



## Letter to the editor

**Assessing psychosis in the general population:  
Self-rated versus clinician-rated**


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## To the Editors

Studies showing that psychotic symptoms are common in the general population have for some time been accumulating. It has been argued that this points to a 'psychosis continuum', where psychosis is believed to be on a continuum with normal experience. Yet, critics have raised serious concerns about the validity of the assessments of psychosis in such studies (Parnas and Henriksen 2016).

A recent review reported the prevalence of psychotic experiences in the general population to be 7.2% (Linscott and van Os 2013), whereas a WHO survey from 2015 reported a prevalence of 5.8% (McGrath et al. 2015). Typically, two methods are used to assess psychosis in the general population: 1) by a structured interview conducted by a lay-interviewer, for instance The Composite International Diagnostic Interview (CIDI); 2) by structured self-rating questionnaires such as 'psychosis-like symptoms' (PLIKS). Positive answers to such questionnaires are interpreted as tantamount to psychosis.

This methodology has been questioned by several authors, e.g., Schultze-Lutter and colleagues, who examined a sample of help-seeking individuals that contacted a service for early detection of psychosis. They found that self-rated 'psychosis-like' experiences were poor estimates of attenuated psychosis and frank psychosis (Schultze-Lutter et al. 2014). In another study, Stanghellini and colleagues compared the answers of a group of schizophrenia patients with a group of university students on a self-rating questionnaire concerning hallucinations, i.e. the Revised Hallucination Scale (RHS). If they responded positively to an item of the RHS, the participants were required to provide an example of their own experiences concerning that item. Quantitatively, both groups reported hallucinations, but blinded assessment of the participants' descriptions revealed qualitative differences between the answers of the two groups, finding only genuine hallucinations in the patient group. The authors concluded that hallucinatory or hallucinatory-like experiences cannot be reliably or validly assessed, in a non-clinical population, by self-rating questionnaires (Stanghellini et al. 2012). Finally, US National Comorbidity Survey found that the structured interview had limited utility in detecting psychosis in the general population (Kendler et al. 1996).

In this study, we investigated if positive answers to a self-rated questionnaire for 'psychosis-like' symptoms are valid indicators of psychosis in the general population.

## 1. Methods

This cross-sectional, interview study is a sub-study of a larger ongoing prospective cohort study (the Lolland-Falster Health Study – LOFUS), examining the general population.

The data collection in the LOFUS encompasses questionnaires, physical examination, and biological samples. The questionnaires include items for psychosis-like-symptoms (PLIKS-LOFUS). PLIKS-LOFUS is an adapted version of a 12 core elements screening tool for psychosis (PLIKSi) (Horwood et al. 2008). The PLIKS-LOFUS is shown in Table 1.

During June 1st 2017 to May 31st 2018, 229 participants from the general population reported to have had at least one psychosis-like-experience in combination with a positive response to the impact question: 'Did these experiences have any effect on you or on the relation with your family?'. 40 of these volunteered for clinical assessment by the present study. They were all above the age of 18.

The participants underwent a semi-structured interview, assessing psychopathology. Nurses with special training in psychopathology conducted the interviews. They had 2–5 years of experience in assessing psychosis among help-seeking individuals in a team for early detection of psychosis. All assessments were discussed with an experienced senior psychiatrist and researcher (JN).

The study was approved by the relevant Ethic Committee (LOFUS SJ-421) and the Data Protection Agency (REG-047-2017).

## 2. Results

7 of the 40 participants (17.5%) were found to have had a psychotic episode. 4 of these were already in psychiatric treatment for psychosis. A total of 3 (7.5%) unknown cases of psychosis were identified by the PLIKS-LOFUS.

Only 5 participants were younger than 40 years. The age of the 3 new cases of psychosis was respectively 51, 60 and 61 years. Notably, when the psychiatric understanding of an item was conveyed to the participants, many of them were surprised and reported to have understood the questions in quite different ways.

## 3. Discussion

Our clinical assessment of participants in the general population, who, using a self-rating scale, reported 'psychosis-like' experiences found that 82.5% of the participants were in fact false positives, showing a lack of correspondence between clinical assessment and self-rating of psychosis.

Interestingly, the age profile in our sample was notably higher than in first-episode psychosis samples, where the mean age is typically in the 20's. This was also the case for the 3 participants, who were identified as new cases with psychosis—they were all above 50 years old. This

**Table 1**

Self-rating questionnaire for psychosis-like symptoms (PLIKS-LOFUS).

1. Some people believe that their thoughts can be read. Have other people ever read your thoughts?
  2. Have you ever believed that you were being sent special messages, for example through TV, radio or computer or that something such as a program had been arranged just for you alone?
  3. Have you ever felt that you were being followed or spied on?
  4. Have you ever heard voices that other people could not hear?
  5. Have you ever felt that you were under the control of some special power?
  6. Have you ever seen something or someone that other people could not see?
  7. Have you ever experienced one or more of the following:
    - that your thoughts were taken out of your mind against your will?
    - that the thoughts of someone else were inserted into you against your will?
    - that your thoughts were so loud that people around you could hear what you were thinking?
  8. Have you ever felt that you were a very important person or that you had special powers or abilities?
- Impact questions:
9. Did these experiences have any effect on you or on the relation with your family?
  10. Did these experiences happen only within 2 h after using drugs?
  11. Did these experiences only ever happen when falling asleep or waking up?

suggests that LOFUS-PLIKS identifies another group than that usually identified in first-episode psychosis studies.

When assessing psychosis, it is necessary to include the experiential content (the 'what'), the structure of the experience ('how'), and the context in which the experience occurs (Jansson and Nordgaard 2016). This is not possible with self-rating questionnaires—they are by their very nature context-stripping procedures, with an exclusive focus on content, and, in our view, they are not epistemologically adequate for validly examining psychosis (Nordgaard et al. 2013).

The major limitation of this study is the low number of 'psychosis-positive' individuals from the main LOFUS study, who accepted to participate in our clinical evaluation. Nonetheless, the results remain valid for the 40 individuals, who participated and underwent psychopathological evaluation. Our findings suggest that the kind of experiences that participants have in mind, when positively answering a question concerning psychotic experiences in the self-rating scale, do not necessarily correspond to a clinician-rated understanding of psychosis. In brief, positive answers to the PLIKS-LOFUS do not seem to be a valid indicator of psychosis in the general population. Our results corroborate previous studies that critically have questioned the validity of "psychosis" research in the general population based solely on self-rating scales. This has potential implications for the psychosis continuum hypothesis, which draws heavily on studies that apply self-rating scales to assess psychosis in the general population.

### Conflicts of interest

All authors declare that they have no conflicts of interest.

### Contributors

JN designed the study and wrote the protocol together with UHH, LHH and ES. MBP supervised the data collection. JN wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

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