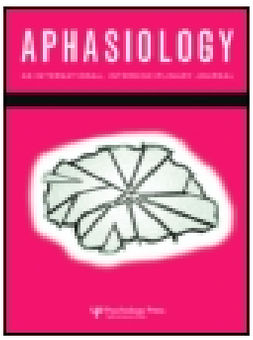

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Prevalence of anxiety in people with aphasia after stroke

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ABSTRACT

Background: Anxiety is common after stroke and is associated with poorer recovery. People with aphasia after stroke are typically excluded from studies of anxiety prevalence and so the number of those affected is unclear.

Aims: To make a preliminary estimate of the prevalence of significant anxiety in people with aphasia after stroke.

Methods & Procedures: Carers to community-dwelling people with aphasia after stroke, *N* = 111, completed the Behavioural Outcomes of Anxiety scale (BOA), a modified Hospital Anxiety and Depression Scale – Anxiety sub-scale (HADS-A), and a modified Generalised Anxiety Disorder-7 item (GAD-7) scale to determine the presence of significant anxiety in the person for whom they cared. Associates of anxiety in people with aphasia after stroke were also investigated.

Outcomes & Results: The BOA identified 49 people (44%) as having significant anxiety. Findings for the HADS-A = 46 (41%) were similar; however, for the GAD-7, the rate was substantially lower = 18 (16%). Anxiety after stroke had a modest but significant association with younger age (all measures) and with the Frenchay Aphasia Severity Test scores (BOA and HADS-A only).

Conclusions: The prevalence of anxiety in people with aphasia after stroke is high and likely higher than in those with stroke with no aphasia when measured using a validated tool for this population. Risk factors for anxiety appear to be severity of aphasia and younger age. This finding should be tempered by the fact that this is a preliminary study in a relatively small sample consisting of those attending stroke groups and the use of caregiver assessments may overestimate the prevalence of mood disorder.

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Stroke; aphasia; anxiety; prevalence

Anxiety disorders is a class of conditions that includes generalised anxiety disorder, panic disorder, and phobias (American Psychiatric Association, 2013). Features common to these conditions are fear out of proportion, apprehension of danger or negative events, and day-to-day distress. Physical aspects can include tension, palpitations, dizziness, or trembling. These conditions are amongst the most common of psychiatric disorders. Post-traumatic stress disorder is amongst a class of conditions known as trauma- and stressor-related disorders and also commonly involves the experience of

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significant anxiety symptoms (American Psychiatric Association, 2013). Stroke is typically a sudden onset life-threatening event and a leading cause of disability. It can impair physical, cognitive, and communication function (Lincoln, Kneebone, Macniven, & Morris, 2012). Unsurprisingly, stroke can be a precipitant to anxiety and post-traumatic stress symptoms. The point prevalence rate for significant anxiety after stroke is between 18% and 25% (Campbell Burton et al., 2013). While anxiety is challenging after stroke, of further concern is its impact on recovery. Anxiety after stroke appears to impact quality of life (Jeong et al., 2012; Tang, Lau, Mok, Ungvari, & Wong, 2013), social contact (Astrom, 1996), and functional ability (Astrom, 1996; D'Alisa, Baudo, Mauro, & Miscio, 2005). Aphasia affects between 30% and 34% of those with stroke (Flowers et al., 2016). Traditionally, significant anxiety is identified via questionnaire and/or clinical interview. On this account, those with aphasia are typically excluded from studies assessing anxiety prevalence (Campbell Burton et al., 2013). Preliminary research comparing small groups of those with and without aphasia after stroke provides some evidence to suggest anxiety is likely higher for those who have aphasia (Shehata, El Mistikawi, Al Sayed, & Hassan, 2015).

Recently, an instrument has been developed that has facilitated the assessment of anxiety in people with aphasia after stroke (Eccles, Morris, & Kneebone, 2016; Kneebone, Neffgen, & Pettyfer, 2012; Linley-Adams, Morris, & Kneebone, 2014). The Behavioural Outcomes of Anxiety (BOA) scale uses observer (typically formal or informal carer) ratings of behaviour to identify anxiety after stroke. The BOA allows anxiety prevalence to be assessed for the first time in this vulnerable group. It was the aim of the current study to specifically consider the prevalence of anxiety in community-dwelling people with aphasia after stroke.

Method

Participants were an opportunistic sample involved in the initial cross-sectional phase of a study to assess the psychometric properties of the BOA. A detailed description of the methodology is available elsewhere (Eccles et al., 2016). Participants with aphasia and their carers were recruited from stroke groups in Wales, United Kingdom. Inclusion criteria included having had a stroke between 2 months and 20 years previously and carer or self-reported aphasia. Communication was assessed using the Frenchay Aphasia Severity Test (FAST; Enderby, Wood, Wade, & Hewer, 1986). Any patient or carer <18 years old was excluded from participation.

Carers completed questionnaires that included the BOA, a carer-completed version of the Hospital Anxiety and Depression Scale-Anxiety sub-scale (HADS-A; Zigmond & Snaith, 1983) and a carer-completed version of the Generalised Anxiety Disorder-7 item (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006). This was done either in their own home or privately at a stroke group venue.

Results

One hundred and eleven patient carer dyads were recruited. Approximately 69% of patients were male and 72% of carers were female. Patient mean age was 69.7 (SD = 10.7), for carers this was 64.7 (SD = 12.2). For 65 patients, it was their first stroke.

Table 1. Scores on anxiety measures and their correlates.

Measure	Mean (SD)	Range	Caseness	FAST	Patient age	Correlations carer age	Gender	Time since stroke (years)
BOA	15.12 (6.19)	1–28	49 (44%)	.20*	−.27*	−.20*	.03	−.07
HADS-A	6.90 (4.44)	0–20	46 (41%)	.20*	−.28*	−.15	.09	−.09
GAD-7	5.46 (5.38)	0–19	18 (16%)	.15	−.22*	−.10	.08	−.17

Notes. n/N = 105–111, BOA: Behavioural Outcomes of Anxiety, cut-off > 16, HADS-A: Hospital Anxiety and Depression Scale- Anxiety sub-scale, cut-off > 7, GAD-7: Generalised Anxiety Disorder-7 item, cut-off > 10, FAST: Frenchay Aphasia Severity Test. All correlations. Pearson's r, except Gender which uses η. *p < .05 level (1 tailed).

Mean FAST score was 19 (SD = 5.9). Aphasia severity category statistics (Dalemans, De Witte, Beurskens, Van Den Heuvel, & Wade, 2010) were as follows: 16 (14%) participants had severe aphasia (FAST score of 0–10), 43 (39%) participants had moderate aphasia (FAST score of 11–20), 46 (41%) had mild aphasia (FAST score 21–26), and 6 (5%) minimal aphasia (FAST score 27–30). Table 1 summarises the scores obtained for each of the anxiety measures and their correlates. A prevalence rate of up to 44% is indicated for anxiety in those with aphasia post-stroke. Anxiety was associated with younger age on all the measures of anxiety. Level of aphasia was modestly correlated with anxiety on two of the measures.

Discussion

For the first time, an estimate of the prevalence of significant anxiety in people with aphasia after stroke using an instrument specifically developed for this purpose is available. At 44%, the prevalence established by the BOA is high relative to anxiety in the non-aphasic post-stroke samples (Campbell Burton et al., 2013).

The finding of a lower prevalence of anxiety in this sample as measured by the GAD-7 is perplexing. However, unlike the HADS-A and the BOA, the GAD-7 has not been subject to evaluation in stroke. It may well be it is not an appropriate instrument to use in this population, or that a lower cut-off is more appropriate if it is to be used. A lower cut-off for those with stroke has been found to be required for other instruments assessing anxiety in stroke (e.g., Kneebone, Fife-Schaw, Lincoln, & Harder, 2015). Further, it should be noted that a score of >5 on the GAD-7 is considered indicative of "mild symptoms" of anxiety on this measure. At this cut-off, prevalence rates would be similar to those identified by the BOA and the HADS-A.

The modest correlation between the FAST scores and anxiety scores is consistent with findings that, in general, cognitive deficits are associated with anxiety after stroke (Menlove et al., 2015). The association of anxiety with younger age may indicate a risk factor to be considered in this population, though results from studies that have considered this in the whole stroke population are inconsistent, with some studies supporting it (Broomfield, Scoular, Welsh, Walters, & Evans, 2013; Castellanos-Pinedo et al., 2011) and others not (Lincoln et al., 2013; Tang et al., 2012).

Some limitations to the current study should be acknowledged. First, this was a relatively small sample on which to estimate prevalence and also one that might not be fully representative of those with aphasia after stroke. As all participants were attenders at a stroke

group, they may be those who have sought out a group on account of anxiety, resulting in an overestimate of anxiety prevalence. In contrast, the study findings might underestimate anxiety on this basis of accessing participants from a stroke groups; those with anxiety might be less likely to attend a stroke group given both aphasia and anxiety after stroke is associated with social isolation (Astrom, 1996; Hilari & Northcott, 2016). Second, there is evidence from work considering depression in people after stroke that suggests carers might overestimate the presence of symptoms (Berg, Lönnqvist, Palomäki, & Kaste, 2009). There is some support for this contention in the work that took place in the development of the BOA – carers estimated anxiety as higher than did the stroke patient themselves (Linley-Adams et al., 2014). Finally, while screens such as the BOA detect anxiety symptoms, in themselves, they are not diagnostic of a particular disorder, for example, generalised anxiety disorder or PTSD. This should be considered if the interest is in estimating disorder-specific prevalence.

Robust population-based studies are required to support the currently suggested high rate of anxiety symptoms that appears evident in people with aphasia after stroke. Such studies should control for a possible contamination effect of anxiety in carers that complete the ratings and also consider to what extent a particular screening instrument might indicate the presence or absence of a particular psychiatric disorder in which anxiety symptoms may be prominent. Comprehensive specialist speech and language assessment of those with aphasia and anxiety after stroke might also improve an understanding of the relationship between communication disorder and anxiety in this population.

As anxiety is distressing, challenging and appears to affect function, it is a substantial problem worthy of treatment attention. This might be medication and/or psychological therapy. One psychological therapy, behavioural activation, has already proven useful in treating people with aphasia who have depression (Thomas, Walker, Macniven, Haworth, & Lincoln, 2013) and there is preliminary evidence relaxation training might be useful to treat anxiety in this population (Eccles et al., 2016). A modified cognitive behaviour therapy that takes into account communication and cognitive disabilities has also been proposed for people with stroke (Kneebone, 2016), and there is casework support for this with respect to anxiety management (Kneebone & Jeffries, 2013).

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