Evaluation of the Behavioural Outcomes of Anxiety (BOA) questionnaire to assess anxiety after stroke in aphasic patients.

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Introduction:
Although there are methods to assess anxiety after stroke, such as the HADS-A, no validated method of assessing anxiety in stroke survivors with severe communication difficulties was found in a literature search [1].

Consequently, the 10-item BOA questionnaire was constructed by psychologists using both literature and clinical experience [1]

The BOA is designed to be completed by a carer to fill in on behalf of a stroke survivor with severe communication difficulties.

Example of Carer BOA:

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<th>Item</th>
<th>Carer BOA</th>
<th>Survivor BOA</th>
<th>HADS-A</th>
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Aims:
Our aim was to validate the BOA by assessing its psychometric properties, initially using stroke survivor-carer dyads where the stroke survivor had no communication difficulties.

* Criterion validity: Comparing scores of the stroke survivor BOA and carer BOA.
* Construct validity: Comparing scores between the stroke survivor BOA and HADS-A scores and between the carer BOA and HADS-A scores.
* Internal consistency: as calculated by Cronbach’s alpha.
* Test-retest reliability: compare BOA with a repeat BOA a week later.

Six Hypotheses:

Hypothesis 1: There will be a high and significant positive correlation between the scores of the stroke survivor BOA and the carer BOA questionnaire. (Pearson’s correlations)

Hypothesis 2a: There will be a high and significant positive correlation between the stroke survivor HADS-A and BOA questionnaires.

Hypothesis 2b: Similarly, there will be a high and significant positive correlation between the carer HADS-A and BOA questionnaires. (Pearson’s correlations)

Hypothesis 3a: The stroke survivor and carer BOA will be internally consistent (calculated using Cronbach’s alpha).

Hypothesis 3b: All stroke survivor and carer BOA items will show a significant correlation with the corrected item total-i.e. all items will be related closely to the total score of the BOA. (Corrected item-total correlations).

Hypothesis 4: There will be a high test-retest correlation between the stroke survivor and carer BOA and a repeat stroke survivor and carer BOA a week later. (Pearson’s correlations)

Hypothesis 5a: There will be a high and significant area under the curve for the carer BOA predicting caseness on the stroke survivor BOA and survivor HADS-A.

Hypothesis 5b: There will be a high test-retest correlation between the stroke survivor and carer BOA and the stroke survivor BOA item (Kendal’s Tau b).

Hypothesis 6: There will be a high and significant positive correlation between the scores of the survivor BOA and HADSA-A.

Method:
Ethical approval and consent obtained.
Participants
Recruited from 20 different stroke groups around Wales and England:
- 89 stroke survivors (mean age 76.2, 62.5% male)
- 79 of their informal carers (mean age 67.6, 71.3% female)

Exclusion criteria:
- Stroke survivors with severe communication difficulties
- Stroke survivors who have seen their carer for less than 3 hours in the past week
- Participants who had a stroke less than 6 months ago

Sample Size
- 80 stroke survivor-carer dyads were involved in the project.

Demographic Correlations

The BOA was not significantly associated with any demographic variables (age, time since stroke, etc.) Therefore it appears to be free from contamination by demographic variables.

The stroke survivor-carer BOA pair was both associated significantly with survivor and carer rated ‘impact on memory’. It appears that perceived memory impairment is related to anxiety.

Results:

Hypothesis 1: There is a high positive correlation between survivor and carer BOA responses.

The high correlations between the stroke survivor and carer BOA and stroke survivor and carer HADS-A Hypothesis 2a and 2b represent the construct validity of the BOA.

Hypothesis 5a: Internal consistency

These results suggest Hypothesis 1 there is a high positive correlation between survivor and carer BOA responses.

Hypothesis 6: Cut off Scores.

Carer BOA against the survivor HADS-A: At a cut off score of 13 sensitivity was 0.77 and specificity was 0.58.

Carer BOA against the survivor BOA: At a cut off score of 13 the sensitivity was 0.86 and specificity was 0.68.

Survivor BOA against the survivor HADS-A: At a cut off score of 14 the sensitivity was 0.84 and specificity of 0.81.

The best cut off on the carer BOA is a score of 13 or more and for the survivor BOA is 14 or more.

Discussion:

Limitations

- The BOA relies on the report of a care. Responses may be affected by alcohol or drugs.

- The BOA was validated in this study with patients without severe communication difficulties. Its utility with patients with aphasia remains to be determined.

- For practical reasons, carers and patients are the only people who can complete the BOA.

- The BOA may be used with participants with severe communication difficulties with increased confidence in its value as a means of assessing such patient’s anxiety states.

Conclusions

- The BOA may be used with participants with severe communication difficulties with increased confidence in its value as a means of assessing such patient’s anxiety states.

References:


Acknowledgments

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