ASSESSMENT OF HEALTH-RELATED QUALITY OF LIFE IN RURAL POPULATION HEALTH RESEARCH

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Background: Health-related quality of life (HRQOL) is an outcome measure of growing interest in public health research and is concerning a person’s perceived health. Many different HRQOL assessments exist ranging in number of items, number of dimensions, and priority populations. Population health research often has the goal of administering large questionnaires to large amounts of participants, emphasizing the need for small scales. Furthermore, many existing national surveys administer standard health-related questions which, if validated properly, could be used to assess HRQOL.

Purpose: The aim of this study was to develop and validate a small HRQOL scale for rural adults using both classical and modern psychometric methods.

Methods: This study analyzed data from 2,430 rural adults participating in the 2012 Montana Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual cross-sectional survey of non-institutionalized U.S. adults 18 years of age and older. Three self-reported items (physical health, mental health, & general health) and one constructed index (CDC Healthy Days) for a total of four items were used to assess HRQOL. The following analysis plan was followed: 1) factor analysis, 2) internal consistency reliability, 3) Rasch analysis, 4) new HRQOL ability score construction, 5) participants description of the new HRQOL measure, and 6) validation of the new HRQOL measure by comparison with known health status groups.

Results: Results from factor analysis indicated a single factor model accounting for 53.5% of the total variance. Factor loadings ranged from .48 to .82 with the mental health item contributing the least to the factor. The internal consistency analysis showed that the four-item scale was moderately reliable (KR-20 = .70), however could improve (KR-20 = .75) if the mental health item was dropped. The Rasch assessment confirmed dropping the mental health item due to an Outfit MnSq statistic greater than 1.50. A final three-item Rasch assessment indicated good model fit, item separation, and item reliability. The Rasch HRQOL ability scores for individuals were transformed to T-scores for ease of interpretation - larger scores indicated better HRQOL. Adults who had suffered either a heart attack [M (SE): 43.6 (1.02) vs. 51.3 (0.28)], stroke [M (SE): 42.0 (1.44) vs. 51.2 (0.27)], COPD [M (SE): 43.0 (0.97) vs. 51.7 (0.28)], arthritis [M (SE): 47.2 (0.45) vs. 53.4 (0.31)], or depression [M (SE): 47.4 (0.60) vs. 52.0 (0.30)] had significantly lower HRQOL (p’s < .001) as compared to their healthier counterparts.

Implications: This study provides psychometric evidence for the use of a three-item (physical health, general health, & healthy days) HRQOL scale (HRQOL3) with rural adults. The simplicity of the scale and the widespread use of its items make the HRQOL3 a perfect choice for rural population health research.