Which patients should receive a medication review? Variables associated with the identification of drug-related problems during medication reviews

Joke Wuyts, Joris Maesschalck, Isabelle De Wulf, Jan De Lepeleire, Veerle Foulon.

Background A medication review is a healthcare service intended to identify and resolve drug-related problems (DRPs). The challenge is to identify patients most at risk for DRPs and who would benefit most of a review by the community pharmacist.

Purpose To identify patient-, process- and pharmacist-related variables associated with the number of detected drug-related problems during a medication review.

Method This observational, cross-sectional study reports on the registered DRPs of patients in the SIMENON study. In the SIMENON study, 56 community pharmacists provided an intermediate medication review to 453 aged polymedicated ambulatory patients. Using univariate analysis, the relationship between the number of DRPs and 14 patient- (3 demographic, 8 medication-related and 3 clinical variables), 8 process- and 8 pharmacy-related variables was investigated. Secondly, a multiple negative binomial regression model was build using a forward stepwise approach with the significant variables ($p < 0.05$). No imputation was performed for missing data.

Findings The participant's median age was 79 years and the median number of chronic drugs was 8. A median of 3 DRPs per patient were registered (range 0-10) and only for 11.7% of patients, no problems were handled. The univariate analysis identified 3 patient-, 4 process- and 5 pharmacist-related variables to be significant risk factors for more detected DRPs. Variables included female gender, living alone and a higher number of chronic drugs. Significant process variables were: interviews on appointment, use of an explicit medication appropriateness tool, duration of the interview and of the analysis. Five significant pharmacist-related variables were: years of experience, previous knowledge or experience with medication review, number of medication lists constructed last year, participation to a study workshop and province. The preliminary multiple regression model to predict the number of DRPs contained six variables: number of chronic drugs, duration of the interview and analysis, use of an explicit appropriateness tool, participation to a study workshop and previous experience with the topic.

Conclusion This research provides insights into the variables playing a significant role in the detection of DRPs by the community pharmacist. Literature confirms the identified patient variables such as female gender, living alone and drug count. Literature also found age to be a relevant variable, but this could not be confirmed in this study with already high-aged patients. In addition, process- and pharmacist-related variables also significantly influenced the number of registered DRPs. Future research will optimize the regression model and assess its predictive value.