Marcello von Planta

B.Sc. Pharmaceutical Sciences, Informatiker

Masterarbeit

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Entwicklung und Evaluation einer Medikamentendatenbank zur Verwendung mit dem Lerntool „pharmApp"

Pharmaceutical Care Research Group
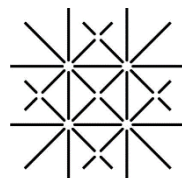
Universität Basel

Betreuer

Samuel Allemann, M.Sc., eidg. dipl. Apotheker

Nadja Stohler, eidg. dipl. Apothekerin

FPH Klinische Pharmazie

Prof. Dr. Kurt Hersberger

UNI
BASEL

Abstract

Background
PharmApp is a web-based learning tool. It can display questions in terms of conventional flash cards or in the form of randomly generated questions. Students particularly asked for the integration of drug-related contents in pharmApp. Several studies have shown a positive learning effect of students studying with mobile gadgets with e-learning or m-learning (mobile learning) implementations. There is no comparable study that examines the learning effect of pharmApp.

Objective
The development and evaluation of a drug database for use with pharmApp.

Methods
A web-based survey was conducted in order to examine learning needs and learning experiences of current final year and former pharmacy students. A drug database consisting of 300 specialities was developed and the field nervous system with 60 drugs was validated, verified and finally integrated in pharmApp. A randomized, controlled pilot study was conducted to evaluate the learning effect of students studying with pharmApp (pharmApp group) and students studying conventionally (control group). The learning effect was measured with a test before and after a two-week learning interval and statistically evaluated with a Wilcoxon-Mann-Whitney test.

Results
The results of the evaluation of the learning needs and learning experiences show potential learning needs for the preparation for the federal examination in pharmacy, especially in the field of drug knowledge, as well as for the final 5th year of pharmacy studies and the study of galenic forms. The results of the pilot study determining the learning effect (n=24) show that in comparison with the pre-test, both groups show significantly better results ($p < 0.01$). However the students studying in a conventional way (control group) have significantly outscored (+29.3% in relation to the mean of both groups) the students in the pharmApp group (p=0.04).

Conclusion
PharmApp is a web-based learning tool. A pilot study was conducted to evaluate the learning effect of students studying with pharmApp (pharmApp group) and students studying conventionally (control group). The student questionnaires have yielded that pharmApp is perceived as a valuable tool to check existing knowledge. PharmApp can therefore also be useful for graduates of pharmacy or other subjects who desire to keep up or expand their knowledge both of their own and other fields. The statistically improved score of the pharmApp group in the post-test is smaller than that of the control group. Furthermore, the improvements of the pharmApp group are to be put into perspective to the effect that most of their study participants used additional tools for the test preparation. A positive learning effect for the pharmApp group is not to be excluded but of difficult interpretation under these circumstances. Further studies are needed to get more accurate results. A promising approach to the further development of pharmApp may be the integration of an intelligent, adaptable learning mode.