Using a blended-learning approach and mHealth to improve competence on antimicrobial stewardship for healthcare providers in Nigeria: an action research

Kelechi Eguzo[1], Chukwuemeka Oluoha[2], Usenime Akpanudo[3], Chinenye Onodugo[4], Kingsley Nnah[5], Peace Egharevba[6], Peace Ndukwe[7], Onyechere Nwokocha[7]

1. Marjorie Bash Foundation
2. Abia State University
3. Harding University
4. University of Nigeria Teaching Hospital
5. Marjorie Bash College of Health Sciences and Technology
6. University of Benin
7. Abia State Ministry of Health

Abstract

Purpose

Above 50% of Nigerians who take medications on any given day consume antibiotics, while up to 22% of cases of malaria are treated with antibiotics. The prevalent inappropriate use of antibiotics with relatively poor knowledge can effectively be addressed through education. This project explored the impact of a blended learning course and mHealth intervention on the competence of healthcare professionals (HCP) regarding antimicrobial stewardship in Abia State. The primary outcome was a change in content knowledge before and after the course.

Methods

This was mixed-methods action research involving doctors, nurses, medical laboratory scientists, and pharmacists. Blended learning course was deployed using Google Classroom and in-person workshop. mHealth intervention included the Spectrum App for antibiotics decision support and the Bugs n Drugs App for reporting antimicrobial susceptibility as well as prescriptions. Quantitative data included surveys and quizzes. Qualitative data were discussion forums. Data analysis involved descriptive statistics and student t-tests. Spearman's correlation coefficient was used to compare trends in antibiotics prescriptions. Thematic analysis was used to analyze qualitative data.

Results

The study involved 213 HCPs, with average age of 33.4 (±10.6) years and about 10.7 (±8.8) years in practice. At registration, up to 33% of participants prescribed antibiotics for upper respiratory tract infections. Participants who completed blended learning gained 16.42% in knowledge scores compared with those who completed online only (3.24%, p<0.001). "*The knowledge gotten during the class studies even the playlet during the physical workshop at Aba made me not to jump into prescribing antibiotics for simple cough anymore*".

Conclusion

Study shows that people in the blended-learning group had higher improvements in knowledge scores, possibly due to their having more exposure to the content compared to those in the online-only group. More continuing education should adopt the blended learning approach.