

FROM CONCEPT TO CONFIRMATION: A METHODOLOGICAL JOURNEY IN DEVELOPING A DIABETES BEHAVIOURAL DIAGNOSIS INSTRUMENT

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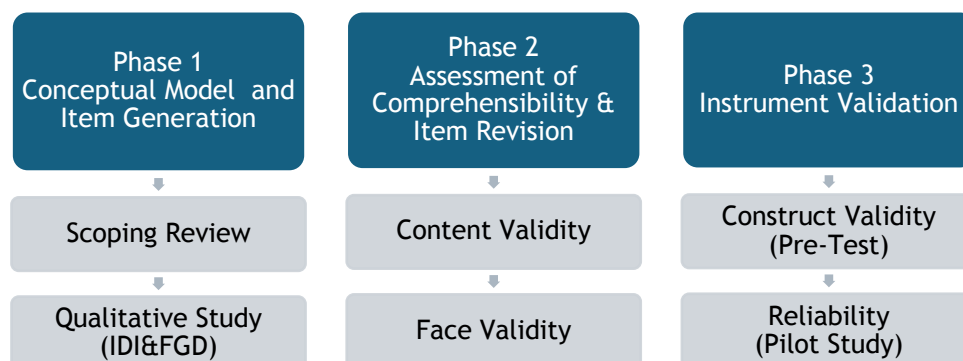
Introduction

Diabetes management is strongly influenced by patient behaviours. Malaysia's multi-ethnic, multilingual context demands culturally tailored tools. Psychosocial and behavioural factors significantly influence diabetes management, yet culturally tailored assessment tools remain limited. This paper aims to describe a method of collecting data develop and validate a reliable instrument to assess psychosocial and behavioural aspects among patients with type 2 diabetes mellitus (T2DM) in Malaysia.

Methods

The study was conducted in three phases. Phase 1 involved preliminary item generation through literature review, in-depth interviews with patients, and focus group discussions with healthcare professionals. In Phase 2, content and face validity were evaluated by five subject matter experts (SMEs) and 30 T2DM patients. Phase 3 included a pre-test (n=201) and pilot study (n=222) to assess the instrument's reliability and usability.

Table 1. Methodology phases in developing Diabetes Behavioural Diagnosis Instrument



Results

A comprehensive, multi-phase approach was used to develop and rigorously validate a new instrument, resulting in a reliable and well-structured tool with strong psychometric properties. Content validity was first established to ensure instrument accurately measured all relevant aspects based on conceptual model, which accomplished through expert evaluation. The final instrument demonstrated strong content validity with expert agreement on item clarity and relevance. Following this, construct validity was supported by exploratory and confirmatory factor analyses, revealing a clear factor structure which two for the information domain, four for motivation, and six for behaviour. To improve the instrument's psychometric properties of the final instrument, four items with factor loadings below 0.60 were removed. Finally, the instrument's internal consistency was assessed with Cronbach's alpha values ranging from 0.562 to 0.876 indicating acceptable to high reliability across all domains.

Discussion

This study developed and validated the Diabetes Behavioural Diagnosis Instrument (DBDI) to assess psychosocial and behavioural factors in Type 2 diabetes self-management in Malaysia. Using in-depth interviews with patients and focus group discussions with healthcare providers, the instrument was constructed within the Information-Motivation-Behavioural (IMB) framework. The final DBDI comprised three domains: Information, Motivation, and Behavioural practice. Exploratory factor analysis indicated good internal consistency, although 18 information items were removed due to low factor loadings, possibly reflecting difficulty in understanding technical terms. The COVID-19 pandemic limited the intended nationwide sampling, which restricted broader testing of the instrument. Despite these challenges, the DBDI demonstrated sound psychometric properties and offers practical value for healthcare providers to identify behavioural patterns and plan tailored interventions. Further research is recommended to evaluate its applicability across wider populations and settings.

Keywords: Type 2 diabetes, psychosocial assessment, behavioural intervention, instrument development, validation