

Perception of the benefits of an automated and personalized complexity analysis by general practitioners and patients

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Background An electronic tool analyzing and optimizing the complexity of drug treatment was prospectively evaluated in a pilot study (HIOPP-6; funded by the Innovation Fund of the Federal Joint Committee, Grant number: 01VSF16019) with general practitioners (GPs). Thereby the full tool (consisting of an automated analysis of complexity factors amended by an appraisal of each identified factor by the patient; Group 1 (G1)) was tested against a version of the tool that was restricted to the automated analysis and, thus, did not consider the patient's perspective (Group 2 (G2)).

Purpose To evaluate the perception of GPs and patients concerning the benefits of an electronic tool in analyzing and reducing complexity of drug treatment.

Method GPs were asked to evaluate each optimization measure (consisting of 1 to 4 single recommendations) proposed by the electronic tool based on the analysis on whether it was helpful or not as well as every analysis with the tool on whether it mitigated complexity of drug treatment for their patients or not. All answers were stored electronically in the tool. Additionally, all patients were asked to fill in a paper-based questionnaire to assess their perception of the benefits of this study.

Findings In G1, a total of 111 optimization measures were proposed by the tool after the personalization of the automated analysis and, thus, evaluated by the GPs, whereas 628 optimization measures were proposed and evaluated in G2 as a result of the exclusively automated analysis. In G1, 90.1 % of the optimization measures proposed were rated helpful, compared to 17.8 % of the optimization measures in G2 ($p < 0.001$). Furthermore, GPs expected that 85.4 % (41/48) of the analysis performed in G1 indeed mitigated complexity of drug treatment for patients, but only 34.9 % (15/43) of the analysis in G2 ($p < 0.001$). In total, 85 patients (G1: 45, G2: 40) returned the feedback questionnaire (return rate=93.4 %). More than two thirds of patients stated that they wished that complexity of their drug treatment would be analyzed again in the future, however, there was no statistically significant difference between the groups (G1: 66.7 %, G2: 70.0 %, $p = 0.696$).

Conclusion GPs rated the optimization measures proposed as well as the overall analysis more often as helpful when the patients' perspective was considered. In contrast, the way complexity of drug treatment was assessed did not influence patients' perception of the benefits, who rated the analysis of complexity in both study groups equally positively.