Title:
Psychometric Evaluation of the Patient Health Questionnaire-9 Depression Scale in the Korean Population

Eun-Hyun Lee, PhD
Graduate School of Public Health, Ajou University, Suwon, Korea, Republic of (South)
Seung Hei Moon, MSN
Inha University, Incheon, Korea, Republic of (South)
Jung Hee Cheio, MPH
Uiwang-si Community Mental Health Center, Uiwang-si, Korea, Republic of (South)
Eun Suk Park, MPH
Gunpo-si Community Mental Health Center, Gunpo-si, Korea, Republic of (South)
Myung Sun Cho, MPH
Anyang-si community mental health center, Anyang-si, Korea, Republic of (South)
Jin Sil Han, MPH
Gimpo-si Community Mental Health Center, Gimpo-si, Korea, Republic of (South)
Soon Young Kim, MPH
Gyeonggi Community Mental Health Center, Suwon-si, Korea, Republic of (South)

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Abstract Summary:
The Korean version of the PHQ-9 yielded good psychometric properties (structural validity, convergent validity, known-groups validity, and internal consistency reliability). Therefore, the K-PHQ-9 appears to be suitable for use in both clinical research and clinical practice.
LEARNING OBJECTIVES

The learner will be able to understand the validation process of the instrument developed in other language.

The learner will be able to know that the PHQ-9 is culturally reliable and valid for the use in both Korean clinical research and clinical practice.

EXPANDED CONTENT OUTLINE

Two steps for the validation process will be provided: translation and psychometric steps.

The psychometric findings of the Korean version of the PHQ-9 will be provided.

Abstract Text:

**Purpose:** The Patient Health Questionnaire-9 is a short self-administered instrument consisting of nine items asking the presence of depressive symptoms. The purpose of this study was to assess the psychometric properties of the Korean version of the Patient Health Questionnaire-9 (PHQ-9-K).

**Methods:** The original English version of the instrument was translated into Korean using a forward and backward translation technique. A total of 324 participants were recruited from seven community health centers (n= 275 ) and two community mental health centers (n= 49 ) in South Korea. The participants were asked to complete a package of questionnaires: the PHQ-9-K, the Korean version of the Generalized Anxiety Disorder-7 (GAD-7-K), the Korean version of the Perceived Stress Scale-10 (PSS-10-K). The structural validity of the PHQ-9-K was tested using confirmatory factor analysis (CFA). The convergent validity was assessed with the GAD-7-K and PSS-10-K using the Pearson's correlations. The known-groups validity was evaluated by the mean difference between two groups (the group recruited from mental health centers who were diagnosed with depression vs. the group recruited from community health centers without the diagnosis with depression) using a t-test. Internal consistency reliability of the PHQ-9-K was assessed using Cronbach’s alpha.

**Results:** One-dimensional structural model of the PHQ-9-K fitted the data well: the ratio of $\chi^2$ to the number of degrees of freedom (CMIN/DF) = 3.52; standardized root mean square residual (SRMR) = .03; goodness-of-fit index (GFI) = .94; normed fit index (NFI) = .96; comparative fit index (CFI) = .97; root mean square error of approximation (RMSEA) = .08. As hypothesized, the PHQ-9-K was highly correlated with the GAD-7-K ($r = .91$, $p < .001$) and PSS-10-K ($r = .76$, $p < .001$), implying satisfied convergent validity. The PHQ-9-K was significantly higher for participants with depression disorder than for the non-depression participants ($t = 8.74$, $p < .001$, $d = 48.66$). The finding supported the known-groups validity of the PHQ-9-K was satisfied. The Cronbach’s alpha of the PHQ-9-K scales was .94, indicating excellent internal consistency reliability.

**Conclusion:** The study provided the excellent psychometric properties of the K-PHQ-9. Therefore, the K-PHQ-9 appears to be suitable for use in both clinical research and clinical practice. For further study, it is recommended to test the test-retest reliability of the instrument.