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Review

Measures of visual hallucinations: Review and recommendations

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HIGHLIGHTS

- Overall, current measures that are used to assess visual hallucinations are inadequate.
- Visual hallucinations are a poorly defined construct.
- Measures lacked detail and service user involvement, psychometric properties and cultural use.
- Measures need further exploration and development to make for adequate use.

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ABSTRACT

Background: Studies designed to investigate visual hallucinations (VH) require reliable and valid measures that can appropriately capture peoples' experiences. This review aimed to assess the psychometric rigour and usefulness of VH measures.

Method: A systematic literature search was carried out against inclusion criteria (e.g. more than one specific question on VH, measures for adults in clinical and non-clinical populations). Eighteen measures were identified and rated against an adapted evaluation grid, which included essential criteria such as clear purpose and definition, psychometric properties including reliability and validity, and appropriate exploration of visual hallucinations.

Results: Measures could be categorised into 3 groups; those for general psychotic symptoms, those for all hallucinations, or those specifically for visual hallucinations. With one exception (the North East Visual Hallucinations Inventory), the measures were considered to be limited as they often targeted one population and hence lacked generalisability, or were limited in the characteristics of the visions that were described, or that psychometric properties were not adequately evaluated.

Conclusions: Measures of VH require further development. The need to establish a clearer definition of VH is essential to provide clarity and consistency within research and practice. Measures need to demonstrate good psychometric properties to indicate robustness whilst being sensitive to change to help in the evaluation of treatments. Other recommendations include developing cross-cultural measures and involving service users in item development.

1. Introduction

Visual hallucinations (VH) are defined as a visual percept, occurring when awake, which is not caused by an external stimulus and is not under voluntary control (Waters et al., 2014). Typically people see complex visual hallucinations, such as people, figures or faces (Dudley, Collerton, Nicholson, & Mosimann, 2013; Manford & Andermann, 1998). Less commonly, people experience simple VH, such as lines, dots or flashes of light (Oorschot et al., 2012).

Though many sporadic VH occur in healthy people, frequent VH tend to be associated with specific disorders. VH typically occur in 27% of people with psychosis (Waters et al., 2014) and are common in older adults, with rates of up to 93% in people with Lewy body dementia (LBD: Ballard et al., 1987), 75% Parkinson's disease (PD; Barnes & David, 2001; Urwyler et al., 2014; Williams, Warren, & Lees, 2008 and up to 60% in eye disease (Graham et al., 2011; Waters et al., 2014)).

VH are often distressing (Dudley et al., 2012), have a detrimental impact on functioning (Dudley et al., 2013; Gauntlett-Gilbert & Kuipers, 2003) and are associated with poorer treatment outcomes, more severe psychopathology and increased likelihood of being moved into care or

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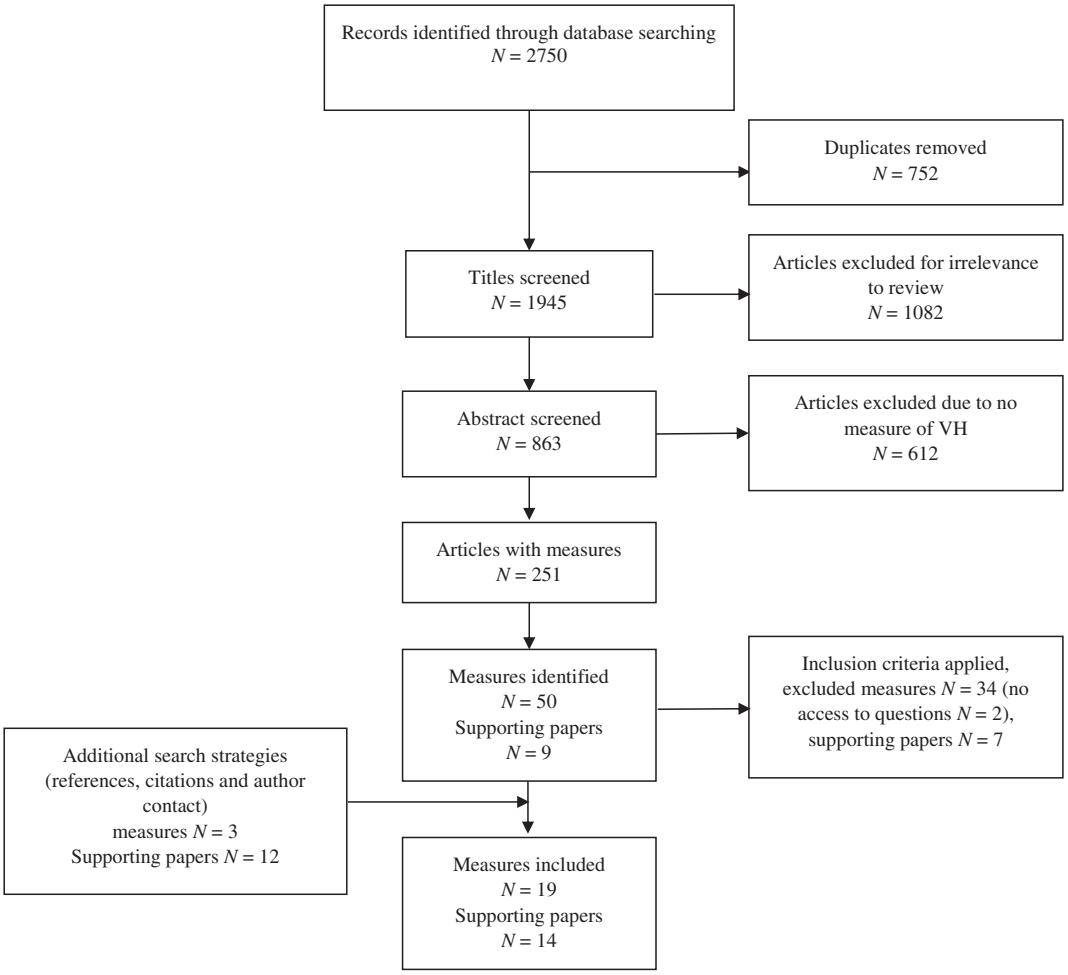

Fig. 1. Flow chart diagram of the search strategy and filtering.

hospitals (Waters et al., 2014). However, despite the detrimental impact of VH, they have been relatively under recognised and under researched across all disorders, particularly in relation to psychosis, and at present, there is a lack of effective treatment (Wilson, Collerton, Freeston, Christodoulides, & Dudley, 2015). Accurate assessment of VH is therefore essential to furthering the understanding of the phenomena, and in developing and evaluating effective treatments.

The adequacy of a measure of VH needs to meet specific criteria. First, the measure must have sound psychometric properties to demonstrate its usefulness and robustness (Martin & Savage-McGlynn, 2013). The measure must be reliable, which is the ability to consistently produce the same results under similar conditions (Field, 2013). It must also be valid in that it truly assesses what it aims to measure (Field, 2013). A key requirement in ensuring validity is that the construct (VH) is clearly defined as there can be confusion between a VH, an illusion or other misperception (Blom, 2010). The purpose of the measure also affects how it is evaluated (Frederick & Killeen, 1998). A measure's purpose may be in determining the prevalence of VH in clinical (Dudley et al., 2013) or non-clinical populations (Bell, Halligan, & Ellis, 2006; Morrison, Wells, & Nothard, 2000) or to explore theoretical aspects of VH (Gauntlett-Gilbert & Kuipers, 2003), or response to treatment (Hutton, Morrison, & Taylor, 2012; O'Brien & Johns, 2013; Wilson et al., 2015) which obviously need to be sensitive in order to detect change (Stratford, Brinkley, Riddle, & Guyatt, 1998; Ratcliff, Farhall, & Shawyer, 2011). Besides robust psychometric properties, a clear definition of the construct and purpose of the measure, a better measure will likely include items that have been developed with service users, as researchers may impose ideas about VH which risks missing aspects of the actual experiences (INVOLVE, 2012).

Helpfully, previous reviews of measures of a closely related phenomenon, auditory hallucinations, have highlighted further considerations that are also relevant to an evaluation of measures of VH. These included the exploration of a wide range of phenomenological characteristics, large validation samples, ease of administration, acceptability of the language and content of measures, use of self-report measures, and consideration of the emotional impact, attitudes and beliefs associated with people's hallucinations (Frederick & Killeen, 1998; Ratcliff et al., 2011).

To date, no equivalent review of measures of VH has been undertaken. Given the prevalence, impact and emerging interest in treatment, it now seems timely to systematically review the adequacy of existing measures of VH against these key criteria considered above.

1.1. Aims

This systematic methodological review considers whether current measures are adequate for assessing VH. As this is the first review of its kind, and VH are a relatively neglected area of research the present review includes a range of measures that cover three broad types; those that are specific to VH, general hallucination measures and general psychosis measures. Given the relative paucity of research specifically on VH they are often assessed using a general hallucination or psychosis measures; given this it was appropriate to include this broad range to ensure that clinicians and researcher can make a considered choice about the appropriateness of measures to assess VH. Published and unpublished measures of VH across clinical and non-clinical populations were compared against adapted quality assessment criteria to address this aim.