

Transnational, cross-cultural adaptation and validation of the gestational diabetes mellitus Knowledge Questionnaire in Western Cape, South Africa: a cross-sectional study

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Background: Improved knowledge of gestational diabetes mellitus (GDM) is associated with improved perinatal outcomes. Knowledge assessment in woman with GDM is therefore vital. To the best of our knowledge, there is no appropriate instrument available in South Africa to assess the knowledge of GDM among antenatal women.

Objective. To ascertain the validity and reliability of the translated and cross-culturally adapted South African English, Afrikaans, and isiXhosa versions of the original Malaysian GDM Knowledge Questionnaire (GDMKQ).

Methods: A mixed-method study was conducted. The original Malaysian GDMKQ was cross-culturally adapted and translated into English, Afrikaans, and isiXhosa. Psychometric testing included face and content validity, internal consistency, and test-retest reliability.

Results: Nine experts and a total of 30 participants were enrolled to participate in phase 1 and 2 of the study. The mean age of the participants was 32.93 (SD 0.85) years in phase

1 and 31.83 (SD 5.54) years in phase 2, respectively. In the third phase of the study, 93 participants with a mean age of 32.35 (SD 4.96) years were enrolled. During cross-cultural adaptation the GDMKQ underwent four rounds of revision until consensus was reached. The cross-culturally adapted English, Afrikaans and isiXhosa South African GDMKQ demonstrated good face and content validity. Kappa values ranged between Kappa (SE), -0.03 (0.18) to 0.89 (0.13) for the English version, Kappa (SE), -0.07 (0.18) to 0.53 (0.13) for the Afrikaans version and Kappa (SE), 0.28 (0.18) to 0.87 (0.17) for the isiXhosa version respectively. Cronbach alpha for the individual questions ranged from 0.31 to 0.90, while correlation between overall scores was $\rho=0.79$ ($p<0.001$).

Conclusion: While the translated and cross-culturally adaptation South African English, Afrikaans and isiXhosa versions of the GDMKQ were feasible, acceptable and easy to comprehend, more research is required to make the tool more valid and reliable.