

Agreement Between Self- and Parent-Reports of Prodromal Psychotic Symptomatology

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Abstract

The schizophrenia prodrome has gained considerable research attention in recent years. Early identification of individuals at risk for psychotic disorders may improve outcomes for those individuals, as well as identify participants for research that aims to develop effective intervention strategies for this population. Effective screening methods from multiple parents facilitate identification and aid in accurately ascertaining the symptom picture for this population. In this study, the Prodromal States Questionnaire (PSQ) was completed by 27 participant-parent pairs who were referred for intake assessments to the Center for the Assessment and Prevention of Prodromal States at UCLA. The PSQ consists of a 92-item self-report measure of prodromal symptomatology, along with a parallel version for parents or other informants. Items are divided into major scales of positive, negative, disorganized, and general symptoms. Inter-rater agreement was analyzed using Cohen's Kappa statistic (k). Twenty-one subscale items reached the 'moderate' agreement criterion of .41 k or above. None of the scale averages showed good agreement. The majority of individual subscale items that showed good agreement were positive symptoms. Although these data preliminarily suggest higher agreement on positive symptom presence, further research and comparison with clinician ratings are needed.

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In recent years, the prodrome has become a focal point in schizophrenia research (Cornblatt, Lencz, & Obuchowski, 2001; Rosen, Woods, Miller, & McGlashan, 2002). The 'prodrome' is described as "the early symptoms and signs of an illness that precede the characteristic manifestations of the acute, fully developed illness" (Yung & McGorry, 1996). The prodromal phase in schizophrenia is an important area of study because early intervention with individuals at risk of developing the disease may help lead to better outcomes (McGlashan, 1996; McGorry et al., 1996). A prolonged 'duration of untreated psychosis' (DUP) for participants who have already converted to schizophrenia has been associated with increased severity, persistence, and global damage done by the disorder (McGlashan, Miller, & Woods, 2001). It is hoped that prospective research into the etiology and course of this illness may help researchers develop an intervention protocol for those at risk (McGorry, 1999).

Yung and colleagues (1996) have determined a set of research symptom criteria that define three types of prodromal syndromes, based on retrospective reports of schizophrenia patients and their relatives. These criteria have been modified slightly by McGlashan, Miller, and Woods (2001) and can be reliably assessed by using the Structured Interview for Prodromal Syndromes (SIPS). The SIPS identifies a 'vulnerability group,' which includes individuals who have had a precipitous decline in functioning in the last year along with either a first-degree relative with a psychotic disorder or a diagnosis of Schizotypal Personality Disorder (American Psychiatric Association, 1994). The 'attenuated symptom' group includes individuals with sub-threshold psychotic symptoms, such as hearing whispers of voices or excessive suspiciousness. The 'brief limited psychosis' group includes individuals who have recently experienced fully

psychotic symptoms for very brief periods of time. Individuals diagnosed as prodromal according to the SIPS have a 54% chance of developing a psychotic disorder within one year (Miller et al., 2002). The SIPS requires ratings in four symptom categories: ‘positive’ symptoms (such as delusions, suspiciousness, and hallucinations), ‘negative’ symptoms (such as withdrawal and decreased experience of emotion), ‘disorganized’ symptoms (such as odd behavior or bizarre thinking), and ‘general’ symptoms (such as sleep and motor disturbance).

Most previous studies of the prodrome have involved retrospective research with individuals who have already converted to schizophrenia or their first-degree relatives. However, neither technique allows for the study of prodromal symptoms as they unfold. Prospective research is critical in order to perform repeated measures over time through the onset of the disorder. This increases accurate symptom measurement and allows for the unmasking of schizophrenia predictors that cannot be studied by other means. The eventual goal of such research is to prospectively identify individuals at risk early enough so that intervention can take place. Data have preliminarily suggested that early intervention may reduce the likelihood that prodromal individuals develop psychosis (Falloon, 1992).

This sort of research requires that prodromal individuals be accurately and effectively identified in the population. Brief screening measures can help to identify those who might benefit from a full-length interview and who might be at risk for development of psychosis. Once such individuals have been identified, their symptom experience can be monitored. Although first hand accounts from prodromal individuals are the primary source of information about their symptoms, reports from family members and other parents can also help to better illustrate the symptom picture and aid in early detection. A certain amount of disagreement is expected, and the parent contribution can provide information that the prodromal individual does not or cannot

provide. For example, a parent might accurately report about certain symptom areas where the participant lacks insight or awareness, or is guarded about describing his or her experience. Eventually, a comparison of both reports to clinician ratings can be made so that it can be determined who is more aligned, child or parent, with the clinician ratings.

In order for such research to become a possibility, it is necessary to accurately and effectively identify prodromal individuals, their symptoms, and how accurately they report these symptoms. Examining the degree of agreement between self- and parent-reports can help to determine which sources of information should be used in screening and diagnosing prodromal syndromes. This is the aim of the study at hand.

The present research utilizes a prospective research methodology. Data were collected from multiple informants (including parents, other relatives, and significant others whom from here after will be referred to as parents). Participant and parent reports of prodromal symptomatology were measured using the Prodromal States Questionnaire (PSQ; Loewy, Cannon, & Raine, 2002). Analyses examined agreement between reporters (self and parent). Although the study at hand was conducted as part of a larger research protocol investigating the prodromal phase by tracking prodromal participants over time, the current analyses are limited to data collected at the first time point. Once follow-up data have been collected, further analyses can be made. It is an eventual goal of this research to measure comparison with clinician ratings and the predictive validity of the PSQ by tracing who develops the illness. The present study, however, will focus solely on participant/parent agreement on the PSQ at baseline.

Method

Participants

The sample included 27 participant-parent pairs. Participants were 18 females and 9 males. Parents were 24 females and 3 males (23 mothers, 3 fathers, and 1 female significant other of a participant). Participants were referred to the Center for the Assessment and Prevention of Prodromal States (CAPPS) at UCLA. CAPPS is a program that seeks to identify and treat individuals at risk for development of schizophrenia and other psychotic disorders. Referrals came from clinicians in the community and local schools. All participants were financially compensated for their participation. Based on answers to the Structured Interview for Prodromal States (SIPS), participants who met criteria for a prodromal syndrome were included in the research study (N = 12) while individuals who met criteria for psychosis, substance dependence, declined to participate, or did not otherwise meet prodromal criteria were excluded from the larger study (N = 15). This analysis includes both included and excluded participants. Although in some cases more than one parent completed a PSQ, preference was given to questionnaires completed by mothers, fathers, then significant others, in that order. All participants gave their informed consent.

Measures

The SIPS was used to assess the presence of prodromal symptom criteria. The SIPS is an interview developed by Miller and colleagues (2002) to diagnose prodromal individuals. Items on the SIPS are divided into major scales including positive symptoms, negative symptoms, disorganized symptoms, and general symptoms.

All participants completed the Prodromal States Questionnaire (PSQ), which is a 92-item self-report measure with true/false answers. The questionnaire takes about 15 minutes to

complete. Answers are divided into four major scales that measure positive, negative, disorganized, and general symptoms (identical to the SIPS). Questions include items adapted from the Schizotypal Personality Questionnaire (SPQ) (Raine, 1991) as well as SIPS probe questions. Several original items were also added to the questionnaire. Preliminary analyses indicate that the self-report version of the PSQ has good psychometric properties and shows good concurrent validity with SIPS diagnoses (Loewy, et al., 2002).

Procedure

All participants and their parents completed the PSQ at the intake assessment at CAPPS. Every effort was made to ensure that parents and children completed the questionnaires separately. Interviewers administered the SIPS to determine study eligibility. All participants answered the positive symptom scale questions on the SIPS, but some excluded individuals did not complete the full interview if it was clear that they did not meet criteria for a prodromal syndrome.

Results

Cohen's Kappa statistic (k), which assesses inter-rater agreement on categorical variables, was used to analyze agreement between the participant/parent pairs for each item of the PSQ. Agreement level was interpreted using the guide provided by Landis & Koch (1977). Table 1 provides a list of the agreement criteria suggestions made by Landis & Koch. Out of 92 items on the PSQ, 21 items reached the "moderate" ($k \geq .41$) agreement criterion. The remaining 71 items showed agreement in the range of $k = -.40$ to $.40$. A list of individual item kappa scores for items showing moderate agreement or above is provided in Table 2. Figure 1 depicts the percentage of items within each subscale that reached the moderate or above criterion level. Within-subscale kappa averages ranged from $.14$ to $.44$. Only one subscale average, "olfactory

hallucinations”, showed moderate agreement ($k = .44$). None of the major scale averages reached the moderate agreement criterion. Average kappa scores for both major scales and subscales are listed in Table 3.

Discussion

The participants and parents demonstrated agreement on a number of items. They also disagreed on numerous items, suggesting that parents have some additional information to contribute to a child’s report. These data show moderate agreement between parents and their children on 23% of the PSQ items. A higher percentage of positive symptom items reached the moderate agreement criterion (33%) than the other scales. The CAPPs clinic sample is a referred, treatment-seeking group. This may play a role in the high agreement for positive symptoms, as these tend to be presenting symptoms that are the reason for seeking treatment at CAPPs. It is possible that a general clinic or school sample might show a different disbursement amongst the symptom categories.

Overall, there is a high level of disagreement between the participant and parent reports. At this point, the source of parent/child disagreement is not known. Possible explanations for disagreement include participant non-reporting or non-awareness of a present symptom, and parent non-reporting or non-awareness of a particular symptom. The disagreement between parent and child reports shown in this study may indicate that both perspectives are useful in screening for prodromal symptoms of psychosis. Further research in these areas is necessary in order to determine the utility and scope of parent reports. Eventually, a comparison to SIPS clinician ratings would show whether child or parent ratings are more in line with ratings made by clinicians. This sort of data would aid researchers to understand in what instances it is most important to get a parent report.

Predictive validity of the PSQ items will also be examined when the participants diagnosed as prodromal are assessed over time, through the risk period for conversion to psychosis. Most important to this research area is whether a parent's report contributes any predictive power to the participant's report. It will also be valuable to monitor what particular symptoms are most predictive of conversion. The gathering of more PSQ data from clinic and general population samples, comparison to parent reports, and tracking over time should help provide answers for these questions.

Although these data suggest that parents can provide a great deal of symptom information in addition to their child's self-report, further investigation will help to clarify the specific reasons for discrepant agreement. Once a better understanding of this relationship has been attained, and the degree of agreement between parents and clinician symptom ratings have been established, the utility of the parent-report version of the PSQ as a screening device can be assessed. If found effective, the informant PSQ can be utilized in psychiatric facilities and elsewhere to help identify who may be at risk for the eventual development of psychosis and provide an opportunity for intervention at this early stage.

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Table 1. Kappa interpretation as suggested by Landis & Koch (1977):

Kappa (k)	Interpretation
< 0	Poor
0-.20	Slight
.21-.40	Fair
.41-.60	Moderate
.61-.80	Substantial
.81-1.00	Almost perfect

Table 2. Subscale items with "moderate" agreement or above ($k > .40$)

Item	Scale	Kappa	Item	Scale	Kappa
Item 46	Ideas of reference	0.72**	Item 9	Olfactory hallucinations	0.47
Item 83	Dysphoria	0.67**	Item 27	Telepathy	0.47
Item 36	Auditory hallucinations	0.61**	Item 55	Perplexity	0.47
Item 75	Magical thinking	0.60	Item 6	Role functioning	0.46
Item 79	Visual hallucinations	0.57	Item 84	Visual hallucinations	0.46
Item 24	Magical thinking	0.55	Item 42	Social isolation	0.45
Item 54	Odd behavior	0.55	Item 80	Social anxiety	0.45
Item 48	Decreased experience of emotion	0.54	Item 21	Social isolation	0.44
Item 32	Telepathy	0.51	Item 52	General hallucination	0.44
Item 76	Paranoid	0.49	Item 87	Social anxiety	0.44
Item 57	Perplexity	0.48			

** Item meets "substantial" criterion of $k > .60$

Table 3. Average agreement (k) on major scales and subscales

Scale/Subscale (number of items)	Avg. kappa	Scale/Subscale (number of items)	Avg. kappa
<i>Positive (39)</i>	<i>0.28</i>	<i>Disorganized (19)</i>	<i>0.14</i>
Olfactory (2)	0.44**	Attention (3)	0.29
Telepathy (3)	0.36	Hygiene (3)	0.17
Visual (4)	0.33	Conceptual (6)	0.14
Magical (5)	0.31	Odd behavior (6)	0.08
Auditory (5)	0.30	Bizarre thought (1)	0.05
Unusual thought (22)	0.28	<i>General (15)</i>	<i>0.23</i>
Paranoid (3)	0.28	Dysphoric mood (7)	0.28
Perplexity (5)	0.27	Role function (4)	0.24
Hallucinations (17)	0.27	Stress (3)	0.18
Reference (4)	0.25	Sleep problem (1)	0.00
Grandiose (1)	0.22	<i>Total (92)</i>	<i>0.23</i>
Somatic (3)	0.16		
General (3)	0.14		
Delusional (1)	0.11		
<i>Negative (20)</i>	<i>0.21</i>		
Social isolation (5)	0.40		
Social anxiety (3)	0.26		
Avolition (2)	0.26		
Experience emotion (5)	0.18		
Express emotion (5)	0.02		

** Reached "moderate" criterion level (k > .40)

Figure 1. Within-scale percentage of items with "moderate" agreement or above ($k > .40$)

