

Comparing Health, Health and Wellbeing (HWB), and Quality of Life (QoL) Visual Analogue Scale (VAS) Constructs with the EQ-HWB-9 in the United States (US), United Kingdom (UK), and Germany

Jonathan L. Nazari¹ · Maja Kuharic^{1,2} · Aaron N. Winn¹ · Ning Yan Gu³ · Surrey M. Walton¹ · A. Simon Pickard¹

¹ University of Illinois Chicago, Retzky College of Pharmacy, Dept. of Pharmacy Systems, Outcomes & Policy ² Northwestern University Feinberg School of Medicine, Dept. of Medical Social Sciences ³ University of San Francisco, School of Nursing and Health Professions

BACKGROUND

- The EQ VAS is an important component of EQ-5D instruments but is not currently included with the EQ-HWB-9
- Previous mixed-methods evidence in a US sample (n=34) indicated that candidate VAS versions with the EQ-HWB-9 were perceived differently qualitatively yet did not demonstrate meaningful quantitative differences in ratings, warranting the need for confirmation in a larger, multi-country sample

OBJECTIVES

To determine whether VAS construct specification produces measurable differences in VAS ratings and in the extent to which EQ-HWB-9 item responses explain ratings

METHODS

- 900 adults from the US, UK, and Germany completed an online survey with the EQ-HWB-9 and three VAS versions with 7-day recall periods in a random order
- Means, effect sizes, correlations, and agreement between ratings were compared across VAS versions
- Construct-specific convergent validity was examined by correlations with EQ-HWB-9 items, external anchors (self-rated health, life and relationship satisfaction, difficulty affording healthcare and household expenses), level sum scores, and UK pilot utilities
- Multiple linear regression models estimated the variance in VAS version ratings explained by EQ-HWB-9 items; the unique importance of each EQ-HWB-9 item in explaining variance in VAS constructs was examined by Partial η^2 effect sizes.

METHODS: VAS VERSIONS

We would like to know how you rate your quality of life. The scale is numbered from 0 to 100. 100 means the **best** quality of life you can imagine. 0 means the **worst** quality of life you can imagine.

We would like to know how you rate your health. The scale is numbered from 0 to 100. 100 means the **best** health you can imagine. 0 means the **worst** health you can imagine.

We would like to know how you rate your health and wellbeing. The scale is numbered from 0 to 100. 100 means the **best** health and wellbeing you can imagine. 0 means the **worst** health and wellbeing you can imagine.

RESULTS: PARTICIPANT CHARACTERISTICS

N = 916

319 (35%)
285 (31%)
312 (34%)

Mean Age 45 years (SD) (16)

50.1% Female

At Least One Chronic Illness: 916 (100%)

Informal Caregivers: 185 (20%)

Social Care Users: 59 (6%)

Figure 1: MEAN RATINGS, CORRELATIONS, AND AGREEMENT

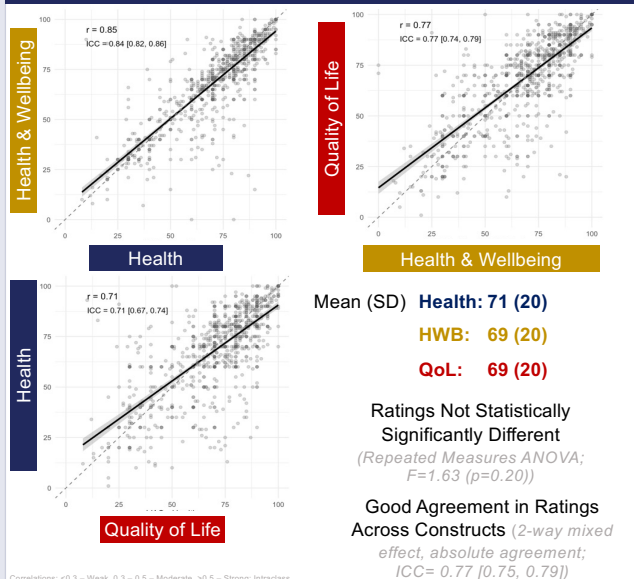


Figure 2: UNIQUE ITEM IMPORTANCE IN EXPLAINING VAS RATINGS

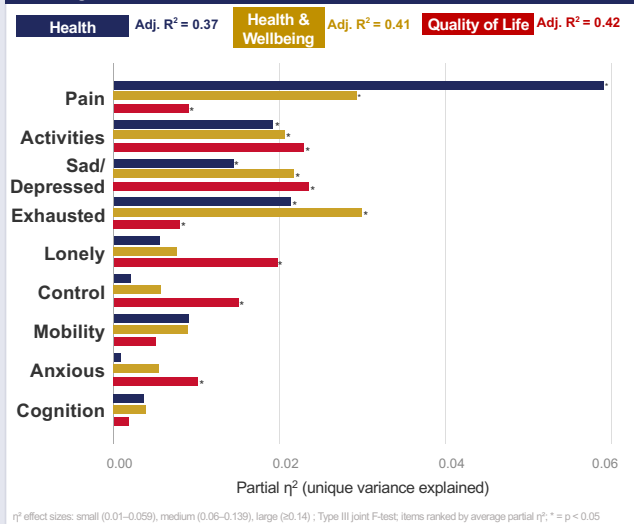


Table 1: CORRELATIONS WITH EQ-HWB-9 ITEMS AND EXTERNAL ANCHORS

	Health	Health & Wellbeing	Quality of Life
Activities	-0.48	-0.50	-0.50
Mobility	-0.35	-0.33	-0.30 ^b
Exhausted	-0.47	-0.52 ^a	-0.48
Lonely	-0.36	-0.40 ^a	-0.46 ^a
Cognition	-0.38	-0.43 ^a	-0.46 ^a
Anxious	-0.35	-0.41 ^a	-0.43 ^a
Sad/Depressed	-0.42	-0.48 ^a	-0.53 ^a
Control	-0.39	-0.45 ^a	-0.50 ^a
Pain	-0.46	-0.41 ^b	-0.34 ^b
EQ-HWB-9 LSS	-0.55	-0.62 ^a	-0.69 ^a
EQ-HWB UK Utility	0.57	0.62 ^a	0.68 ^a
Self-rated health	-0.70	-0.67 ^b	-0.52 ^b
Relationship satisfaction	-0.43	-0.50 ^a	-0.54 ^a
Life satisfaction	-0.46	-0.52 ^a	-0.61 ^a
Healthcare costs	-0.29	-0.32	-0.34 ^a
Household expenses	-0.32	-0.39 ^a	-0.41 ^a

^a = |r| sig larger than Health VAS (Steiger, $p < .05$); ^b = |r| sig smaller than Health VAS
Correlations: <0.3 – Weak, 0.3 – 0.49 – Moderate, ≥ 0.5 – Strong

CONCLUSIONS

- The three VAS constructs yielded similar aggregate mean ratings and comparable explanatory power of EQ-HWB-9 items ($R^2 = 0.39$ – 0.44)
- Physical functioning (Pain, Mobility) associated more strongly with Health; mental and emotional items (Sad/Depressed, Lonely) associated more strongly with Quality of Life
- Health and Wellbeing demonstrated the most balanced alignment with the EQ-HWB-9 and was the preferred construct among respondents
- 45.9% selected HWB as best capturing EQ-HWB-9 content and 59.9% ranked HWB as their preferred VAS construct
- Among caregivers (n = 185), Anxious replaced Sad/Depressed as the top predictor of Quality of Life, while Control was uniquely significant for Health and Wellbeing VAS
- The choice of VAS construct should be guided by multiple evidence types and clear selection criteria
- Mixed-methods research in caregivers, social care users, and additional countries should be considered to finalize a VAS with the EQ-HWB-9