0.001$. Age, class level or gender did not affect performance.

Conclusion: The use of interactive digital modules to train school-going children on RHD increases knowledge, awareness and is feasible, efficacious and sustainable. This approach is beneficial, and could potentially reduce the toll of RHD if tailored to the specific learning needs of the children and applied more widely.