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Development and validation of a novel general medication adherence scale (GMAS) for chronic illness patients in Pakistan (Article) (Open Access)

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Abstract
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Objective: This study aimed to develop and validate a self-reporting adherence tool termed as General Medication Adherence Scale (GMAS) in Urdu language for measuring adherence toward medication use among Pakistani patients with a chronic disease. Methods: A month-long study (December 2017) was conducted in three tertiary health care settings of Karachi, Pakistan. The tool underwent content and face validity as well as factor analyses, i.e., exploratory, partial confirmatory and confirmatory factor analyses. Random sampling was conducted, and sample size was calculated using item response theory. The item-to-respondent ratio was 1:15. Fit indices namely normed fit index (NFI), Tucker Lewis index (TLI), comparative fit index (CFI), goodness of fit index (GFI), absolute goodness of fit (AGFI), parsimony goodness of fit index (PGFI), root mean square error of approximation (RMSEA), and standard root mean square residual (SRMR) were calculated. Additionally, estimation of the convergent, discriminant and known group validities, was conducted. Internal consistency was analyzed by test-retest reliability, McDonald's and Pearson correlation coefficient. The factor analyses were conducted using IBM SPSS version 22 and IBM SPSS AMOS version 25. Results: Content validity index (CVI) was reported at 0.8 (SD 0.147) and the tool was content validated with three hypothetical constructs. Factor analyses highlighted a 3-factor structure. The fit indices were calculated with satisfactory results, i.e., PGFI, GFI, AGFI, NFI, TLI, and CFI were greater than 0.9 and PGFI > 0.5. The values of RMSEA and SRMR were less than 0.07. A Cronbach's alpha value of 0.84 was obtained in reliability analysis. The test-retest Pearson's correlation coefficient value was reported at 0.996 (p-value < 0.01). Convergent and discriminant validities for all constructs and, known group validity for two constructs, were established. A high response rate of 91% was achieved in respondents. Patients without insurance coverage appeared to be low adherent compared to those with insurance coverage (p-value < 0.05). Non-comorbid patients were more likely to be highly adherent as compared to comorbid patients (p-value < 0.01). Conclusion: A novel tool GMAS was developed in Urdu language and was subsequently validated in patients with chronic diseases. Copyright © 2018 Naqvi, Hassali, Rizvi, Zehra, Iffat.

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