

Data Dictionary - List of measures

1. An adapted version of the questionnaire used in the Office for National Statistics **Time Use Survey** (Short, 2006; adapted by Hodgekins, French, et al., 2015) was used to capture hours per week engaged in structured activity. This is calculated as the sum of hours per week over the past month spent in work, education, voluntary work, housework and chores, and childcare, as well as in voluntary and structured leisure activities, sports and hobbies. This measure was used as a proxy for social functioning as it provides an operationalised way to assess the behavioural aspects of functional recovery (Hodgekins et al., 2015) and it has been associated with reduced mental health symptoms and better well-being (Eklund et al., 2009; Gershuny, 2011).
2. The **Comprehensive Assessment of At-Risk Mental States** – Short form (CAARMS; (Yung et al., 2005)) is a semi-structured interview measure and was used to assess psychopathology considered to be indicating an imminent transition to a first episode of psychosis. It included the following sections: unusual thought content, non-bizarre ideas, perceptual abnormalities, and disorganised speech. For each section severity, frequency, duration and distress of symptoms were assessed. CAARMS was used to determine presence of at ultra-high risk (UHR) for psychosis onset status.
3. The **Structured Clinical Interview for Axis-I DSM-IV Disorders** (SCID-I-RV; (First et al., 2002) modules B (Psychotic symptoms) and C (Psychotic disorders) were rated for participants reaching psychotic threshold in the CAARMS interview to establish a research diagnosis of psychosis, if applicable.
4. The **Mini International Neuropsychiatric Interview (MINI)** (Sheehan et al., 1998) for psychotic disorders studies (Version 7.0.2) was used as a diagnostic interview measure. MINI is a structured interview that assesses psychiatric disorders according to DSM-V criteria.
5. The **Beck Depression Inventory-II** (BDI-II; (Beck et al., 1996) is a widely used 21-item self-report measure exploring the presence and severity of depressive symptoms “in the past two weeks, including today”, aligning with the depressive symptom criteria of the DSM-IV. Each item is scored on a scale from 0 to 3, with overall scores ranging from 0 to 63. Higher scores represent greater levels of depression.
6. The **Beck Anxiety Inventory** (BAI, (Beck & Steer, 1993) is a 21-item self-report questionnaire, exploring the presence and severity of symptoms of somatic and

psychological anxiety in the past week. Each item represents a symptom of anxiety which is scored on a 4-point scale anchored by (0) "Not at all" = 0 and "I could barely stand it" = 3. Possible overall scores range from 0 to 63, with higher scores indicating more severe anxiety.

7. The **shortened Person's Relating to Others Questionnaire** (PROQ-3; (Birtchnell et al., 2013) is a 48-item self-report measure that explores negative relating to others. It contains eight subscales of negative relating, each containing one positive and five negative items. Each item is scored on a 4-point Likert-type scale ranging from "Nearly always true" = 3 to "Rarely true" = 0. Each scale can be scored from 0 to 15 and possible overall scores range from 0 to 120. PROQ-3 is based on Relating Theory ((Birtchnell, 1996). According to this theory, interpersonal relating can be represented by two intersecting axes: a horizontal, proximity one representing the degree to which we need to become involved with or separated from others (with polarities of 'closeness' and 'distance'), and a vertical, power one concerning the degree to which we choose to exercise power over others or permit others to exercise their power over us (with polarities of 'upperness' and 'lowerness'). Each position represents both a state of relatedness and is described with two words, one referring to the vertical and horizontal axis, respectively. For the four polar positions the word neutral is used where the word for the other axis is missing. This creates the following position names: upper neutral (UN), upper close (UC), neutral close (NC), lower close (LC), lower neutral (LN), lower distant (LD), neutral distant (ND) and upper distant (UD). The PROQ-3 is only measuring negative relating for each relating position.
8. The **Social Comparison Scale** (SCS; (Allan & Gilbert, 1995) is a self-report questionnaire that measures how individuals see themselves compared to social others in terms of social rank, attractiveness and belongingness. It consists of eleven items which are rated on a semantic differential response format (e.g., inferior-superior), using a scale of 1–10. Possible scores range from 11 to 110 with lower scores indicating feelings of low social status and rank.
9. The **Social Connectedness Scale** (mSCS; adapted from (Lee & Robbins, 1995) is a self-report questionnaire which assesses an individual's sense of connectedness and belongingness with their social environment. It consists of 8 items rated on 5-point Likert scale, ranging from "Strongly agree" = 1 to "Strongly disagree" = 6. A total score was calculated with scores ranging from 8 to 48, with higher scores reflecting greater sense of social connectedness with social others and society.

10. The **Brief Core Schema Scales** (BCSS; (Fowler et al., 2006) was used to measure the level of negative and positive schematic beliefs about self and others. BCSS is a 24-item self-report and consists of four subscales of six items, namely “Positive Self”, “Positive Others”, “Negative Self” and “Negative Others”. Each item is a belief (e.g., “Others are devious”) that the participant first rates as “YES”/”NO” to indicate if they hold the belief. If they do, then they rate the strength of the belief on a 4-point Likert scale from “Not at all” = 0 to “Believe it totally” = 4. Each subscale total score ranges from 0 to 24.
11. The **Support and Strain Scales self-report questionnaire** (SSS) (Walen & Lachman, 2000) was used as a measure of perceived support and strain from peers, family and romantic partners. For those without a romantic partner, mean overall support and strain was calculated from the peer and family scales only.
12. The **Psychotic Symptom Rating Scales–Auditory Hallucinations Scale** (PSYRATS-AH; (Haddock et al., 1999) was used to assess the severity, distress and characteristics of the voice-hearing experience. PSYRATS-AH is semi-structured interview consisting of eleven items relating to voice-hearing over the past week. All items are scored on a 5-point scale, from 0 (absent) to 4 (severe) and inquire about frequency, duration, location, loudness, beliefs about origin, negative content (amount/degree), distress (amount/intensity), disruption to individual’s life and perceived controllability of the experience. According to recent structural equation modelling, there are four sub-scales: distress (amount and degree of negative content, amount and intensity of distress, controllability), frequency (frequency, duration and disruption), attribution (location and beliefs about origin of voices) and loudness ((Woodward et al., 2014).
13. The **Beliefs about Voices Questionnaire-Revised** (BAVQ-R; (Chadwick et al., 2000) is a 35-item self-report questionnaire used to assess beliefs about voices as well as emotional and behavioural responses to voices. Based on a factor analysis by (Strauss et al., 2018), two subscales for beliefs about voices were used, persecutory beliefs (including malevolence and omnipotence) and benevolence beliefs, as they have shown excellent internal consistency ($\alpha = .88$ and $.87$ respectively). Response to voices was measured with two subscales, resistance and engagement, that were calculated to include both behavioural and emotional modes of response together, as they have demonstrated excellent internal consistency ($\alpha = .87$ and $.88$ respectively; Strauss et al., 2018). Items are rated on a 4-point Likert scale, from “Disagree” = 0 to “Strongly agree” = 3. Subscale scores were calculated as the mean scores of their items, ranging from 0 to 3. Only the persecutory beliefs and resistance subscales were used for the purposes of this study.

14. The **Voice and You** (VAY) (Hayward et al., 2008) is a 28-item self-report measure that was administered to record the interrelating between the participants and their predominant voice. If there was no predominant voice, participants were asked to respond considering their voice-hearing experience all together. The VAY is divided into four subscales. Two concern the voice's relating toward the hearer, voice dominance and voice intrusiveness with seven and five items respectively. The other two concern the way the hearer relates toward the main voice, namely hearer distance with seven items and hearer dependence with nine items. Items are scored on a 4-point Likert scale, ranging from "Nearly always true" = 0 and "Rarely true" = 3 and scoring for each subscale is calculated as the item total.

Copies of the questionnaires are not included due to copyright issues.

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