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Performance of EQ-HWB and EQ-HWB-S Self-Complete and Interviewer-Administered Version in Illiterate, Low-literacy, and Patients in Indonesia

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OBJECTIVES

Investigate the performance, reliability, and validity of the interviewer-administered (IA) and self-completion (SC) versions of EQ-HWB and EQ-HWB-S

METHODS

A longitudinal survey in Bandung, Indonesia, involved 300 respondents (200 literate, 50 low literacy/illiterate, 50 patients) across socio-demographics.

Literate and patient groups completed both IA and SC versions, while the illiterate group completed only IA. All groups were tested twice with a two-week interval.

Paper-and-pencil questionnaires included Indonesian version of EQ-HWB, EQ-5D-5L, and WEMWBS.

Psychometric evaluations covered ceiling/floor effects, convergent validity, known-group validity (EQ VAS (<80 vs. ≥80) and patient vs. non-patient status), and test-retest reliability (Gwet's AC2, ICC)

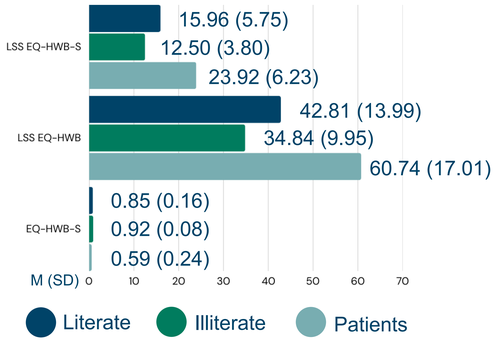
RESPONDENTS' CHARACTERISTICS

n = 300

- **Age** M (SD) = 39.22 (15.81)
- **Sex**
  Female = 62.67%; Male = 37,33%
- **Education**
  Middle = 46.67%; High = 33.67%; Low = 16.33%
- **Disease (Patient Group)**
  Diabetes = 8.33%; TB = 8.33%

RESULTS

DESCRIPTIVE STATISTICS



The illiterate group had the lowest EQ-HWB LSS scores for both versions, while the patient group had the highest. In contrast, the illiterate group had the highest short-version utility score, whereas the patient group had the lowest.

KNOWN-GROUP VALIDITY

Group	EQ-HWB-S, EQ-HWB
EQ-VAS (< 80 and ≥ 80)	EQ-VAS < 80 group (n = 86): • Lower EQ-HWB-S utility scores. • Higher LSS scores for both EQ-HWB and EQ-HWB-S (p < 0.001)
Patient vs Non-patients	Patients (n = 50) had significantly lower EQ-HWB-S utility scores and higher LSS scores (p < 0.001)

CEILING & FLOOR EFFECT

Aspect	EQ-HWB-S Items	EQ-HWB Items
Best response	Ranged from 24.0% ('Exhaustion') to 71.67% ('Getting around inside and outside')	Ranged from 24.0% ('Exhaustion') to 86.33% ('Hearing')
Worst response	Ranged from 0.67% ('Getting around inside and outside', 'Cognition') to 5.33% ('Exhaustion')	Ranged from 0.0% ('Sight', 'Hearing', 'Personal care', 'Memory', 'Pain severity', 'Discomfort severity') to 6.33% ('Feel good about self', 'Do things one wanted to do').
Ceiling Effect	An item 'Getting around inside and outside' (71.67%)	5 out of 25 items showed a ceiling effect: 'Hearing' (86.33%), 'Personal care' (81.33%), 'Frustration' (73.0%), 'Getting around inside and outside' (71.67%), 'Nothing to look forward' (70.67%).
Floor Effect	No items in EQ-HWB-S showed a floor effect (>5%)	4 out of 25 items showed a floor effect: 'Feel good about self' (6.33%), 'Do things one wanted to do' (6.33%), 'Accepted by others' (5.67%), 'Exhaustion' (5.33%).

TEST-RETEST RELIABILITY

- **Excellent reliability** for EQ-HWB across SC and IA methods in literate and patient groups; SC methods in literate and patient groups; IA methods in all groups.
- **Highest agreement items** (AC2 ≥ 0.85): 'Getting around inside and outside,' 'Day-to-day activities,' 'Personal care,' 'Hearing,' and 'Sight.'
- **Lowest agreement items** (AC2 ≤ 0.53): 'Anxiety,' 'Exhaustion,' 'Cognition,' and 'Pain (frequency).'
- **Group findings**:
  - **Literate & patient groups**: Strong reliability, but lower agreement for exhaustion and pain.
  - **Illiterate group**: Highest agreement (12/25 items), but low for exhaustion, pain, and discomfort.

CONVERGENT VALIDITY

Group-Specific Findings

- **Literate and Patient Groups**: Moderate to strong correlations for most overlapping items.
- **Illiterate**: Weaker correlations; no significant associations for some key constructs (mobility, anxiety, pain severity).

Strong Correlations at the Instrument Level

EQ-HWB and EQ-HWB-S demonstrated strong correlations with EQ-5D-5L LSS (r = 0.83 for both) and EQ-VAS (r = -0.69 for EQ-HWB-S LSS and r = -0.77 for EQ-HWB LSS). Additionally, both instruments showed significant associations with WEMWBS, where EQ-HWB-S LSS and EQ-HWB LSS correlated at r = -0.59, and the EQ-HWB-S utility score at r = 0.57. Moderate to strong correlations were also observed across literate, illiterate, and patient groups.

Key Item-Level Correlations

- Highest: EQ-HWB getting around inside and outside & EQ-5D-5L mobility (r = 0.77).
- Others: EQ-HWB anxiety & EQ-5D-5L anxiety/depression (r = 0.70), EQ-HWB sadness or depression & EQ-5D-5L anxiety/depression (r = 0.69), EQ-HWB personal care & EQ-5D-5L self-care (r = 0.60), EQ-HWB pain & EQ-5D-5L pain/discomfort (~0.55).

CONCLUSIONS

- The findings demonstrated strong reliability, validity, and measurement properties of these instruments in both SC and IA formats, supporting their feasibility for diverse populations, including those with low literacy and patients.
- While both instruments exhibited minor ceiling effects, EQ-HWB-S had fewer such limitations, making it particularly suitable for the general population. The IA version proved especially valuable for illiterate or low-literacy respondents, ensuring inclusivity in health assessments.

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