

# Comparison of health utility values from EQ-5D-3L and EQ-5D-5L in breast cancer patients in different health statuses

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## Background

- EQ5D is a standardized tool developed by the EuroQoL group to measure health-related quality of life for various health conditions and treatments.<sup>1</sup>
- The tool consists of five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression.<sup>1</sup>
- Our group reported Canadian-derived EQ-5D-3L derived health utility scores (HUS) for over 20 different cancer sites.
- The Canadian valuation set for EQ-5D-5L derived health utilities were recently reported.
- EQ-5D-3L offers three levels of severity for each dimension, whereas EQ-5D-5L offers five levels of severity for each dimension.<sup>1</sup>
- As we switch from EQ-5D-3L to EQ-5D-5L, data was evaluated to examine if they could be analyzed together across versions.

## Objective

- To investigate if the data taken from EQ-5D-3L questionnaires are comparable to data from the EQ-5D-5L surveys within the same breast cancer health state

## Methods

- Breast cancer patients in three health states were evaluated using EQ-5D-3L from 2014-2015 and EQ-5D-5L from 2016-2017.
- Patients were divided into three health states: curable primary breast cancer, loco-regional recurrence, where the cancer recurred in the same region of the body, and metastatic disease, where the cancer had spread to other parts of the body.
- Mean values of the patients' HUS were compared and analyzed.
- We did not compare data from the two versions for the same patients to eliminate recall bias.

## Summary of Results

- Both groups had similar distributions for clinico-demographic data except for ethnicity, where there were more Asian patients in the 5L (22% vs. 9%; p-value = **0.007**).
- Mean HUS were higher in all three health states when assessed by EQ-5D-5L compared to EQ-5D-3L (Table 2).
- At least one health state had a statistically significant different HUS compared to the others when assessed by EQ-5D-5L (p=0.002). The same was not found when assessed by EQ-5D-3L (Table 2).
- The same health state (curable primary breast cancer) showed significantly different HUS when calculated using the two EQ-5D versions (p=0.028, Figure 2).
- 5L-HUS values showed more variability than 3L-HUS values (Figure 2).

## Conclusion

- Data from EQ-5D-3L can be compared with data from EQ-5D-5L for Canadian breast cancer patients, but caution should be exercised.
- Overall mean health utility score was higher when assessed by EQ-5D-5L than EQ-5D-3L within each health status.
- The sample size was quite small for the Loco-Regional Recurrence group (n=12); this is a limitation that could have skewed the mean health utility score in that group.

## References

- EQ-5D. (2017, Apr 28). *EQ-5D Instruments: About EQ-5D*. Retrieved from <https://euroqol.org/eq-5d-instruments/>

## Acknowledgements

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## Results

	Total Study Population N=387	EQ-5D-3L Sample N=128	EQ-5D-5L Sample N=259	p-value
<b>Gender</b> (% Female)	99	100	99	1
<b>Age</b> (mean)	55.7	55.7	55.7	0.99
<b>Education</b> Any post-secondary No post-secondary	84% 16%	83% 17%	84% 16%	0.77
<b>Ethnicity</b> Caucasian Asian Other	70% 18% 13%	76% 9% 15%	67% 22% 12%	<b>0.0074</b>
<b>First Language</b> (% English)	82	80	83	0.49
<b>Employment</b> (% not working/retired)	44	48	42	0.45
<b>Marital Status</b> (% married)	66	67	66	0.82
<b>Current Health State</b> Curable Primary Breast Cancer Metastatic disease Loco-Regional recurrence	68% 29% 3%	72% 27% 2%	66% 30% 4%	0.33
<b>Health Utility Score Value</b> (Mean)	0.82	0.80	0.83	<b>0.05</b>
<b>Health Utility Score Value</b> (Standard Deviation)	0.14	0.16	0.13	<b>0.05</b>

Table 1. Demographic and clinical information across EQ-5D-3L and EQ-5D-5L samples.

	Full Sample	Curable Primary Breast Cancer	Loco-Regional Recurrence	Metastatic Disease	p-value
<b>EQ-5D-3L and EQ-5D-5L</b>	0.82 (n=387)	0.83 (n=253)	0.86 (n=12)	0.78 (n=107)	<b>0.004</b>
<b>EQ-5D-3L</b>	0.80 (n=128)	0.81 (n=91)	0.85 (n=2)	0.78 (n=34)	0.54
<b>EQ-5D-5L</b>	0.83 (n=259)	0.85 (n=162)	0.87 (n=10)	0.79 (n=73)	<b>0.002</b>

Table 2. Mean health utility scores across EQ-5D-3L and EQ-5D-5L samples across different health states.

### All Patients

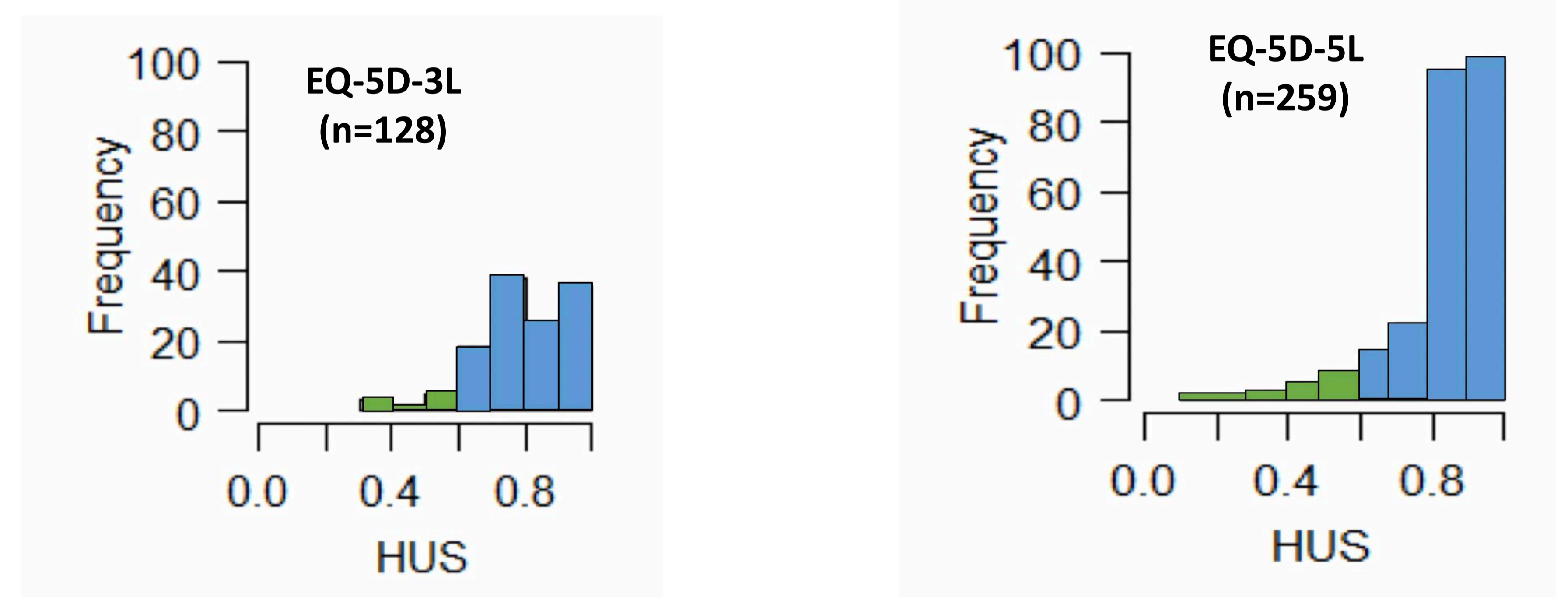
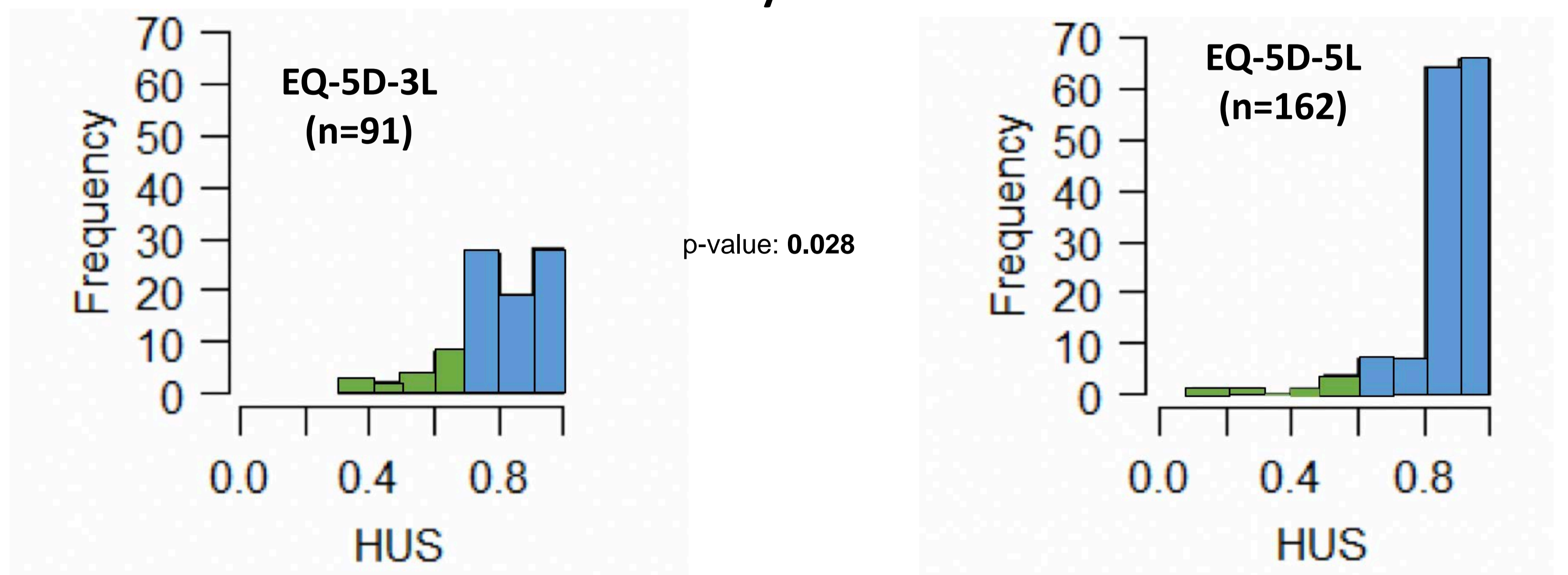


Figure 1. Distribution of health utility scores across EQ-5D-3L and EQ-5D-5L samples.

### Curable Primary Breast Cancer



### Metastatic Disease

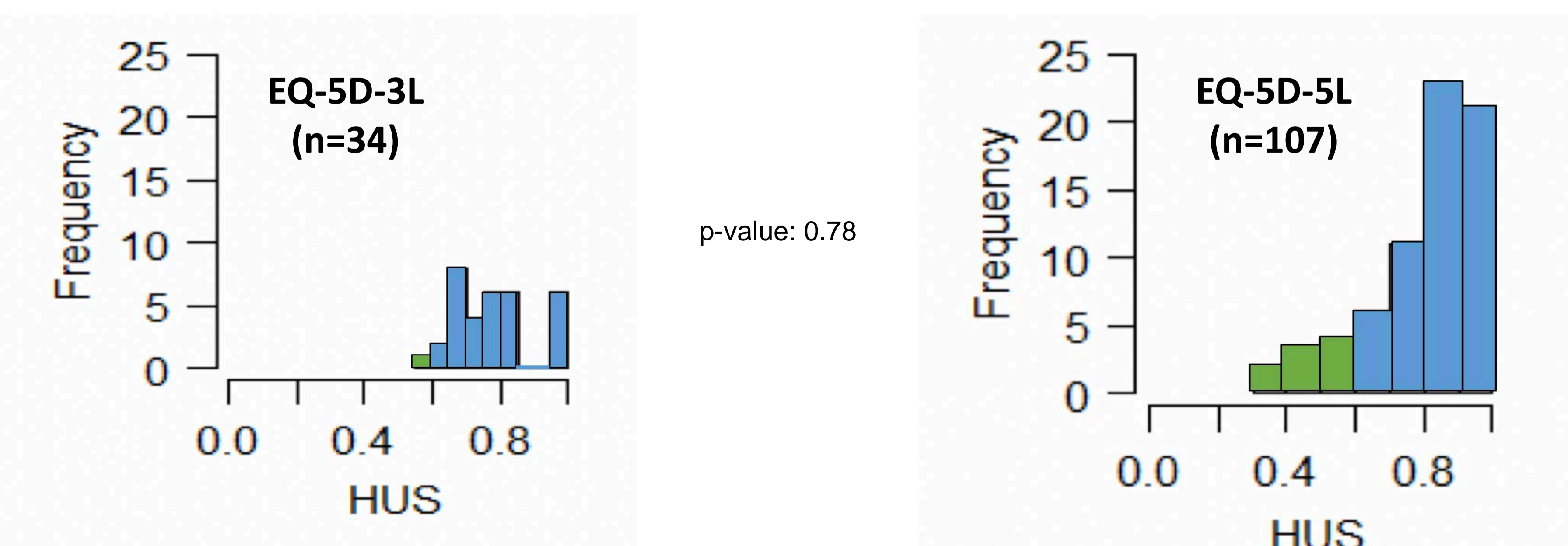


Figure 2. Distribution of health utility scores across varying health states. Histograms and p-values for loco-regional recurrence are unavailable due to small sample sizes.