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## The development of model and measuring tool for specialists accreditation in area of public health services

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### Abstract

© Authors. The main purpose of the paper is to present some theoretical approaches and some methods providing assessment optimization in specialists' accreditation in area of public health services. The results of research presented in this paper, include the model of multistage adaptive measurements and two methods for reliability and validity analysis, providing high justice decisions in accreditation and corresponding to requirements in High-Stakes Testing procedures. The assessment optimization intends for minimization time of assessment and for reliability and validity data increasing. For optimization the special model of measurements based on multistage adaptive testing is offered. The using of offered model in assessment design allows to realize the advantages of traditional adaptive testing and linear testing, while minimizing their disadvantages. So, this model is recommended as dominating for assessment in accreditation. For validity increasing in assessment in accreditation the approach based on Structural Equation Modeling is offered. This method allows to analyze the significance of relations between observed and latent variables that have any interpretation as causal effects, and to construct the model of their relations. The example of model of casual relations between disciplines, latent variables (competencies) and factors is offered. The model helps to increase construct and content validity of measuring tool using in public health services accreditation. The methods of reliability estimation in multistage measurements, offered in paper, has innovative character. It has branching structure as the value of reliability in multistage measurements depends not only on reliability of separate stages, but also from correlations between them. The presented approaches allow to increase validity and reliability of decisions in public health services specialists' assessment or in other spheres of assessment during accreditation.

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### Keywords

Adaptive measurement, Assessment, Reliability, Structural equation modeling, Validity

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