

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



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## 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.

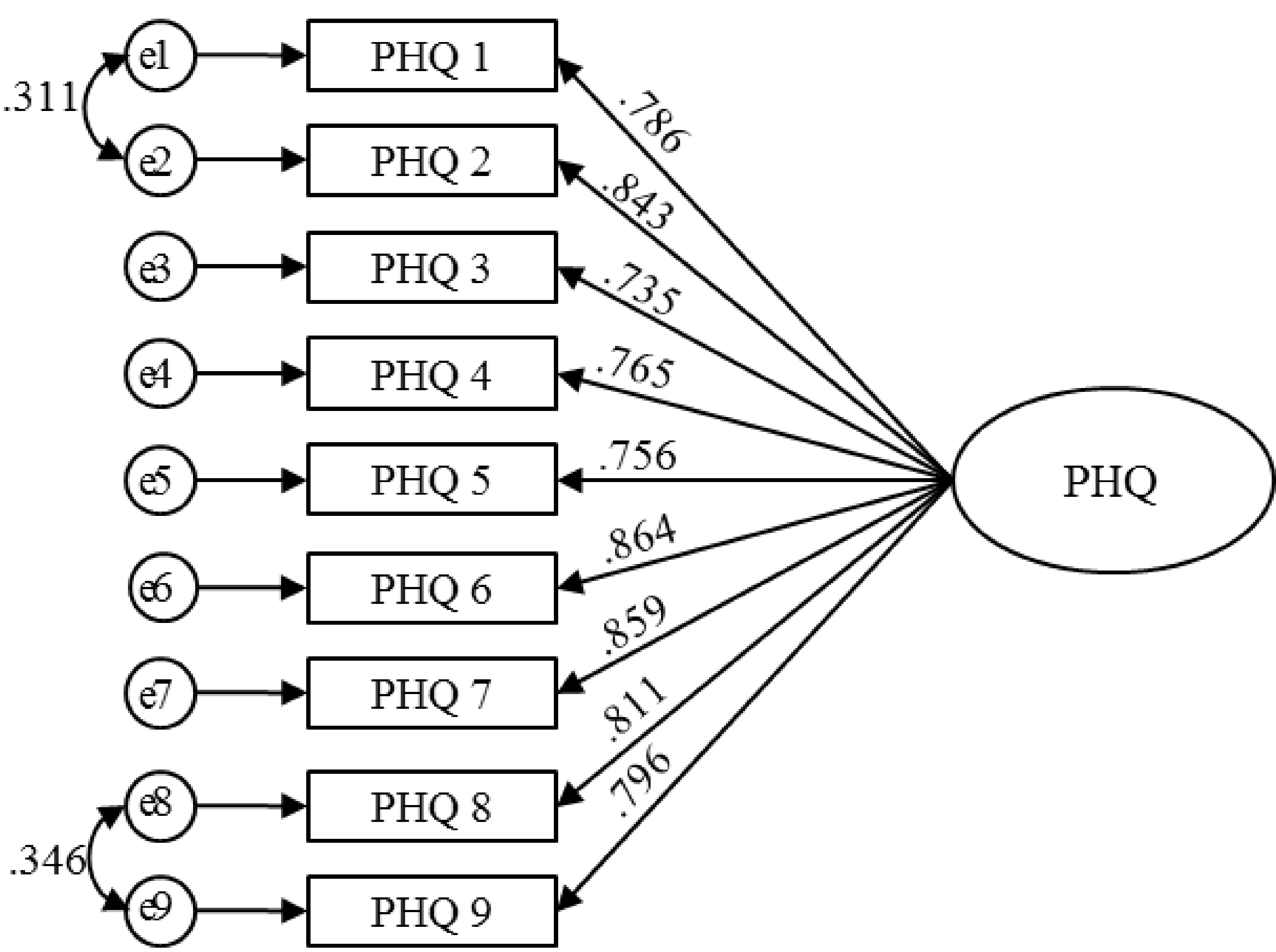


Figure 1. Confirmatory factor analysis for the PHQ-9-K

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 ( $t = 11.96, p < .001, d = 52.08$ ). The finding supported the known-groups validity of the PHQ-9-K was satisfied.

Table 1. Known-Groups Validity

	<i>n</i>	Mean (SD)	<i>t</i>
Group without depression disorder	275	17.08 (7.67)	11.96**
Group with depression disorder	49	3.71 (3.71)	

\*\* $p < .001$

The Cronbach’s alpha of the PHQ-9-K was .94, indicating excellent internal consistency reliability.

## CONCLUSION

The study provided the excellent psychometric properties of the PHQ-9-K. Therefore, the PHQ-9-K 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.