

Drug- related problems in community pharmacies

Development and validation of a classification system

Master thesis

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Persons in support

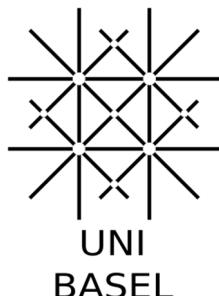
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Abstract part 1

Background and Objective

Over 20 years ago, the documentation of drug-related problems (DRPs) using specific classification systems began. Since then, several classification systems have been developed and validated to some extent. Our objective was to update a table proposed by Van Mil et al.⁹ in 2004, which shows an overview of classification systems for drug-related problems.

Setting and Method

A systematic literature search using three databases (Medline, Embase and Web of Science) was performed. With a suitable keyword combination it was searched for appropriate literature. The four prerequisites for a final hit were: classification system for DRPs, development of a new classification system, English or German literature, full text available. A filter was used, which includes literature only published between 2004 and 2014. First, all abstracts were read and checked for relevance. If a publication seemed to suit, a full text analysis was done. Doublings were manually evaluated.

Results

Overall the systematic literature search resulted in 111 hits (6 from Pubmed, 74 from Embase and 31 from Web of Science). Eight final hits could be isolated: APS-Doc, DOCUMENT, SFPC, Norwegian classification system, Coding system, PIO-System, modified PCNE classification system, and a modified PI-Doc classification system. Almost all of them are validated and have an “intervention” category. All evaluated final hits show a hierarchical structure.

Conclusions

The update of the proposed table by Van Mil et al.⁹ was successful. Nowadays classification systems for DRPs are very relevant and attract interest. Referring to the results, it seems like the validation process has grown in importance and has become a prerequisite for the implementation. Almost all latest classification systems include a category dealing with interventions.

Abstract part 2

Background and Objective

The Swiss Society of Public Health Administration and Hospital pharmacists (GSASA) introduced a new classification system for pharmaceutical interventions in Swiss hospitals in 2011. This instrument, developed and validated in previous researches^{4,5}, included five main categories (detected problem, type of problem, Cause of intervention, Intervention and Outcome of intervention). Our objectives were to develop and validate a classification system for pharmaceutical interventions on the basis of the GSASA classification system to suit community pharmacies.

Setting and Method

We conducted a 6-weeks trial (prospective observational study) with 5-year pharmacy students ($n=77$) from the University of Basel. After training they collected 10 hospital discharge prescriptions and primary care prescriptions with an intervention. They documented drug-related problems (DRPs) and the following interventions with the classification system for pharmaceutical interventions. The new tool was validated concerning following criteria: appropriateness, interpretability, validity, acceptability, feasibility and reliability. To evaluate acceptability and feasibility, the students completed a 10-item questionnaire, which was judged with a 5-point Likert scale (1= completely disagree, 5= completely agree). The students classified 3 standardised cases with the new tool to assess interrater reliability. Interrater reliability was calculated using Fleiss Kappa- statistics.

Results

Overall 826 intervention forms were received and analysed whereas 101 had to be excluded from the study, because they were deficient. Thus 725 remained for the data acquisition. The return rate of the questionnaire was (98.7%). Nineteen out of 76 (25.0%) students agreed or completely agreed that the new tool is easy to use and practical (mean user agreement 2.92 ± 0.96). Twenty-four out of 76 (31.6%) students agree or completely agree that they are satisfied with the new tool (3.07 ± 1.02). Regarding the interrater reliability, the agreement of the five categories, A Problem ($k= 0.53$), B Type of problem ($k= 0.70$), C Cause of the intervention ($k= 0.45$), D Intervention ($k= 0.76$) and E Result of the intervention, are reliable.

Conclusions

The new validated classification system for pharmaceutical interventions, adapted for community pharmacies, provides a good basis for data acquisition and clearly documents the interventions of pharmacists. All interventions and almost all DRPs could be classified with the new tool. However, there is a need for improvements. The classification system should be revised and partially validated again.