

The Role of Antimicrobial Resistance in Infectious Disease Burden, the Effectiveness of Clinical Pharmacist-Led Consultation in Benghazi Libya

Abstract

Background: Antimicrobial resistance (AMR) is a significant global health threat, largely driven by the misuse of antimicrobial drugs, leading to increased morbidity, mortality, and healthcare costs. Effective clinical pharmacy services, particularly through Antimicrobial Stewardship Programs (ASPs), are essential for optimizing antimicrobial use and combating AMR. **Aim:** This study aimed to evaluate the contribution of antimicrobial resistance (AMR) to the burden of infectious diseases in hospitals in Benghazi, and to investigate the effectiveness of clinical pharmacy consultations in mitigating AMR and their impact on patient outcomes and antibiotic prescribing practices. **Materials and Methods:** A retrospective cross-sectional study was conducted, reviewing 200 inpatient medical records collected through patient data forms. Concurrently, 300 self-administered questionnaires were distributed to clinical pharmacists, physicians, infection control specialists, and nurses. Data analysis was performed using SPSS Version 21 and Microsoft Excel Data were expressed as means \pm standard deviation (SD). Comparisons between groups were performed using analysis of non-parametric tests. A value of $P < 0.05$ was considered statistically significant. **Results:** Among the 200 patients analyzed, 84.5% ($n = 169$) had not undergone swabbing for culture before the initiation of antibiotic therapy, and documentation of culture test results was absent for 84.5% ($n = 169$) of cases. Of the 300 healthcare professionals surveyed, 93.7% ($n = 281$) reported that the ASP was not implemented in their hospital, and 92.3% ($n = 277$) indicated that antibiotics were dispensed without adherence to hospital-specific protocols. Modifications to antibiotic therapy were primarily based on physician experience (86%), with only 14% guided by microbiological findings. Pharmacist involvement in key patient care activities was limited: 78% ($n = 234$) did not participate in medical history-taking, 96.3% ($n = 289$) were not involved in antibiotic selection, 94.3% ($n = 283$) did not monitor patients for

medication-related problems, and 99% (n = 297) did not perform dosage adjustments based on renal and hepatic function assessments. **Conclusion:** The study reveals significant deficiencies in clinical documentation, diagnostic procedures, antimicrobial stewardship, and pharmacist participation in Benghazi hospitals. The extensive empirical use of antibiotics, poor patient monitoring, and heightened risk of AMR have been exacerbated by these gaps. Improving patient outcomes and preventing AMR requires addressing these issues through enhanced microbiological testing, standardized clinical procedures, increased pharmacist involvement, and the promotion of evidence-based practices.

Keywords: Antimicrobial resistance, clinical pharmacy, antimicrobial stewardship programs, pharmacist involvement, patient safety, healthcare practices.