

Young Doctors' Perspectives on Antibiotic use and Resistance in Europe: preliminary results of the YPAR study.

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BACKGROUND

During their specialty training young doctors mostly gain knowledge and skills related to their specialty. In addition, in this period young physicians of all specialties start to prescribe antibiotics on their own and shape their prescribing behaviour and practices. The specialty training is the last window of opportunity for behaviour shaping instead of more difficult behaviour changing which takes place in more senior clinical practice. We investigated their perspectives on antibiotic resistance and prescribing with regard to the country of residency, the specialty, the year1 of training and demographics.

METHODS

A 23-item on-line web questionnaire was developed by a multidisciplinary group of experts and sent to young doctors in training via national/regional coordinators in 9 European countries between October 2015 and March 2016. In the further analysis we included the countries and the specialties with more than 100 respondents. Principal component analysis was used to view data structure (identification of independent dimensions of attitudes) . Bivariate analysis (one-way analysis of variance, ANOVA) was used to assess differences between residents in different years of training, and between countries and specialty groups. To test direct effect of independent variables (gender, specialty, country of specialty, year of specialisation) as well as effect of their interactions, analysis of variance (ANOVA) with multiple factors was applied.

RESULTS

2842 participants from 12 countries completed the survey. Most respondents were from Spain (818) and France (653), followed by Slovenia (444), Italy (187), Portugal (154), and Greece (110). Other countries contributed less than one hundred respondents. Only responses from the countries with more than 100 participants were included in the further analysis.

The demographic data of the participants are presented in table 1.

Most respondents (1231) prescribed antibiotics at least once a day, 779 respondents prescribed antibiotics several times a week and only a minority (356) several times a month (N=2348).

More than one half of respondents prescribed antibiotic completely (14.6%) or at least in major part (39.6%) as told by the mentor. 45.9% participants prescribed antibiotics more or less on their own, 27% of them prescribed antibiotics completely on their own.

Young doctors claimed that their supervisors used the guidelines in 58% of cases, personal experience prevails in the others (N=2352).

Figure 1 shows the mean scores of the self assessed knowledge by the participants (scores from 1 to 5, 1 reflecting the lowest and 5 the highest knowledge).

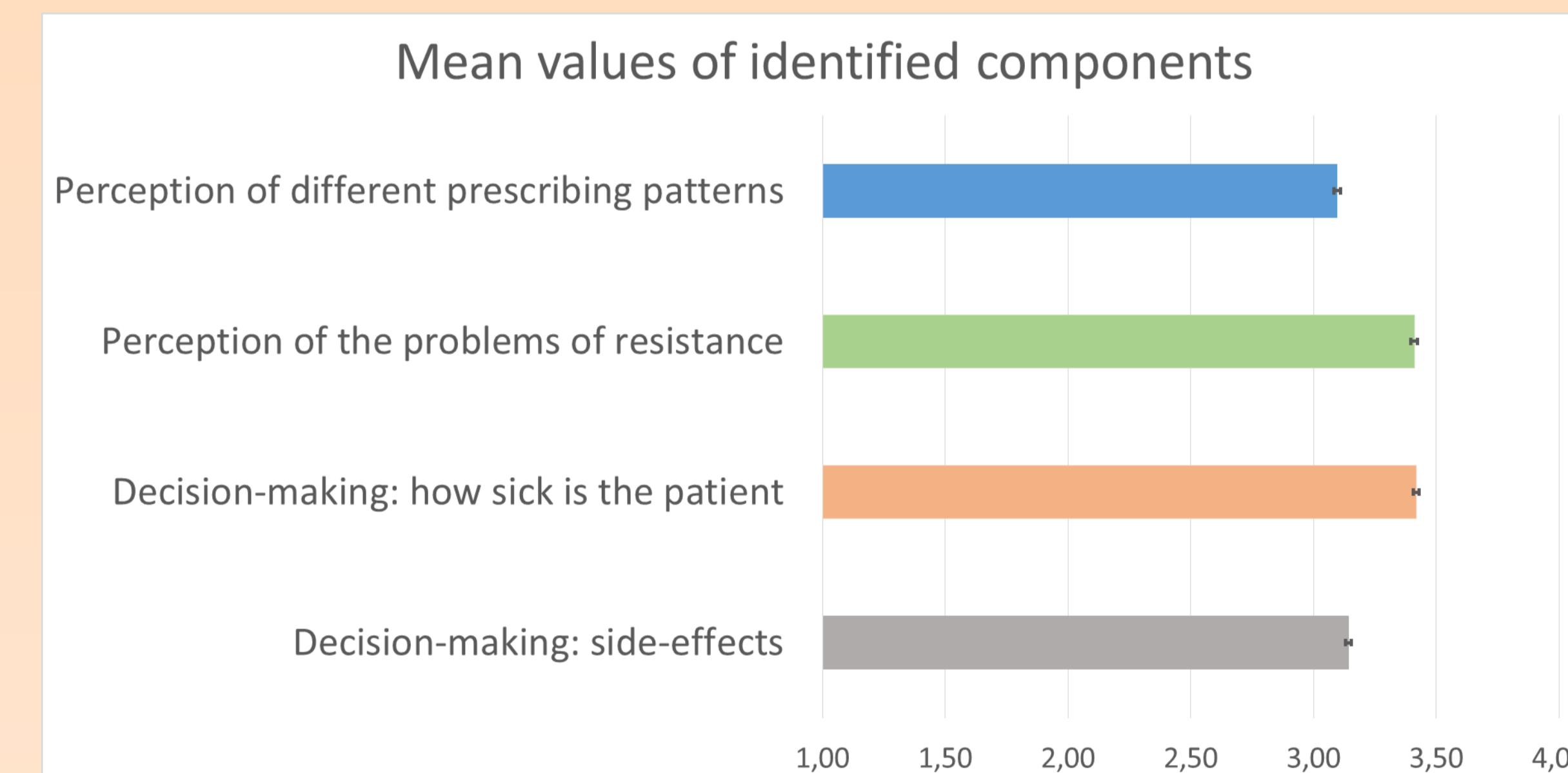
Figure 2 shows the average scores of the answers on the attitudes and perspectives (scores from 1 to 4, 1 meaning „strongly disagree, and 4 meaning „strongly agree“).

Principal component analysis identified five components: knowledge self assessment, decision based on severity of the disease, decision based on side effects, perception of the problem of resistance and prescribing patterns. Effect size of independent variables on the principal components is shown in Figure 3.

Table 1. Demographics of the participants

Variable	N	%
Sex		
male	833	37.2
female	1483	62.7
Year of training		
1 st	498	21
2 nd	536	22,7
3 rd	584	24,7
4 th	447	18,9
5 th and 6 th	301	12,7
Specialty group		
Family medicine	682	28,8
Internal medicine	637	26,9
Surgery	202	8,5
Anaesthesiology, intensive care and emergency medicine	180	7,6
Paediatrics	176	7,4
Infectious diseases, clinical microbiology and tropical medicine	161	6,8

Figure 2. The mean scores of the five main components (1 means „strongly disagree“, and 4 means „strongly agree“)



CONCLUSIONS

Almost one half of young doctors in training prescribe antibiotics at least partly on their own. Their mentors are perceived not to follow the guidelines in more than 40%. Self assessed knowledge is affected by the year of specialisation. For all other principal components that were identified in the survey (decision making based on side effects, or sickness of the patients, the perception of the problem of resistance and the perception of prescribing patterns on the wards), the main determinant is the country of specialisation.

Figure 1. Mean score of the participants assessing their own knowledge (scores from 1 to 5, 1 reflecting the lowest and 5 reflecting the highest knowledge)

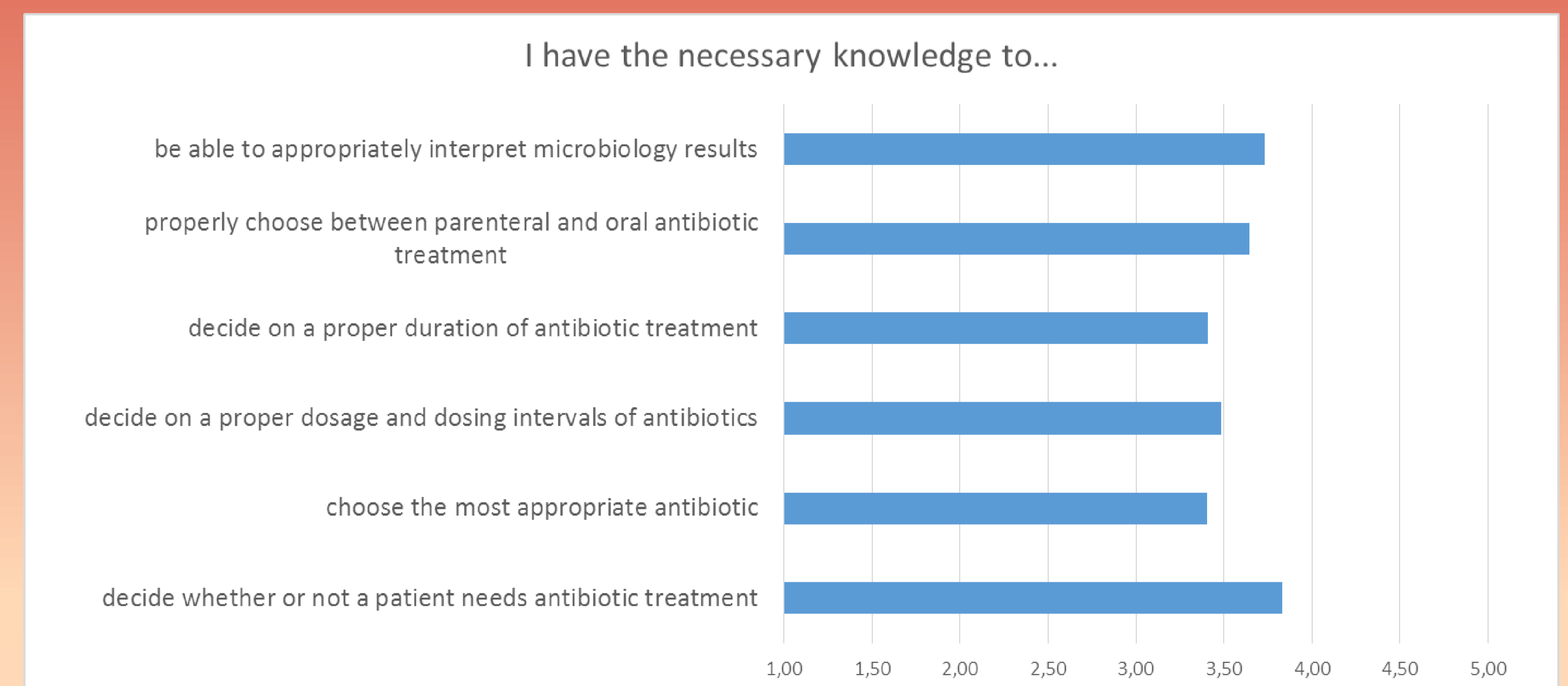


Figure 3. Effect size of the independent variables on the five principal components (ETA²)

