The role of knowledge and clinical factors in antibiotic prescribing

HOW WAS THE STUDY DONE?

A survey was developed to collect information on the knowledge and socio-demographic characteristics of primary care providers in South Africa.

The survey was answered by:

- 193 GPs who participated in the Standardised Patient Study; and
- 433 practicing GPs in the rest of South Africa who had been recruited to complete an online survey.

In addition to the knowledge survey, respondents to the online survey were given a series of experimental clinical vignettes, in which they were asked what treatment they would prescribe for hypothetical patient cases. The vignettes varied systematically the clinical details of the case described, in order to understand their influence on prescribing decisions.

WHAT DID THE STUDY FIND?

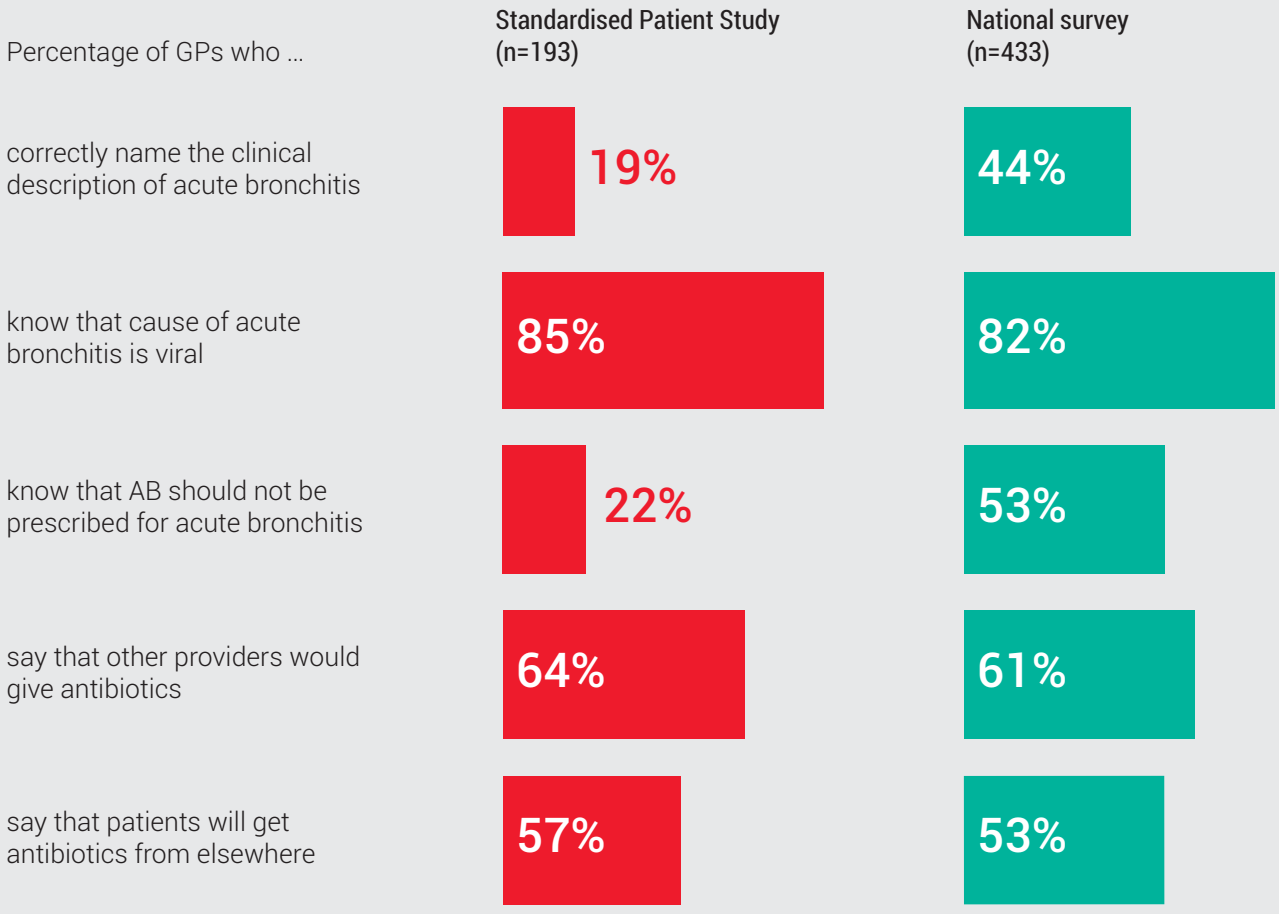
Knowledge of acute bronchitis and perceptions of antibiotic (AB) prescribing for acute bronchitis were similar across both samples.

GPs in South Africa believed that their colleagues would prescribe antibiotics for acute bronchitis, even though over 80% knew the cause was viral.

They also believed that their patients would get antibiotics from another doctor if they did not prescribe this to them.

Across both studies, successful diagnosis of the acute bronchitis case was low. Less than half were able to recognise this case, although GPs in the national survey were more likely to do so. Awareness that antibiotics should not be prescribed for acute bronchitis also diverged (see Figure 1).

Figure 1: Knowledge and perceptions of acute bronchitis and antibiotic resistance in South Africa



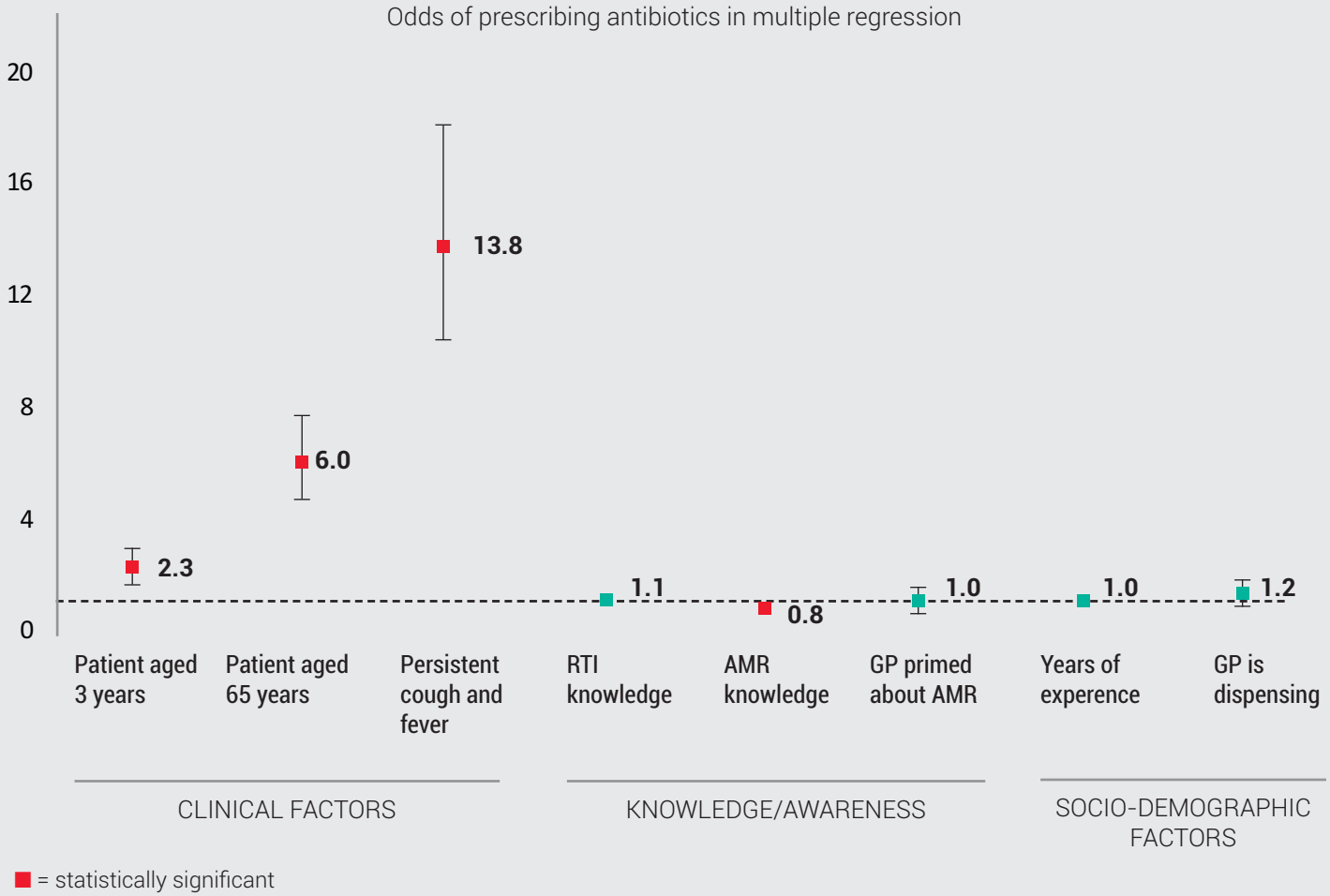
The analysis of prescribing patterns in clinical vignettes suggest that the most important determinants of unnecessary prescription of AB are the age of patient and the severity of symptoms.

- When the hypothetical patients in the clinical vignettes were elderly patients or children, GPs were respectively 2 and 6 times more likely to respond that they would prescribe an antibiotic, compared to what they would do with a 25-year old patient.
- The increasing severity of the presenting history (higher temperature indicating fever and a longer, persistent cough) also dramatically increased the likelihood that GPs reported a higher rate of AB prescribing.

Knowledge of antibiotic resistance decreased this likelihood, although giving providers information about antibiotic resistance before showing the clinical case (antibiotic priming) did not impact prescribing behaviours, nor did better knowledge of RTIs.

The remaining provider characteristics (years of experience and dispensing) did not have a significant impact on reported prescribing patterns (see Figure 2).

Figure 2: Predictors of antibiotic prescribing from the national survey



WHAT ARE THE CONCLUSIONS OF THE STUDY?

Providers antibiotic prescribing behaviours are expectedly influenced by clinical factors (age, presenting history). However, knowledge of acute bronchitis is shown to be lacking, suggesting that recognising acute bronchitis may be difficult. More training on identifying RTIs, specifically acute bronchitis, may not have significant effects given the odds ratio of RTI knowledge. Changing provider norms and antibiotic resistant knowledge, however, may be more effective.