Implementation of an OBJECTIVE STRUCTURED CLINICAL EXAMINATION and Evaluation Checklists at an Institute of Clinical Pharmacy

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Background and Objectives

OSCE, i.e. objective structured clinical examination has proven to be a reliable and valid tool for assessing communication skills of medical students. As the practice-oriented education of pharmacy students is introduced in the curriculum of clinical pharmacy, the assessment of training success has also to be re-structured. Up to now, there are very few only voluntary-based OSCEs being performed at the faculties of pharmacy in Germany.

The objective of this study was the implementation of a reliable and valid OSCE - using self-developed evaluation checklists - for pharmacy students at the University of Mainz.

Material and Methods

38 students - in the 6th semester of their pharmacy studies - participated in the OSCE during the summer term of 2014. The students' training success was assessed by experts (pharmacists) using self-developed evaluation checklists. Figure 1 represents the checklist for the inhalation unit. The checklists are identical except for the pharmaceutical content which depended on the examination unit. Points would be awarded by the evaluator if the student used the appropriate communication and solved the pharmaceutical problem ("yes" = 1 point; "no" = 0 points). If there was no distinct separation between "yes" and "no" possible the scoring system gave multiple choices for the evaluator by using check boxes (as seen in Table 2). At the end of every checklist the evaluator had to assess the communication skills of the student. The student was awarded 0.5 points for every checkmark at positive associated words (e.g. the costumer felt understood). For a checkmark at a negative associated word the student lost 0.5 points.

The reliability of the checklists was analysed by inter-rater agreement (kappa). Post-hoc all six experts evaluated separately the performance of six students at six different OSCE examination units (insulin administration, inhalation, compliance, interaction, over-the-counter medications, drug information), which was video recorded during the OSCE. Figure 2 shows the examination unit inhalation.

Table 1: Scoring system of the quality of communication and the questions by using check boxes (1-0 points)

☐	☐	☐	☐
1	0,75	0,5	0
good	middle	bad	very bad

Figure 2: OSCE-examination unit inhalation, the student , the performer (customer) and the evaluator (from left to right)

Results

According to the results of the evaluation checklists 36 students (95%) passed the exam. The overall medium inter-rater agreement regarding the six units was moderate (κ=0.49). The highest inter-rater agreement was registered for the insulin administration (κ=0.83) and the lowest inter-rater agreement was found at the interaction check (κ=0.22). Table 2 shows the inter-rater agreements of all units.

Table 2: Inter-rater agreement of the six examination units

Examination units	Inter-rater agreement	
	Kappa (95% CI)	Classification
compliance	0.44 (0.30-0.58)	moderate
drug information	0.26 (0.18-0.39)	fair
inhalation	0.64 (0.50-0.78)	substantial
insulin administration	0.83 (0.70-0.96)	perfect
interaction	0.22 (0.09-0.36)	fair
over-the-counter medications	0.52 (0.38-0.65)	moderate

Figure 1: OSCE-Examination , Checklist - Inhalation

Conclusion

The design of the OSCE proofed to be favourable and the developed evaluation checklists turned out as a reliable fair assessment tool for communication skills in clinical pharmacy at the University of Mainz.