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# Development of an Instrument for Preceptor Evaluation of Medical Graduates' Performance: the Psychometric Properties

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## Abstract

**Background** A preceptor has a key role in evaluating medical graduate's performance in the clinical setting. This study is conducted to develop an instrument for preceptor evaluation of medical graduates' performance in the clinical setting.

**Method** A mixed-method study design, sequential exploratory approach was chosen to develop the instrument. Initial semi-structured interviews were conducted with 4 preceptors at the teaching hospitals. Five main themes emerged from the interviews. The themes were developed into a 23-item questionnaire. Nineteen Head or Assistant Head of clinical departments were asked to review the relevance of the content. The questionnaire was later sent out to 34 preceptors and 35 paramedic staffs to participate in the construct validity study by conducting exploratory factor analysis (EFA). SPSS version 21 software was used to analyze the data and Varimax rotation method was performed to simplify and describe the data structure.

**Result** Review of the factor structures suggested that the most appropriate fit was 5 factors. Most of the questionnaire items were relevant to assess performance (4.65 + 0.15), except in item 4 of the clinical skill factor. The 23 items of the evaluation instruments showed that five factors were extracted which explained 73.9% of the variance between them. Construct validity was achieved after the instrument was run for an iteration of eight times, with Cronbach's alpha of 0.951.

**Discussion** The instrument has achieved the desired content and construct validity score. It can be used by other institutions to assess their medical graduates' performance in the clinical setting.

**Keywords** Construct validity · Content validity · EFA · Preceptor

## Introduction

The clinical phase is important for medical graduates to develop their professional behavior [1]. The development of

their professional behavior can be assessed by medical teachers who can also act as preceptors. There are quantitative [1, 2] and qualitative measures to assess professional behavior as a medical graduate's performance [3]. This study describes the development of a quantitative instrument to measure medical graduate's professional behavior in the clinical setting.

A mixed-method research design using a sequential exploratory approach was chosen to answer the following research questions: "What factors are deemed important in assessing medical graduates' performance from the preceptors' perspective?"

In this sequential exploratory approach, the initial qualitative study findings provide crucial information for the development of the quantitative tool or instrument. The quantitative data could then be used to confirm or generalize the qualitative findings [4–6]. The purpose of this qualitative study was to investigate what factors were perceived by preceptors as essential in the development of professional behavior among medical graduates.

Validity and reliability studies were necessary before the instrument can be used to measure medical graduate's

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