

Measuring Resilience Among Sri Lankan Healthcare Workers: Validation of the Brief Resilience Scale in Sinhalese and Tamil Languages

To the Editor,

Resilience is the capacity for adaptation and “bouncing back” in the face of adversity.^{1,2} It protects against mental health problems such as depression, anxiety, and stress and improves well-being.³ During the COVID-19 pandemic, there was a growing need for studies on protective factors in mental health, such as resilience, particularly among healthcare workers.⁴ Psychometric assessment of resilience is a prerequisite for research in this area. A review of 19 resilience scales found a wide variation in their psychometric properties, with all of them posing some challenges.⁵ However, the authors noted that the Resilience Scale for Adults, Brief Resilience Scale (BRS), and the Connor-Davidson Resilience Scale had the finest psychometric ratings.

BRS may have an exceptional place in behavioral research because other resilience scales tend to assess resources that promote resilience rather than resilience itself. BRS is probably the only measure to assess resilience in its most basic meaning—the ability to “bounce back.”² Furthermore, among resilience scales, BRS is short and, therefore, would generate better response rates in research. As BRS was not available in local languages, its validation into Sinhalese and Tamil languages was needed to enable research on resilience in Sri Lanka.

Methods

Approval was obtained from the Ethics Review Committee. The procedure for questionnaire translation followed the recommendations of Beaton et al. (2000).⁶ Firstly, BRS was translated into each local language (Sinhalese and Tamil) independently by two bilingual experts, and a consensus translation was prepared. The translated version was back-translated into English by two independent bilingual translators. They were compared with the original BRS for semantic, idiomatic,

experiential, and conceptual equivalence by a group of experts comprising several Sinhalese- and Tamil-speaking psychiatrists, bilingual experts, and a methodologist. A few phrases in the original English version, such as “bounce back” and “snap back,” were replaced with conceptually equivalent phrases in the local languages. Face and content validity were discussed, and a consensus translation was prepared. After conducting a pre-test and cognitive debriefing with a purposive sample of 10 healthcare workers for each language, and further minor modifications, the translated scales were administered to 150 Sinhalese- and 110 Tamil-speaking healthcare workers (nurses, doctors, and other categories), after obtaining informed consent (see **Table S1** for the sociodemographic profiles; the translated questionnaires are provided as supplementary files). Confirmatory factor analysis (CFA) was used to test the model fit for the one-factor structure of BRS,² using the following fit indices: comparative fit index (CFI), Tucker Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA). Depression, anxiety, and Stress Scale -21 (DASS-21) was administered to test expected inverse correlations with resilience.

Results

According to CFA, the six-item BRS formed a unitary construct, with satisfactory model fit for both the Sinhalese (CFI = 0.99, TLI = 0.99, RMSEA = 0.09, SRMR = 0.05) and Tamil versions (CFI = 0.98, TLI = 0.97, RMSEA = 0.14, SRMR = 0.07). Factor loadings of individual items ranged from 0.59 to 0.86 in the Sinhalese and 0.61 to 0.82 in the Tamil version (see **Table S2** for item-level statistics). Cronbach alpha of the Sinhalese and Tamil BRS were 0.82 and 0.80, respectively, indicating good internal consistency. Removal of any single item did not significantly improve internal consistency. The Sinhalese BRS score had significant negative correlation with depression ($r = -0.29, P = 0.002$), anxiety ($r = -0.27, P = 0.005$), and stress ($r = -0.20, P = 0.033$), whereas the Tamil BRS score had significant negative correlation with anxiety ($r = -0.18, P = 0.028$) and stress ($r = -0.25, P = 0.002$) but not with depression.

Discussion

Our findings support the construct validity and internal reliability of the BRS as a measure of resilience. The one-factor structure proposed by the original developers² and replicated in subsequent studies⁷ was observed in the present study. BRS has been previously translated and validated in several languages, including German, Polish, Spanish and Dutch.⁷⁻¹⁰ Similar to the observations in the original validation sample² and the Spanish validation,⁷ resilience, as measured using BRS, showed significant inverse correlations with depression, anxiety, and stress in the present analysis. This provided further support for its construct validity through hypothesis testing. The absence of a significant inverse correlation of the Tamil BRS score with depression may be due to the comparatively small sample size available for the Tamil validation.

Although our findings were based on healthcare workers, we expect the scale's validity to extend to the general population. Thus, the Sinhalese and Tamil BRS can be used in future large-scale research on resilience in Sri Lanka. As high rates of mental health issues were reported among healthcare workers in Sri Lanka during the COVID-19 pandemic,¹¹ and the country is currently going through an unprecedented economic crisis, it is important to take measures to enhance resilience among Sri Lankan healthcare workers. The availability of a validated tool in both Sinhalese and Tamil languages would enable research on mental health and resilience among culturally-diverse populations in Sri Lanka, which would provide useful information to guide health policy development. Limitations of this study include the small sample sizes and the lack of test-retest reliability assessments to ascertain the temporal stability of the BRS scores.

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Data Archiving

The dataset generated and analyzed during the current study are available from the corresponding author on reasonable request.

Declaration of Conflicting Interests

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Service Bond and Rural Mental Healthcare in India in the 21st Century: Why We Stand Here?

To the Editor,

The rural population, which constitutes more than two-thirds of the population of India, has high mental healthcare needs. As per the National Mental Health Survey (2015–2016), the treatment gap for psychiatric disorders is close to 85%.¹ It also assessed the availability of mental health resources, infrastructure, and supportive frameworks and found gross deficits in all



the domains involved in the provision of mental healthcare.² With the vision to improve the quality of healthcare, including mental healthcare, in several Indian states, service bonds are made mandatory for getting medical degrees (undergraduate, post-graduate and super-specialty). This measure is expected to increase the mental health of human resources in public health and rural settings, as the psychiatrists are also bound to serve for the specified bond duration in different states. However, recent years witnessed significant challenges in effectively implementing this initiative, which we would like to highlight in this communication.