

Abstract

Background: Antimicrobial resistance is a worldwide challenge for health services and systems alike. To reduce the use of antibiotics, complex multiple component interventions are increasingly pursued to address the complexity of health care by achieving various and sustainable effects. Particular interest is focused on contextual factors and their impact on changes. The aim of the present study was to identify such context-dependent factors relevant to practitioners' perception of antibiotic prescribing in German primary healthcare.

Methods: This is a prospective observational study embedded in the cluster randomized trial ARena (Sustainable reduction of antibiotic-induced antimicrobial resistance). Data from a three-wave survey study generated between January 2018 and July 2019 were used. Logistic regression models were carried out. The independent variable is the perceived impact of participating in the ARena project on decision-making regarding antibiotic prescribing, the dependent variables included individual characteristics, intervention group allocation, PCN environment, and general conditions of the medical practice.

Results: 69% of participants indicated to have perceived an impact on their decision-making regarding antibiotic prescribing by participating in the ARena project. Work experience (OR 1.05, 95% CI 1.006-1.103), PCN environment (OR 2.06, 95% CI 1.256-3.363), structural conditions (OR 1.66, 95% CI 1.161-2.371), environment of existing processes (OR 1.46, 95% CI 1.011-2.094), and externally defined general conditions (OR 1.57, 95% CI 1.035-2.378) significantly influenced physicians' perception in antibiotic prescription. Against the hypothesis, synergy of effects of the contextual factors regarding physicians' decision-making on antibiotic prescribing could not be observed.

Conclusion: This study indicates that various contextual factors of an implementation program influence physicians' perceptions of antibiotic prescribing. These contextual factors exist at individual, practice, and system level. The results show that it is necessary to consider the respective context when implementing interventions.