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The Pharm-DISC System

Documentation and classification of drug-
related problems and pharmaceutical
interventions in community pharmacies

Master Thesis

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Abstract

Background: A classification system for drug-related problems (DRPs) and pharmaceutical interventions (GSASA system [1]) was introduced to several Swiss hospitals in 2011, whereas, there is no comparable tool implemented in Swiss community pharmacies. Developing such a classification system with similar structure could be helpful to standardized documentation and to promote mutual information in seamless care [2]. In a previous study, a first version, based on the GSASA tool, was developed (containing the categories Problem, Type of problem, Cause of the intervention, Intervention, and Outcome) and validated with fifth-year pharmacy students [3]. After refinement with the aid of a focus group interview, the aim is now to validate the new version.

Objectives: The objectives were to validate the Pharm-DISC (Documentation of Interventions in Seamless Care) system in terms of inter-rater reliability, appropriateness, interpretability, validity, feasibility, and acceptability, and to define facilitators and barriers for its implementation, as well as to create a final version for that purpose.

Methods and setting: A two-centered observational study was conducted in community pharmacies in the German- and the French-speaking part of Switzerland. After an online training, 21 participating pharmacists during a 5-week period selected 5 days on which they collected 30 prescriptions with an intervention due to a DRP and classified them by using the Pharm-DISC system. Afterwards, the documented and classified interventions were analyzed to evaluate of the appropriateness, interpretability, and validity. The inter-rater reliability was determined and Fleiss's kappa coefficients were calculated. The feasibility and acceptability was tested with 4-point Likert scale (1=not true, 2=rather not true, 3=rater true, 4=true) by a 48-item questionnaire on the user's satisfaction. The facilitators and barriers for the implementation were qualitatively analyzed.

Main outcome measure: The user satisfaction, number of completely classified interventions, inter-rater reliability (Fleiss's kappa coefficient), and pharmacists' suggestions.

Results: Average inter-rater reliability was substantial ($\kappa=0.66$). The agreement amount of the Pharm-DISC users was substantial for category Problem ($\kappa=0.72$), Cause of the intervention ($\kappa=0.64$), and Intervention ($\kappa=0.79$), and almost perfect for category Type of problem ($\kappa=0.86$). However, the category Communication ($\kappa=0.29$) reached fair agreement. Of 519 interventions analyzed, 430 (82.9%) could be completely classified in all categories. The users found the system complete or comprehensive [median user agreement 3 (2/3.25 quartiles)], easy to use [3 (2.75/3 quartiles)] and were in general satisfied [3 (2/3 quartiles)].

Conclusion: The validation of the new classification system was successful. It was found to be independent of the rater. Of all the documented DRPs and interventions, most were completely classified. Although there were some suggestions for improvement, the pharmacists were satisfied with the new tool and felt that it was easy to use and practical for daily work.

Key words: Classification system, drug-related problems, pharmaceutical interventions, community pharmacies, pharmaceutical care, clinical pharmacy