Responsiveness of the EQ-5D-5L and EORTC QLU-C10D in Cancer Patients

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Introduction

The Multi-Attribute Utility in Cancer (MAUCa) consortium recently developed a preference-based measure – the EORTC Quality of Life Utility Measure-Core 10 Dimensions (QLU-C10D). Derived from the widely used cancer-specific QOL profile-based measure, EORTC QLQ-C30, QLU-C10D is expected to capture changes in health that might not be sufficiently captured by generic preference-based measures, such as EQ-5D. This study aimed to compare the responsiveness of EQ-5D-5L and QLU-C10D in cancer patients.

Methods

Patients with a diagnosis of cancer who were treated or followed up by the National Cancer Centre Singapore were recruited for this study. Each patient was interviewed twice, face-to-face, during their routine outpatient visits using the EQ-5D-5L and EORTC QLQ-C30 questionnaires.

Multiple country-specific value sets were used to calculate the EQ-5D-5L index score and an Australian value set was used to calculate QLU-C10D index score.

Responsiveness to improvement and deterioration was evaluated separately for the two index scores using patients whose overall health or QOL changed from baseline to follow-up visits according to their responses to the EORTC QLQ-C30 questionnaire. Specifically, change was defined by ≥ 1 point change in the response scale for the EORTC overall health/QOL question.

Responsiveness of the indices was assessed using the Standardized effect size (SES), standardized response mean (SRM) and F-statistic (calculated as the squared t-statistic derived from the paired t-tests of EQ-5D-5L/QLU-C10D index score between baseline and follow-up visits).

Results

158 cancer patients completed both baseline and follow-up interviews. The majority of the patients were Chinese (78%) and male (52%). The mean age was 58 years. Full sample characteristics are shown in Table 1.

TABLE 1 – SAMPLE CHARACTERISTICS (N=158)

Characteristic	n (%)
Age in years, mean (SD)	58.4 (10.9)
Age ≥ 60 years	77 (48.7)
Female	76 (48.1)
Ethnicity	
Chinese	123 (77.9)
Malay	16 (10.1)
Indian	12 (7.6)
Others	7 (4.4)
Married	100 (63.3)
Working	66 (41.8)
Monthly income	
<S$2,000	55 (34.8)
S$2,000 - S$4,000	34 (21.5)
>S$4,000	35 (22.2)
Refused/Don't know	34 (21.5)
Education level	
Primary or less	28 (17.7)
Secondary	34 (21.5)
Higher secondary	46 (29.1)
Diploma	24 (15.2)
University and above	26 (16.5)
Housing type	
≤4 room HDB	53 (33.5)
4 room HDB	38 (23.4)
>4 rooms HDB/private house	68 (43.0)
Interview language	
Chinese	59 (37.3)
English	99 (62.7)
Duration between the two interviews, day	
Median (IQR)	62 (82)

Results (continued)

At the follow-up visit, 62 and 36 patients reported improvement and deterioration, respectively, in their overall health compared to the baseline visit; 59 and 42 patients reported improvement and deterioration in their overall QOL.

The mean changes in the EQ-5D-5L index score (range: 0.027 to 0.047) and QLU-C10D index score (0.038) for patients reporting improvement in health were similar. However, the mean change in EQ-5D-5L index score for patients who reported deterioration in their overall health at the follow-up visit was smaller than the mean change in the QLU-C10D index score (Figure 1).

Based on the baseline and follow-up index scores of patients who reported improved health at the follow-up visit, the SES, SRM and F-statistic for QLU-C10D were 0.28, 0.35 and 7.2, respectively, which were either similar or slightly larger than corresponding values for EQ-5D-5L (SES range: 0.21 to 0.30; SRM range: 0.21 to 0.31; F-statistic range: 0.02 to 0.11).

Based on the index scores of patients who reported deterioration in health, the SES, SRM and F-statistic for QLU-C10D were 0.69, 0.48 and 7.4, respectively, which were much larger than corresponding value for EQ-5D-5L (SES range: 0.02 to 0.05; SRM range: 0.02 to 0.06; F-statistic range: 2.6 to 6.0).

Similar results were observed in patients reporting improvement or deterioration in overall QOL at the follow-up visit (Figures 1& 2).

Conclusion

It appears that the EQ-5D-5L index is non-inferior in terms of responsiveness for improvement in health and QOL compared to QLU-C10D. However, QLU-C10D may be more responsive than EQ-5D-5L to deterioration in health and QOL experience by cancer patients.

FIGURE 1- CHANGE IN INDEX SCORES BETWEEN BASELINE AND FOLLOW-UP VISITS

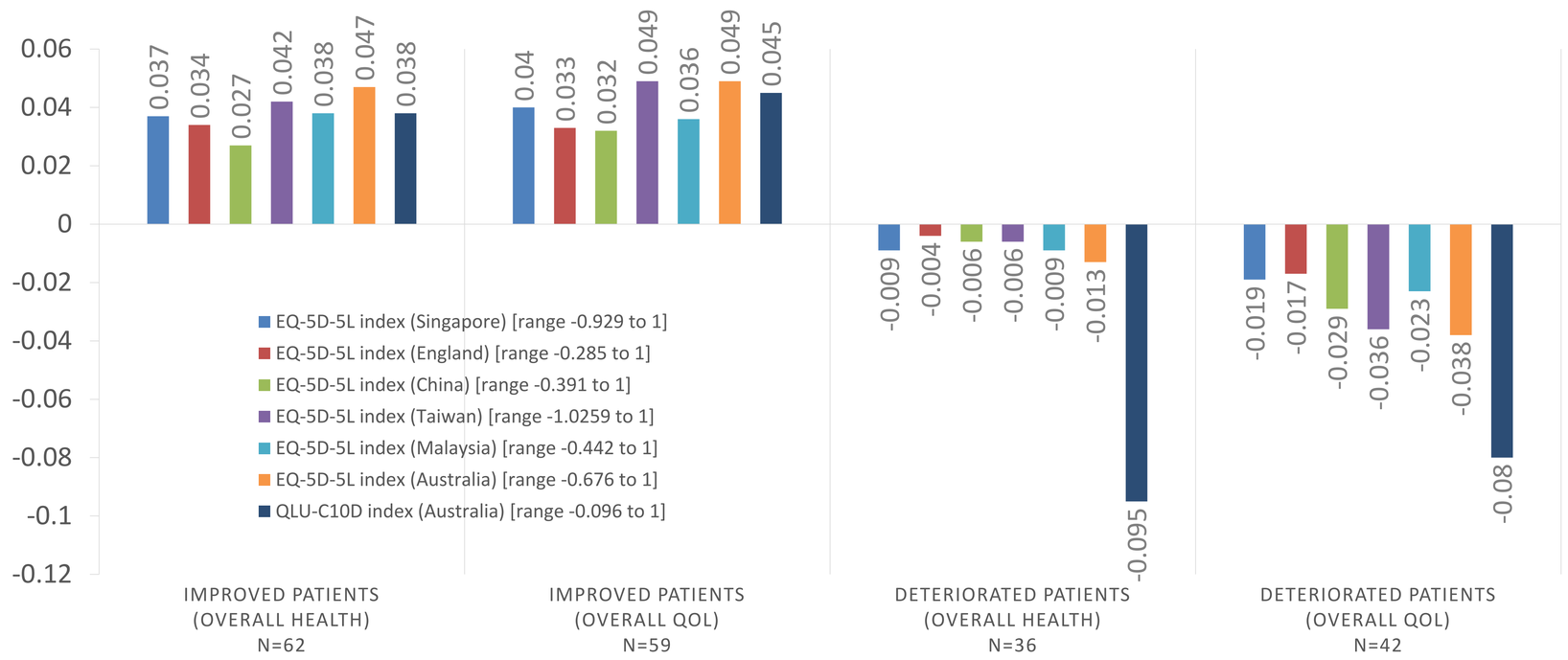
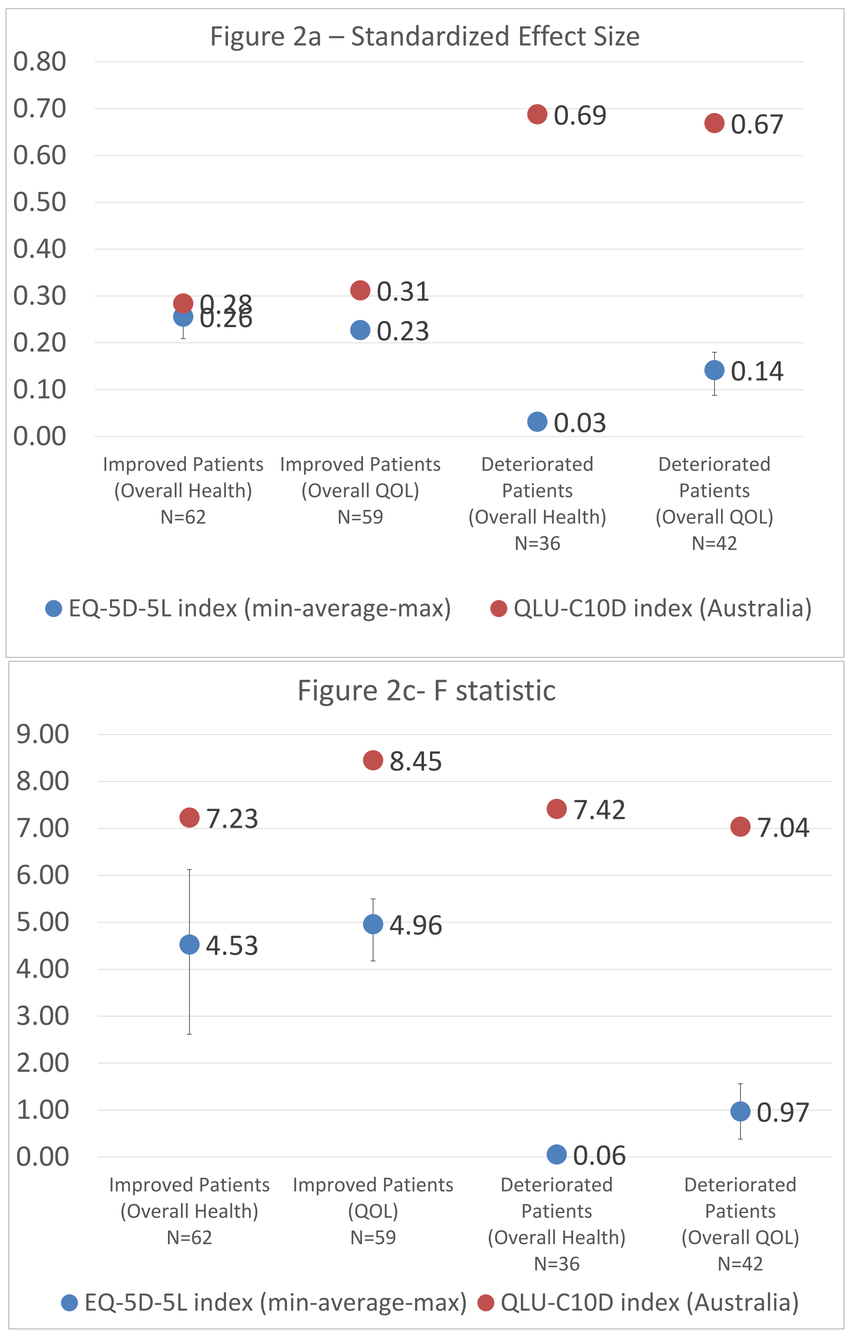


FIGURE 2 – RESPONSIVENESS TO IMPROVEMENT AND DETERIORATION



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