

Strengthening HRQOL assessment in Singapore: Updated norms for EQ-5D-5L and EORTC QLQ-C30

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Health-related quality of life (HRQOL) is increasingly used as an important indicator of health outcomes for measuring the impact of illness and treatment among individuals with mental or physical conditions. The EuroQol 5-dimension (EQ-5D) questionnaire is one of the most widely used generic measures for HRQOL and estimating the quality-adjusted life-years gained for economic evaluations of health treatments and programmes. The original version EuroQol 5-dimension 3-level (EQ-5D-3L) questionnaire contains 5 items covering 5 dimensions of HRQOL using 3 response levels, while the new version EuroQol 5-dimension 5-level (EQ-5D-5L) questionnaire has been expanded to 5 response levels to improve its sensitivity and reduce the ceiling effects.¹ The scores from each dimension can be converted into an index score by applying country-specific value sets elicited from the general population. Given the lack of a gold standard in HRQOL measures, interpretation of the index scores requires population norm data as a reference point for identifying the burden of disease in patients with certain conditions or groups of patients. This can be done by comparing their profiles against an average person from similar characteristics, such as age and/or sex, in the general population.²

In Singapore, since 2013, the population norm data for the original version of EQ-5D-3L index scores—based on Singapore³ and UK⁴ preference weights—have been established and widely used in previous studies to assess health outcomes. In this issue of the *Annals*, Tan et al. provide updated population norms for the new EQ-5D-5L using Singapore preference weights.⁵ This study is timely, given that it has been more than a decade since the new version of the EQ-5D-5L was introduced by the EuroQol Group. Regrettably, population norm data for the instrument are not yet available for the Singapore population.

In a cross-sectional household survey of a representative sample of adult Singapore residents aged 21 years and above, Tan et al. found that the EQ-5D-5L index scores decreased with increasing

age, and are slightly lower in females than males and in non-Chinese populations than the Chinese group.⁵ The current findings are consistent with the previously published studies that established the population norm data for the original EQ-5D-3L index values based on Singapore and UK preference weights.^{6,7} The study also found that the mean EQ-5D-3L index scores decreased with increasing age, were lower among females than males, and were lower among other ethnic groups such as Indians and Malays compared to Chinese.^{6,7} These findings seem to suggest that the estimates generated by the 2 versions of the EQ-5D for the Singapore general population are similar and consistent over time. However, further longitudinal studies are needed to explore the consistency of the trends of HRQOL over time by these 2 instruments in this population.

The study by Tan et al. is also one of the first to provide population norm data for the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire-Core Questionnaire 30 (EORTC QLQ-C30) in Singapore.⁵ EORTC QLQ-C30 is a disease-specific measure commonly used to measure HRQOL in those with cancer, including lung, colorectal and breast cancer. The instrument contains 30 items covering 5 functional scales (15 items), 9 symptoms' scales (13 items) and 1 summary score for a global quality-of-life scale (2 items). The scores range from 0 to 100, with higher scores on the global quality-of-life scale indicating a higher level of HRQOL. The study shed light on the fact that the EQ-5D-5L was significantly correlated with all the EORTC QLQ-C30 subscales. These findings seem to suggest that generic and cancer-specific measures are measuring similar constructs of the HRQOL in the Singapore population. This finding is consistent with the earlier validation study by Luo et al., which also suggests that the EORTC QLQ-C30 was measuring similar dimensions of HRQOL as generic measures like the 36-Item Short Form Survey.⁸ The study by Tan et al. also highlighted that the mean of the global

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quality-of-life subscale was higher among those aged 45–64 years than both younger and older age groups. This curvilinear relationship between the scores and age could be attributed to many factors including the ever-increasing healthcare and living costs in Singapore, which affects older adults more because of their greater healthcare needs and diminishing income compared to younger adults.⁵ However, future longitudinal research is needed to explore the underlying mechanism of this association using more complex analysis including mediation analysis.

One of the key strengths of this study is that it was conducted using a representative sample of the adult population in Singapore and utilised marginal means from multivariable linear regression models to adjust for confounding in generating population norm data. This makes the estimates generalisable to the multiethnic local population. Hence, future studies are encouraged to use this normative data as a benchmark for comparison and to further examine the HRQOL within different subgroups of the population.

Ethics statement

Not applicable.

Declaration

The authors declare there are no affiliations with or involvement in any organisation or entity with

any financial interest in the subject matter or materials discussed in this manuscript.

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