

Self-concept and Narrative Identity in Youth at Clinical High Risk for Psychosis

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Background and Hypothesis: Disturbances of the narrative self and personal identity accompany the onset of psychotic disorders in late adolescence and early adulthood (a formative developmental stage for self-concept and personal narratives). However, these issues have primarily been studied retrospectively after illness onset, limiting any inferences about their developmental course. **Study Design:** Youth at clinical high risk for psychosis (CHR) ($n = 49$) and matched healthy comparison youth ($n = 52$) completed a life story interview (including self-defining memory, turning point, life challenge, and psychotic-like experience) and questionnaires assessing self-esteem, self-beliefs, self-concept clarity, and ruminative/reflective self-focus. Trained raters coded interviews for narrative identity themes of emotional tone, agency, temporal coherence, context coherence, self-event connections, and meaning-making (intraclass correlations >0.75). Statistical analyses tested group differences and relationships between self-concept, narrative identity, symptoms, and functioning. **Study Results:** CHR participants reported more negative self-esteem and self-beliefs, poorer self-concept clarity, and more ruminative self-focus, all of which related to negative symptoms. CHR participants narrated their life stories with themes of negative emotion and passivity (ie, lack of personal agency), which related to positive and negative symptoms. Reflective self-focus and autobiographical reasoning were unaffected and correlated. Autobiographical reasoning was uniquely associated with preserved role functioning. **Conclusions:** This group of youth at CHR exhibited some, but not all, changes to self-concept and narrative identity seen in psychotic disorders. A core theme of negativity, uncertainty, and passivity ran through their semantic and narrative self-representations. Preserved self-reflection and autobiographical reasoning suggest sources of resilience and potential footholds for cognitive-behavioral and metacognitive interventions.

Key words: self-disturbances/self-concept/narrative identity/clinical high risk for psychosis (CHR)/developmental/psychotic disorders

Disturbances in self and identity pervade phenomenological accounts of psychotic disorders.¹⁻⁵ Individuals have reported, for instance, that “I myself am somehow not real,”^{6(p167)} that “my real self has left me,”^{7(p1034)} and that “my illness eradicated my sense of self . . . now I am engaged in the lifelong process of obtaining, maintaining, and slowly modifying my sense of who I am.”^{8(p25)} Self-disturbances were noted in Bleuler and Kraepelin’s seminal work^{9,10} and are now studied in research paradigms ranging from lab-based tasks to life story interviews.^{4,5,11-14} Disturbances to self and identity interfere with one’s ability to motivate behavior toward coherent personal goals and position oneself relative to others and the world, leading to substantial functional impairment and even suicidality.^{5,15,16} For these reasons, rebuilding a coherent sense of self is often considered to be an essential component of functional recovery from psychotic disorders.¹⁷⁻²⁰

Much of the work on self-disturbances has focused on basic self-disturbances (alterations to the prereflective sense of self as a subject of experience in the present moment).²¹ Basic self-disturbances have been studied throughout the developmental course of psychotic disorders and have been found in individuals at risk for psychosis and those experiencing a first episode of psychosis.⁵ Narrative self-disturbances (alterations to the metacognitive sense of self as an individual with a personal identity that persists through time) are also well documented in psychotic disorders.^{13,15} In contrast to basic self-disturbances, however, the development of narrative self-disturbances in the early stages of psychotic illness remains relatively unknown.

Development of Narrative Self-disturbances

Generally speaking, the narrative self emerges over time through repeated coactivation of basic self-experience with encoding and retrieval of autobiographical memories.^{21–24} As bits of semantic self-knowledge and event-specific episodic memories accumulate over time, they are integrated into broader personal beliefs and enduring narratives.^{21,22,24} Two relevant features of the narrative self follow from this rough sketch: first, disruptions in the basic self should have downstream consequences for the narrative self; second, developmental processes should be integral to the narrative self as it changes over the lifespan to accommodate new knowledge, memories, and interpretations.

Developmentally, psychotic disorders manifest during a period of rapid development in personal beliefs and narratives. Late adolescence and early adulthood are normatively a period in which the self-concept becomes markedly more complex and differentiated (*self-concept*: beliefs a person holds about themselves, eg, “I am kind,” “I am a good student,” “I have a clear idea of who I am”).^{25,26} At the same time, narrative identity becomes an essential tool to tie together personal experiences into an integrated, cohesive life story (*narrative identity*: stories a person tells about themselves, eg, “My first romantic relationship was an important experience because it taught me the value of kindness and empathy”).^{27–29}

The incidence of a psychotic disorder interrupts these developmental trajectories, dramatically changing a person’s life experiences and, consequently, their self-beliefs and personal narratives.^{4,12} For instance, normative adults’ personally significant memories are more likely to focus on early adulthood, personal achievements, and relationships, whereas individuals with psychotic disorders’ personally significant memories are more likely to focus on late adolescence, psychotic symptoms, hospitalizations, and traumatic events.^{30–32} What is more, psychotic disorders attack capacities to construct and modify beliefs and narratives, through their effects on cognition,³³ language,³⁴ temporal perception,³⁵ autobiographical memory,³² and metacognition.¹⁵ Thus, the onset of a psychotic disorder: (1) interrupts the normative development of the narrative self and (2) impairs abilities to recover from the interruption. This double hit sets the stage for a lifetime of difficulty constructing and maintaining a narrative sense of self.^{12,13,15}

Most studies of these topics have relied on retrospective reports of individuals with established psychotic disorders. Developmental research with individuals at risk for psychosis or in the early stages of psychotic disorders is needed to uncover the precise nature and timing of disruptions to self-concept and narrative identity. One particularly relevant population is youth at clinical high risk for psychosis (CHR). CHR is a risk state that often precedes the incidence of psychotic disorders. Youth

at CHR (typically 14–25 years old) exhibit brief or attenuated psychotic symptoms and/or genetic risk and functional decline, warranting clinical attention but not meeting the criteria for a psychotic disorder.³⁶ Roughly 20%–25% of these individuals will develop a psychotic disorder within 2 years of identification.^{37,38} Studies of youth at CHR can identify antecedents of the severe narrative self-disturbances observed in psychotic disorders and highlight risk factors, protective factors, and intervention targets.

Self-concept and Narrative Identity in CHR

Qualitatively, many youth at CHR spontaneously discuss self and identity development as important personal issues.^{39,40} Quantitatively, lower self-esteem and more negative self-beliefs (compared with healthy controls) have been observed in CHR^{41–45} and linked to attenuated positive symptoms⁴⁴ and depression.^{41,42} These effects mirror findings on self-esteem and self-beliefs in chronic psychotic disorders.^{46–50} Longitudinal CHR studies have also shown that negative self-beliefs accompany worsening social and role function⁵¹ and predict transition to psychosis.⁴³ Other alterations in the self-concept, notably increased focus on self-experience⁵² and lack of self-concept clarity (ie, consistency, stability, and clarity of self-beliefs),^{53,54} have been observed in psychotic disorders but never examined in CHR.

Narrative identity is also profoundly affected in psychotic disorders. Variation in narrative identity can be described along 3 dimensions: motivational/affective themes (thoughts and feelings recalled in personal stories, which could be, eg, affectively positive vs negative, or agentic vs constrained by circumstances); narrative structure (concrete facts, context, and temporal sequencing that make a story comprehensible); and autobiographical reasoning (efforts to make sense of events, eg, to explain how events affected the person, or to derive lessons or insights from a story).⁵⁵ All 3 dimensions are severely impacted in psychotic disorders, with schizophrenia showing the broadest disturbances to narrative identity of any psychiatric disorder.^{13,15} Theoretically, according to a recent systematic review of narrative identity in psychotic disorders,¹³ motivational/affective themes should already be affected by nonspecific risk factors predating the onset of psychosis. In contrast, narrative structure and then autobiographical reasoning should break down early in the course of psychotic disorders as symptoms become more pronounced and impairing.¹³ Although 1 study has reported narrative identity disturbances in first-episode psychosis,⁵⁶ no studies have yet examined narrative identity in CHR.

In summary, some—but not all—of the problems with self-concept and narrative identity in psychotic disorders should also be present in CHR. Low self-esteem and

negative self-beliefs have previously been observed in CHR, and there are strong theoretical reasons to expect narrative identity to be marked by painful and passive motivational/affective themes in CHR. Other aspects of the self-concept (self-focused attention and self-concept clarity) are likely to be affected in CHR. Other aspects of narrative identity (narrative structure and autobiographical reasoning) are less likely to be affected in CHR. Crucially, relationships between various aspects of the self-concept and narrative identity are unclear. Some changes to self-concept and narrative identity in CHR may not even be problems: they may be unrelated to psychiatric symptoms and functional impairment, or even sources of resilience buffering against symptoms' impact.

The Current Study

Integrative research on self-concept and narrative identity in CHR is an important next step for understanding the developmental trajectory of narrative self-disturbances, with the potential to identify risk factors, protective factors, and targets for cognitive-behavioral and metacognitive interventions. The current study aimed to generate a nomological network of self-concept and narrative identity in a sample of youth meeting CHR criteria, by examining group differences from a matched healthy comparison sample and relationships between self-concept, narrative identity, symptoms, and functional outcomes.

Method

Participants

Two groups of youths aged 14–24 were recruited from the community through a university-based psychosis risk research program in a large American city via newspaper, public transit, and Craigslist ads, e-mail postings, and community professional referrals. One group of participants ($n = 49$, mean age = 20.9) met the criteria for a CHR syndrome based on the Structured Interview for Psychosis-Risk Syndromes (SIPS).³⁶ The second group was a matched sample of healthy comparison participants (HC; $n = 52$, mean age = 21.87). Exclusion criteria for the HC group included any psychotic disorder in a first-degree relative, a psychosis-risk syndrome as assessed by the SIPS, or any current psychotic disorder. In both groups, participants with a history of head injury, neurological disorder, substance dependence, or any DSM-IV-TR psychotic disorder were excluded. While participants were not excluded from the HC group based on nonpsychotic symptomatology, psychiatric diagnoses were not common in this group. Seven of the 52 HC participants (13%) met the criteria for a current DSM-5 diagnosis, of whom 2 (4%) met the criteria for a current social or generalized anxiety disorder, 3 (6%) met the criteria

for another specified anxiety disorder, and 2 (4%) met the criteria for a mood disorder in partial remission.

All participants provided written informed consent. All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures were approved by Northwestern University's Institutional Review Board (Study#STU00203263). Measures

Clinical Interviews. Participants self-reported their demographic information and completed the SIPS, a semi-structured clinical interview for attenuated psychotic symptoms, ie, clinically significant psychotic-like experiences that do not meet full psychosis criteria.³⁶ Participants also completed the Global Functioning Scales,⁵⁷ a clinician-rated assessment of functional impairment in social and role domains.

Self-concept Questionnaires. To assess self-esteem, participants completed the Rosenberg Self-Esteem Scale, a commonly used 10-item measure of global self-esteem.⁵⁸ To assess self-beliefs, participants completed the self-beliefs scales of the Brief Core Schema Scales, a 24-item measure of core evaluative schemas about self and others designed for individuals with psychotic disorders.⁴⁸ To assess self-concept clarity, participants completed the Self-concept Clarity Scale, a 14-item measure of the extent to which self-beliefs are clearly and confidently defined, internally consistent, and stable.⁵⁹ To assess ruminative and reflective self-focus, participants completed the Rumination and Reflection Questionnaire, a 24-item measure of tendencies toward self-directed attention.⁶⁰

Life Story Interview. Participants completed a 15–20 min life story interview in which they narrated episodes from their lives and a significant personal challenge. The interview consisted of 4 sections, adapted from previously published narrative identity interviews and item content on attenuated psychotic symptom measures (see [table 1](#)).

Narrative Coding of Interviews. Narrative interviews were audio recorded and transcribed. Transcripts were coded for 6 narrative identity themes validated in previous research: agency, emotional tone, temporal coherence, context coherence, self-event connections, and meaning-making (see [table 1](#)). Each theme was scored separately in each of the 4 interview sections. Five independent raters participated, with a minimum of 3 raters scoring each theme in each interview transcript. Raters were blinded to participants' group membership and clinical and self-report results. Raters trained to a high degree of interrater reliability (ICC >0.80) on established coding systems for each theme prior to scoring

Table 1. Summary of brief life narrative interview and narrative identity themes

Section/Theme	Summary	ICC	CHR Mean (SD)	HC Mean (SD)
Interview sections				
Self-defining memory	An episode that happened at least 1 year ago, is clear and familiar, and is important for how the participant sees him- or herself. ⁶¹			
Turning point	An episode that marked an important change in the direction of the participant's life, or in how the participant sees him- or herself. ⁶²			
Life challenge	The single greatest challenge the participant has ever faced, including how it developed, how the participant addressed it, and its significance in the overall life story. ⁶²			
Psychotic-like experience	An unusual, strange, or profound experience that is hard to explain, in which it seems like the participant's mind is playing tricks, the world is not as it seems, or boundaries between the self and the world have become unclear (adapted from SIPS item content). ³⁶			
Narrative identity themes				
Agency	Motivational/affective: autonomy of the protagonist to initiate changes and exert control, ranging from complete powerlessness with all action motivated by external forces (−2) to strong agency with most or all action motivated by an active protagonist (2).	0.84	0.39 (0.50)	0.65 (0.47)
Emotional tone	Motivational/affective: overall balance of emotional content, ranging from strong negative emotion (−2) to strong positive emotion (2).	0.93	−0.40 (0.46)	−0.13 (0.55)
Context coherence	Narrative structure: placement of events in a specific time and place, ranging from no information about time or location (0) to specific information about both time and place (3).	0.88	1.91 (0.58)	2.02 (0.57)
Temporal coherence	Narrative structure: chronological sequencing of events, ranging from a list of actions with no temporal ordering (0) to a clear timeline in which most or all actions can be sequenced, with any deviations from the temporal sequence clearly marked and/or repaired (3).	0.77	1.73 (0.47)	1.87 (0.49)
Self-event connections	Autobiographical reasoning: connecting a personal experience to the present-day self, ranging from absence (0) to explicit/strong connection (2). Connections that revealed or changed something about the self were scored see ref. ⁵⁵ , then summed to create an overall self-event connections score (range 0–4).	0.80	1.30 (0.54)	1.37 (0.49)
Meaning-making	Autobiographical reasoning: deriving new knowledge from an experience by learning lessons or gaining insights, ranging from a total absence of meaning-making (0) to a clear effort to make meaning, resulting in generalizable new knowledge (3).	0.85	1.39 (0.55)	1.53 (0.49)

transcripts. Interrater reliability for the 6 themes was in the good to excellent range (all ICCs >0.76). After ICCs were calculated, final scores were averaged across raters. A small proportion of interview sections (23, 5.7%) were considered unrateable by consensus due to participants declining to answer certain questions or providing overly brief responses, leaving a total of 381 interview sections nested within 101 participants.

Data Analysis

All analyses were conducted in *R* v4.2.2.⁶³ Chi-squared tests and two-tailed *t*-tests examined group differences in demographic, clinical, and self-concept variables. Group differences in narrative identity themes were tested through linear mixed effects models. For each theme, group differences were tested in a model with group, gender, and age entered as fixed effects, and participant ID and interview section entered as crossed random effects. To test the interactive effects of group and interview section, a supplemental model

included group, gender, age, interview section, and the group × interview section interaction as fixed effects, with participant ID entered as a random effect.

To examine correlations between narrative identity variables and other study variables within the CHR group, participant-mean scores for each narrative theme were calculated as the mean of the 4 interview questions. To limit the number of comparisons and increase interpretability, narrative identity variables were then averaged within 3 established narrative identity dimensions (motivational/affective themes, narrative structure, and autobiographical reasoning).⁵⁵ Pearson correlations between narrative themes were examined to confirm the validity of averaging within narrative dimensions. Pearson correlations were then examined between narrative identity dimensions, self-concept variables, symptoms, and functioning within the CHR group, with False Discovery Rate correction for multiple comparisons.⁶⁴

Finally, hierarchical regression analyses examined the shared and unique effects of self-concept and narrative

identity on symptoms and functioning within the CHR group. For each outcome (positive symptoms, negative symptoms, role functioning, and social functioning), regression analyses were calculated with self-concept variables only (model 1), then narrative identity variables only (model 2), and finally with self-concept and narrative identity variables (model 3). Overall model fit (R^2) was compared between models using the multivariate Wald statistic to determine the incremental validity of self-concept and narrative identity variables (the Wald statistic approximates a likelihood ratio test, but is more robust to sample size with multiply imputed datasets^{97(sec5.3.4)}). Gender and age were included as covariates in all models to adjust for developmental effects. In correlation and regression analyses, missing data were handled by multiple imputation with predictive mean matching, with results pooled across 5 imputed datasets.

Results

Group Differences

Demographics, Symptoms, and Functioning in CHR vs HC. As shown in table 2, the CHR and HC groups did not differ on demographic variables. Participants in the

CHR group reported more severe positive and negative symptoms than participants in the HC group, and worse social and role functioning (all $P < .001$, all $d > 0.95$).

Self-Concept in CHR vs HC. As shown in table 2, participants in the CHR group reported more maladaptive levels of positive and negative self-beliefs, self-esteem, self-concept clarity, and ruminative self-focus, with effect sizes in the moderate to large range ($d = |0.50|$ to $|0.83|$). A trend suggested that the CHR group may also have reported higher levels of reflective self-focus compared with the HC group ($d = 0.41$, $P = .070$).

Narrative Identity in CHR vs HC. Results of linear mixed effects models adjusted for age and gender are shown in table 3. These models found that emotional tone was more negative in the CHR group, group difference = 0.324, $t(83.0) = 5.04$, $P = .002$. For example, a CHR participant narrated a self-defining memory of a past abusive relationship with strong negative emotional tone: “during that time, I was depressed, I was suicidal . . . there was no one being supportive of me . . . no one was ever going to believe me. So, I felt useless, I felt hopeless, I felt worthless, I felt like everything was wrong with me.”

Agency was also lower in the CHR group, group difference = 0.251, $t(93.6) = 2.73$, $P = .007$. For example, a CHR participant narrated a self-defining memory of

Table 2. Demographic, clinical, and self-report variables

Variable	CHR		HC		Comparison		
	Mean or <i>n</i>	SD or %	Mean or <i>n</i>	SD or %	<i>T</i> or χ^2	<i>P</i>	<i>d</i>
Age	20.86	2.78	21.87	3.47	-1.61	.109	0.32
Education (years)	14.19	2.31	14.77	2.22	-1.28	.203	0.26
Gender (male)	22	44.9%	33	63.5%	2.46	.117	
Race							
White/Caucasian	17	34.7%	25	48.1%			
African American	15	30.6%	8	15.4%			
Asian	7	14.3%	10	19.2%			
Other	10	20.4%	9	17.3%	2.30	.316	
Hispanic	13	26.5%	7	13.5%	2.11	.147	
Family income							
Less than \$39 999	17	34.7%	14	26.9%			
\$40 000–\$99 999	19	40.4%	18	34.6%			
\$100 000 or more	8	16.3%	17	32.7%			
Do not know/refused	5	10.2%	3	5.8%	3.28	.194	
Symptoms and functioning							
Positive symptoms	10.10	4.11	0.90	1.42	14.86	<.001	3.06
Negative symptoms	7.08	5.47	1.35	1.74	7.01	<.001	1.45
Social functioning	7.46	1.51	8.84	0.73	-4.77	<.001	1.00
Role functioning	7.74	1.41	8.72	0.93	-4.61	<.001	0.96
Self-concept							
Negative self-beliefs	0.86	0.97	0.25	0.28	3.85	<.001	0.83
Positive self-beliefs	2.10	1.08	2.60	0.91	-2.15	.035	-0.50
Self-esteem	2.96	0.65	3.21	0.42	-2.75	.008	-0.66
Self-concept clarity	2.78	0.97	3.39	0.71	-3.28	.002	-0.72
Ruminative self-focus	3.55	0.90	3.11	0.78	2.37	.020	0.53
Reflective self-focus	3.66	0.84	3.32	0.86	1.84	.070	0.41

Note: bold indicates significant group differences at $p < .05$.

Table 3. Group differences in narrative identity themes: fixed effects estimates from linear mixed effects models

Predictor	Outcome					
	Agency	Emotional Tone	Context Coherence	Temporal Coherence	Self-event Connections	Meaning-making
Age	0.05 (0.01)***	-0.00 (0.02)	-0.01 (0.02)	0.02 (0.02)	0.02 (0.01)	0.06 (0.01)***
Gender	0.07 (0.09)	0.15 (0.10)	-0.29 (0.12)*	-0.00 (0.10)	0.14 (0.10)	0.20 (0.10)*
Group (CHR vs HC)	0.25 (0.09)**	0.32 (0.10)**	0.06 (0.12)	0.15 (0.10)	0.07 (0.10)	0.15 (0.10)

Note: Standard errors are shown in parentheses. All models included crossed random intercepts for participant and interview section. Significance tests were conducted as *t*-tests with degrees of freedom estimated by Satterthwaite's method. Bold indicates a significant finding; * $P < .05$, ** $P < .01$, *** $P < .001$.

being overweight in high school with passive and constrained language: "it's no longer coming from my peers, like telling me that I'm fat, but also coming from people above me, like adults who are supposed to . . . teach us right from wrong and then they were like, I think you're just fat and then we don't want you . . . it really shaped some of my strong beliefs toward myself and [I'm] not able to get out of it." No other narrative identity themes differed between CHR and HC groups (all $P > .11$).

Mean scores of narrative themes across the full interview and in each interview section are shown in [supplementary figure 1](#). A supplemental analysis found no significant interactions between group and interview section (see [supplementary material 1](#)). Response length did not differ between groups, CHR mean words = 460, $SE = 32.1$; HC mean words = 435, $SE = 30.7$; $t(88.1) = 0.59$, $P = .557$.

Relationships Between Self-concept, Narrative Identity, and Clinical Variables in CHR

Pairwise Relationships . As discussed in "data analysis" above, scores for narrative identity variables were averaged within established dimensions of variation in narrative identity.⁵⁵ Correlations within and between the narrative identity dimensions were examined to confirm the validity of this approach. Substantial correlations were observed within each of the 3 narrative identity dimensions (emotion-agency, $r = 0.47$, $P < .001$, context coherence-temporal coherence, $r = 0.62$, $P < .001$, self-event connections-meaning-making, $r = 0.73$, $P < .001$), while correlations across dimensions were negligible (all $r < 0.27$, all $P > .06$). Therefore, mean scores for each of the 3 dimensions were used in correlation and regression analyses. As a supplemental analysis, correlations for agency and emotion were also examined separately, due to the lower intercorrelation for these 2 themes ($r = 0.47$). However, the present study was not powered to detect differences between correlations, and no differences in correlations for agency vs emotional tone reached statistical significance (largest difference was for self-esteem: self-esteem-agency $r = 0.52$, self-esteem-emotional tone

$r = 0.27$, *z*-test of dependent correlations, $t = -1.91$, $P = .062$). Full results appear in [supplementary figure 2](#).

Correlations between self-concept, narrative identity, (and clinical variables in the CHR group are shown in [figure 1](#) (uncorrected $P < .05$ shown below the diagonal, FDR-corrected $P < .05$ shown above the diagonal). Medium to large correlations were observed between all self-concept variables except reflective self-focus ($r = |0.31|$ to $|0.70|$). High correlations among 5 of the 6 self-concept variables (all except reflective self-focus) suggest that a single latent variable may account for variation across all of the 5 measures. To quantify this possibility, a post hoc principal components analysis was conducted with a single unrotated principal component extracted from these 5 variables in the CHR group. The principal component accounted for 58% of the variance across the 5 variables, with absolute loadings between 0.66 and 0.84, indicating a substantial amount of shared variance that could be attributed to a common latent variable. In contrast, no correlations between narrative identity dimensions were significant (all $r < 0.24$).

Self-concept and Narrative Identity. After FDR correction, motivational/affective themes correlated with self-esteem, $r = 0.498$, $P_{FDR} = .002$ while autobiographical reasoning correlated with reflective self-focus, $r = 0.354$, $P_{FDR} = .043$.

Self-concept and Clinical Outcomes. Attenuated negative symptoms correlated with all self-concept variables except reflective self-focus, $r = |0.38|$ to $|0.54|$. Additionally, lower positive and higher negative self-beliefs correlated with positive symptoms, positive beliefs $r = -0.376$, $P_{FDR} = .029$, negative beliefs $r = 0.388$, $P_{FDR} = .025$; lower self-esteem correlated with poorer social functioning, $r = 0.425$, $P_{FDR} = .014$; and more ruminative self-focus correlated with poorer social, $r = -0.343$, $P_{FDR} = .046$, and role functioning, $r = -0.345$, $P_{FDR} = .046$.

Narrative Identity and Clinical Outcomes. Motivational/affective themes correlated with positive symptoms, $r = -0.358$, $P_{FDR} = .041$, and motivational/affective

themes correlated with negative symptoms, $r = -0.348$, $P_{FDR} = .046$.

Unique and Shared Effects of Self-concept and Narrative Identity on Clinical Variables

Hierarchical regression analyses are summarized here and in figure 2, with full details in supplementary material 2 and supplementary figure 3. In the full positive

symptoms model (figure 2a), low positive self-beliefs, $\beta = -0.492$, $P = .044$, and negative/passive narrative identity themes, $\beta = -0.398$, $P = .019$, uniquely predicted more severe positive symptoms. The shared effect of self-concept variables predicted a substantial portion of the variance in negative symptoms, $R^2 = 0.401$, but there were no unique effects for specific self-concept variables. In the final role functioning model (figure 2b), autobiographical reasoning uniquely predicted better role

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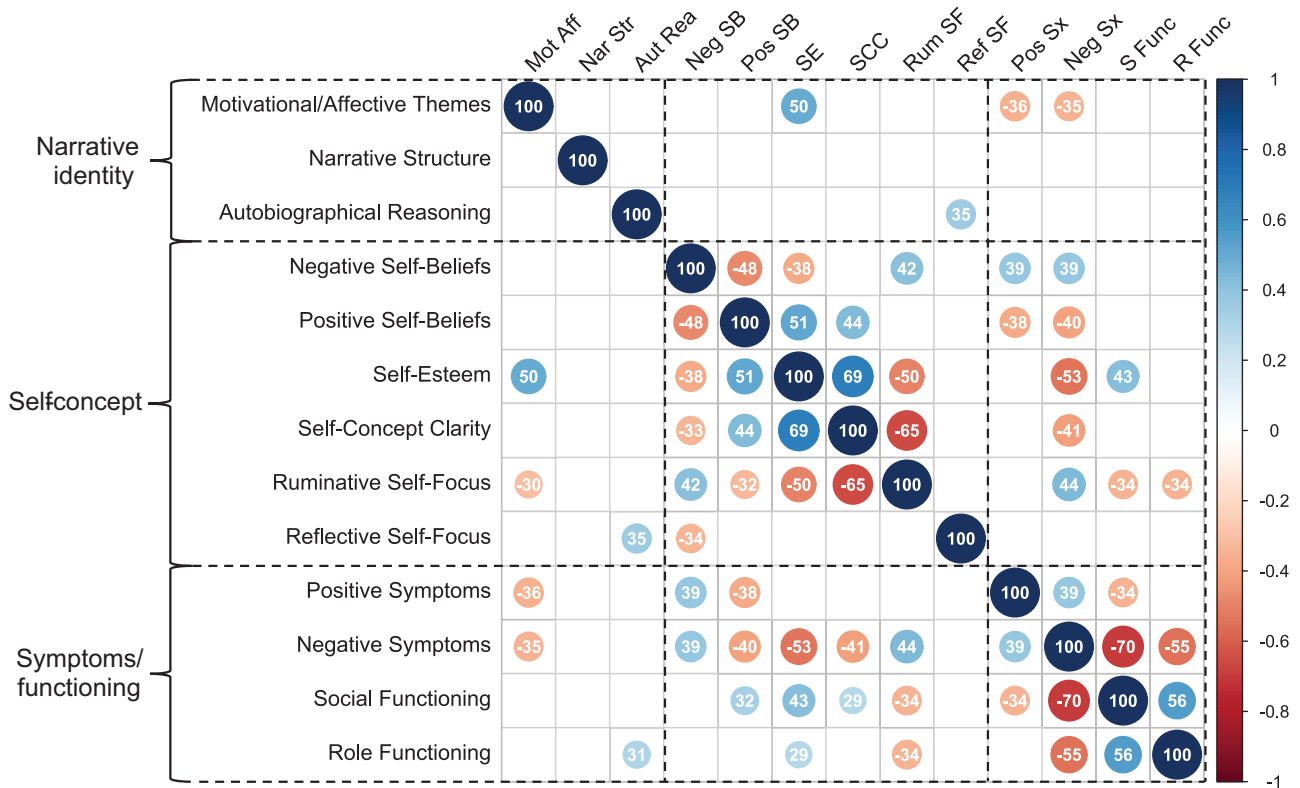


Fig. 1. Correlations between self-concept, narrative identity, and clinical variables in 49 individuals at clinical high risk for psychosis. All correlations shown were $P < .05$ (unadjusted below the diagonal and FDR adjusted above the diagonal).

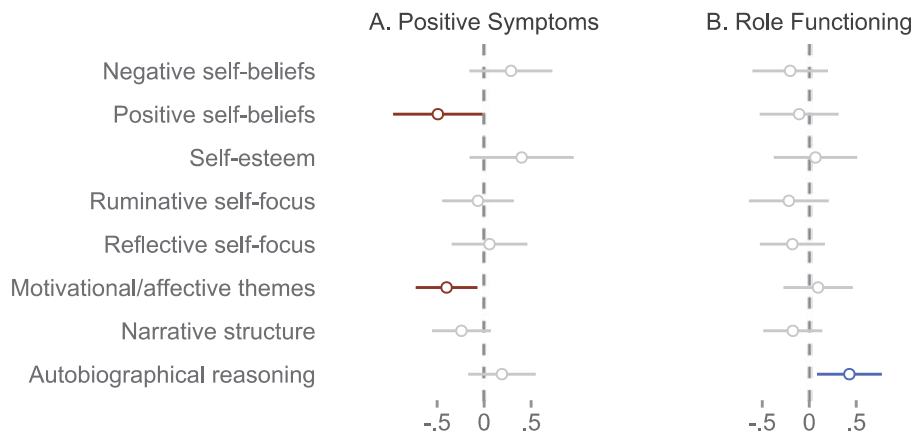


Fig. 2. Unique effects of self-concept and narrative identity variables on positive symptoms and role functioning for 49 youth at clinical high risk for psychosis. Standardized estimates and 95% confidence intervals are shown from the final step of hierarchical regression analyses. Full hierarchical regression results appear in the supplementary material accompanying this article.

functioning, $\beta = 0.427$, $P = .017$. No regression findings were notable for social functioning.

Discussion

Youth at CHR reported more maladaptive self-beliefs, more ruminative self-focus, lower self-esteem, and lower self-concept clarity compared with their normative peers. Moreover, their life stories were marked by negative emotions and weak or passive motivations. Effects were primarily associated with negative symptoms, and some were also associated with positive symptoms, social functioning, and role functioning. In contrast, reflective self-focus and autobiographical reasoning were unrelated to other self-concept and narrative identity variables and may represent protective factors or sources of resilience.

Negative and Uncertain Self-concept

Various aspects of the self-concept were interrelated, suggesting a common underlying dimension. Each of these specific findings replicates prior work in psychosis risk: self-esteem,⁴⁵ self-concept clarity,^{65,66} positive and high negative self-beliefs,⁴¹⁻⁴³ and self-focus.⁶⁶⁻⁶⁸ The current study ties these disparate findings together, suggesting that they all reflect a common core theme of negativity and uncertainty in the self-concept accompanying negative symptoms. Of note, the SIPS negative subscale captures aspects of nonspecific psychological distress or internalizing symptoms in addition to true negative symptoms.⁶⁹⁻⁷² Further research with other assessments of negative symptoms (eg, NSI-PR) and/or assessment of comorbid internalizing symptoms could test whether the self-concept is more affected by negative symptoms, internalizing, or broad psychological distress.

Specific aspects of the self-concept were also related to positive symptoms and functional impairment. Less positive and more negative self-beliefs were associated with positive symptoms, replicating previous research in CHR^{41,42,44} and suggesting that self-beliefs may be particularly reflective of positive symptoms. Similarly, self-esteem and ruminative self-focus seemed particularly relevant for functional impairment. Further work would be required to determine the directionality of these effects, eg, 1 previous study has suggested that functional problems may cause low self-esteem in CHR.⁷³

Negative Emotion and Passivity in Life Stories

As predicted by a recent developmental theory of narrative identity in psychotic disorders,¹³ motivational/affective themes were more negative and passive in the life narratives of youth at CHR, compared with their normative peers. These life stories centered on a weak or passive protagonist experiencing aversive emotions. Moreover, negative emotion and passivity were related to positive

and negative attenuated psychotic symptoms. Negative and passive narrative themes have been observed in psychotic disorders,⁷⁴⁻⁷⁹ trait schizotypy,^{66,80} nonpsychotic mood disorders,^{81,82} personality disorders,⁸³ and even nonclinical samples with low well-being and subclinical depressive symptoms.^{84,85} Negative and passive themes therefore seem to accompany relatively nonspecific psychological distress, which would be consistent with their relationships to positive symptoms, negative symptoms, and self-esteem in the current study. Common mechanisms such as early adversity may affect the self-concept and narrative identity in CHR.⁸⁶⁻⁸⁸ Cognitive-behavioral interventions that target negative, passive, and uncertain understandings of oneself (eg, core belief modification or schema therapy) are likely to be beneficial in CHR. Furthermore, broader transdiagnostic samples and assessment methods (eg, using the Research Domain Criteria or Hierarchical Taxonomy of Psychopathology) would be valuable to determine whether attenuated psychotic symptoms uniquely contribute to narrative motivational/affective disturbances over and above the effect of general psychopathology.

Developmental Theory of Narrative Identity Disturbances

Unlike motivational/affective themes, narrative structure and autobiographical reasoning were not altered in the CHR group. Previous studies have found disruptions in narrative structure and autobiographical reasoning in psychotic disorders^{31,56,89,90} but not in schizotypy.^{66,91,92} The current findings from a CHR sample fill the gap between these 2 ends of the psychosis spectrum, suggesting that disturbances to narrative structure and autobiographical reasoning do not predate the onset of psychosis. Given the heterogeneity of symptom presentations, comorbidities, and outcomes in CHR, an impactful future direction would be to collect repeated narratives from youth at CHR and examine changes over time as a function of symptom remission, progression, or conversion to psychotic disorders. Repeated narrative studies could benefit from automated rating methods (eg, NLP metrics), although trained raters would still be beneficial due to inconsistent and potentially biased results from some NLP methods in CHR.^{93,94} Metacognitive interventions such as Metacognitive Reflection and Insight Therapy²⁰ in the CHR period may strengthen abilities to build narrative structure and make meaning of experiences, making narrative identity more resilient to later disruptions.

Reflective Self-focus and Autobiographical Reasoning

Reflective self-focus (a tendency to learn about oneself by examining personal experiences) was a notable exception to the general pattern of negativity and uncertainty in the self-concept. Reflective self-focus may have been

somewhat higher in CHR than in controls but was unrelated to other self-concept variables. A similar pattern has been observed in schizotypy: individuals with higher schizotypy report higher ruminative and reflective self-focus, but only ruminative self-focus is associated with the extent of their psychotic-like experiences.^{67,68} Reflective self-focus was related to autobiographical reasoning in individuals' life narratives. Individuals who were particularly interested in understanding their own experiences also elaborated more on lessons, insights, and personal relevance when telling personal stories. Importantly, neither reflective self-focus nor autobiographical reasoning appeared to be maladaptive. Reflective self-focus was unrelated to symptoms and functional impairment, and autobiographical reasoning was uniquely associated with preserved role functioning. There may be 2 relevant dimensions of variation in the self-concept and narrative identity for youth at risk for psychosis: a dimension of negativity, passivity, and uncertainty which relates to symptoms and impairment; and a separate dimension of metacognitive exploration of personal experiences which is benign or even protective. Further studies of reflective self-focus, autobiographical reasoning, and other metacognitive processes would be valuable in the CHR syndrome to validate and explore this second dimension. Metacognitive interventions could also broaden and build on preexisting interest in understanding one's own experiences to strengthen the self-concept and narrative identity.

Study Limitations

The current study's limitations included a relatively small sample size, which somewhat limits the interpretation of findings; lack of longitudinal follow-up; and absence of purely qualitative analyses which could be valuable to triangulate with the reported quantitative findings or generate novel hypotheses about self and identity in CHR.⁹⁵ Future research with larger sample sizes, longitudinal designs, and qualitative analysis of participants' experiences would be valuable in addressing these limitations. Furthermore, this study did not include measures of basic self-disturbances or anomalous self-experiences, which limits inferences about relationships between the basic and narrative self. One important direction for future follow-up studies will be to define relationships between basic and narrative self-disturbances. Additionally, the sample was recruited from a single urban area in the Midwestern United States. Although there were no demographic differences between the CHR and HC groups that would affect the study findings, findings may not generalize to other demographic groups and sociocultural settings. For instance, agency is unusually highly valued in American culture,⁹⁶ and it is unclear how findings on agency and psychopathology may translate internationally. In conclusion, this study showed that some—but not

all—aspects of self-concept and narrative identity were affected in CHR, filling important knowledge gaps about the development of narrative self-disturbances and suggesting intervention targets.

Supplementary Material

Supplementary material is available at <https://academic.oup.com/schizophreniabulletin/>.

Acknowledgment

The authors have declared that there are no conflicts of interest in relation to the subject of this study.

Funding

This work was supported in part by the Canadian Institutes of Health Research (DFS-152268 to H.R.C.) and the National Institutes of Health (R01MH120088, R01MH116039, R21MH115231, and R21MH119677 to V.A.M.).

Author Contributions

H.R.C., D.P.M., and V.A.M. contributed to the study design. H.R.C. and V.A.M. contributed to data collection. H.R.C., L.O., and C.M.J. contributed to narrative data analysis. H.R.C. conducted statistical analysis under the supervision of D.P.M. and V.A.M. H.R.C. wrote the initial draft of the manuscript and all other authors contributed to critical revisions. All authors have approved the final version of this manuscript.

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