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Self-Transcendence as a Risk and Resilience Factor in Individuals at Clinical High Risk for Psychosis

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ABSTRACT

Aim: Self-transcendence is a personality feature and psychological resource that involves feelings of connectedness with the universe, all of humanity, and the individual self. Self-transcendence has been positively associated with both positive psychotic symptoms and clinical high risk for developing psychosis status, but studies reporting these findings focus solely on the connectedness-with-universe aspect of self-transcendence. The broader self-transcendence literature, which also includes connection with humanity and oneself, robustly supports self-transcendence as an indicator of well-being. Given this discrepancy, we sought to understand whether self-transcendence should be considered a risk or resilience factor for youth at clinical high risk.

Methods: We operationalised self-transcendence using two more holistic measures novel to the clinical high risk population. Clinical high risk participants ($n = 42$) and healthy controls ($n = 44$) completed the Adult Self-Transcendence Inventory and participated in narrative life story interviews which were coded for self-transcendence themes.

Results and Discussion: Clinical high risk individuals scored lower than healthy controls on measures of self-transcendence, functioning, and life satisfaction. However, there were no group differences in the relationships between self-transcendence and measures of well-being.

Conclusion: Our findings suggest self-transcendence is a part of healthy personality development that may be impacted in clinical high risk individuals yet may still function as a psychological resource for this population, pointing toward new avenues for intervention in clinical high risk and other mental health populations.

1 | Introduction

Youth at clinical high risk for developing psychosis (CHR) represent a unique and clinically significant population. CHR youth (typically age 14–24) do not meet full diagnostic criteria for disorders such as schizophrenia but exhibit a range of attenuated or subthreshold symptoms such as subtle perceptual disturbances, disorganised thinking, or brief episodes of psychosis

(Worthington and Cannon 2021). Approximately 25% of these individuals will convert to full-blown psychosis (Raballo et al. 2022; Radua, Davies, and Fusar-Poli 2021; Salazar de Pablo et al. 2021), but the characteristics that predict who will be among that 25% are not yet well understood. One emerging characteristic of those that do convert, however, is evidence of profound disturbances in self-identity (Sass and Parnas 2003; Cloninger, Svrakic, and Przybeck 1993). Better understanding

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of individual differences in identity disturbances among CHR may allow for better identification of important risk and resilience factors.

One such individual difference that may be subject to identity disturbance is *self-transcendence*, a construct involving expanded self-boundaries. This includes feelings of profound acceptance and coherent meaning-making within oneself (“intrapersonal self-transcendence”), personal continuity across time (“temporal self-transcendence”), connectedness with humanity as a whole (“interpersonal self-transcendence”), and at-oneness with the cosmos or a higher power (“transpersonal self-transcendence”) (Reed and Haugan 2021). Ostensibly, disturbances in self-transcendence could manifest as either *too little* or *too much* expansion of self-boundaries.

The broad empirical literature on self-transcendence strongly points toward an abundance of self-transcendence as a protective or health-promoting individual difference (Reed and Haugan 2021), implying a lack of self-transcendence may be problematic. However, this is seemingly in conflict with previous research involving individuals with attenuated and clinical symptoms of psychosis. This research suggests an abundance of self-transcendent feeling may be an indicator of psychosis risk (Scholte-Stalenhoef et al. 2023). Self-transcendent feelings may even be experienced as an aspect of psychotic experiences themselves, as in religious delusions (Marriott et al. 2019; Powers, Kelley, and Corlett 2017). Resolving this tension and understanding whether self-transcendence is a potential indicator of strength or vulnerability within this population could be important for identifying new opportunities for intervention.

1.1 | Self-Transcendence as Risk Factor

Self-transcendence in CHR individuals and individuals with psychosis spectrum disorders has primarily been investigated using the Self-Transcendence dimension of the Temperament and Character Inventory (TCI-ST) (Cloninger, Svrakic, and Przybeck 1993), which operationalizes self-transcendence primarily through questions emphasising self-transcendent feelings and experiences of a transpersonal nature. TCI-ST research with at-risk individuals (i.e., CHR, ultra-high risk, and first-degree relatives with genetic risk) has been mixed. While some studies have found higher TCI-ST in at-risk individuals compared with controls (Bora and Veznedaroglu 2007; Mamah et al. 2020; Margetić et al. 2011; Smith et al. 2008) and associations between higher TCI-ST scores and positive symptoms (Smith et al. 2008), others found no such group differences (Cortés et al. 2009; Galindo et al. 2016; Gonzalez-Torres et al. 2009; Song et al. 2013) nor relationships with positive symptoms (Song et al. 2013; Fresán et al. 2015).

However, research involving individuals with psychosis spectrum diagnoses has largely found such individuals tend to score higher on TCI-ST compared with healthy controls (Scholte-Stalenhoef et al. 2023; Smith et al. 2008; Galindo et al. 2016; Gonzalez-Torres et al. 2009; Ohi et al. 2012) and several studies have found positive correlations between TCI-ST and positive symptoms (Bora and Veznedaroglu 2007;

Margetić et al. 2011; Cortés et al. 2009; Guillem et al. 2002; Hori et al. 2008; Hori et al. 2014), leading to speculation that high self-transcendence scores may be linked to increased risk for psychosis (Scholte-Stalenhoef et al. 2023; Galindo et al. 2016).

1.2 | Self-Transcendence as Resilience Factor

A large body of research uses more multidimensional measures of self-transcendence, emphasising interpersonal, intrapersonal and temporal self-transcendence in addition to transpersonal self-transcendence (Levenson et al. 2005; Reed 1986; Tornstam 1997). Developmental, personality, and health theories of self-transcendence incorporating these dimensions conceptualise self-transcendence as a psychological resource that emerges in response to overcoming life challenges, in turn leading to greater resilience (Reed and Haugan 2021; Kaufman 2023; Masui et al. 2016; Erikson and Erikson 1997; Maslow 1969; Tornstam 1994). Indeed, the empirical literature demonstrates higher self-transcendence is associated with lower depression (Ellermann and Reed 2001; James and Zarrett 2005; Kausch and Amer 2007; Klaas 1998; Norberg et al. 2015); higher positive affect, well-being, and mental health (James and Zarrett 2005; Coward 1996; Derdaele et al. 2019; Ilyas, Shahed, and Hussain 2020; Torges, Stewart, and Duncan 2009; del-Pino-Casado et al. 2019; Lamers et al. 2011; Moe et al. 2013; Nygren et al. 2005); and more life purpose, meaning, and satisfaction (Braam et al. 2006; Kim, Hayward, and Reed 2014; Lewin and Thomas 2001; Wang 2011).

Because self-transcendence has not yet been measured in this more holistic way among individuals at risk for psychosis, it is unknown whether the cultivation of self-transcendence could also serve as a resilience factor and target for early intervention among this population.

1.3 | Self-Transcendence in Personal Narratives

Self-transcendence can be measured not only through self-report measures but also through narrative identity methods, which often entail one-on-one interviews with participants (Reischer et al. 2021; Reischer et al. 2024). These interviews explicitly tap into the implicit story of self that individuals use to make meaning of their lived experience (McAdams and McLean 2013). Analyses tend to quantify the structural, affective, and thematic elements of the narrated life story and test associations with personality and clinical variables of interest (McLean et al. 2020). When narrating life stories, individuals across the psychosis spectrum tend to emphasise aversive emotions and experiences, use a disjointed narrative structure and a detached narrative style, and minimise personal agency (Cowan, Mittal, and McAdams 2021; Cowan et al. 2023). This sets the developmental foundation for more pervasive problems in constructing and maintaining a coherent personal identity in psychotic disorders (Sass and Parnas 2003; Henriksen, Raballo, and Nordgaard 2021; Lysaker et al. 2022). However, studies have also found autobiographical reasoning to be intact and in fact related to preserved role functioning in CHR individuals (Cowan et al. 2023).

To date, narrative identity research on self-transcendence has focused on healthy individuals. Those who score high in self-reported self-transcendence tend to narrate their life stories with strong themes of *closure* (acceptance of life as it has been lived), *self-actualization* (congruence and satisfaction with the self), *spiritual pluralism* (ideologically inclusive personal spirituality), and *interconnectedness* (interpersonal connectedness) (Reischer et al. 2021). Research using a quantified coding scheme of these qualitative themes has shown positive correlations with psychological well-being and life satisfaction and negative correlations with depression for a non-clinical sample of adults with a wide range of self-reported self-transcendence scores (Reischer 2022). Whether positive associations with psychological health would also be found for narrative self-transcendence in individuals with attenuated symptoms of psychosis is unknown.

Further, it is unclear whether to expect narrative self-transcendence theme scores to be significantly different for those on the psychosis spectrum compared with healthy controls. CHR youth trying to make sense of attenuated psychotic experiences might narrate their life stories in ways that reflect more insecurity and dissatisfaction with self (low self-actualization) and less integration of difficult past experiences (low closure). Alternatively, if CHR individuals experience more transpersonal connectedness, as suggested by some previous TCI-ST findings, this might be evidenced in high spiritual pluralism scores and perhaps even a global tendency to score high on indicators of narrative self-transcendence.

1.4 | The Present Study

We sought to understand whether self-transcendence should be considered a risk or resilience factor for CHR youth by examining group differences between CHR and healthy control (HC) youth using two approaches novel to this population, (a) a retrospective-developmental self-report measure of self-transcendence and (b) narrative identity measures of self-transcendence rated in participants' narrated life experiences.

We administered the Adult Self-Transcendence Inventory (ASTI) (Levenson et al. 2005), a self-report questionnaire which includes transpersonal ("I feel that my individual life is a part of a greater whole"), interpersonal ("I feel much more compassionate, even toward my enemies"), and intrapersonal (reverse-scored, "My sense of self has decreased as I have gotten older") aspects of self-transcendence. The ASTI prompts participants to consider how their own perspectives have changed over the last 5 years, which may be particularly relevant for individuals experiencing disturbing subclinical symptoms alongside normative developmental changes typical of the transition from late adolescence to early adulthood. Based on the convergent validity ($r=0.34$) of the ASTI and TCI measures (Sanzo 2009) and their overlapping face validity, we hypothesized our findings would be in the same direction as typical TCI-ST findings—specifically, that CHR individuals would score higher in ASTI compared to HC individuals, and positive attenuated psychotic symptoms would positively correlate with ASTI among CHR individuals.

We also administered Brief Life Narrative Interviews and then rated participants' responses using three themes from the self-transcendence narrative coding manual (Reischer et al. 2021). These themes are primarily related to the intrapersonal (self-actualization and closure), temporal (closure), and transpersonal (spiritual pluralism) aspects of self-transcendence. As no studies have explored narrative self-transcendence in CHR individuals, and adjacent empirical literature has mixed results (Bonelli and Koenig 2013; Dahl et al. 1983; Huguélet et al. 2016; Mohr et al. 2012; Stephensen, Urfer-Parnas, and Parnas 2023; Tyler 2023), these analyses were considered exploratory.

Finally, to understand potential differences in relationships between self-transcendence and well-being by group, we considered three well-being measures: role functioning, global functioning, and life satisfaction. We predicted CHR youth would score lower on well-being measures than HC youth (Mamah et al. 2020; Margetić et al. 2011; Boyette et al. 2014; Margetić et al. 2010), and that expected positive relationships between self-transcendence and well-being would be stronger for HC than CHR individuals.

2 | Materials and Methods

The data were collected in a manner consistent with ethical standards for the treatment of human subjects. The study was approved by the Northwestern University Institutional Review Board (STU00203263).

2.1 | Participants

Participants were recruited from the community through a university-based psychosis risk research program in a large U.S. city via newspaper, public transit, and Craigslist ads; e-mail postings; and professional referrals. CHR participants ($n=42$) met criteria for a CHR syndrome based on the Structured Interview for Psychosis-Risk Syndromes (SIPS) (Miller et al. 1999). HC participants ($n=44$) were age- and education-matched. In both groups, participants with a history of head injury, neurological disorder, substance dependence, or any DSM-IV-TR psychotic disorder were excluded. Additional exclusion criteria for HC included meeting SIPS criteria for a psychosis-risk syndrome (Miller et al. 1999) or having a first-degree relative with a psychotic disorder. See Table 1 for demographic details.

2.2 | Measures

2.2.1 | Clinician and Self-Rated Assessments

The clinical interviews were the SIPS (Miller et al. 1999), measuring attenuated psychotic symptoms, and the Global Functioning Scales (Cornblatt et al. 2007), a measure of impairment in social and role functioning. Participants completed self-report questionnaires measuring global life satisfaction (Satisfaction With Life Scale; Diener et al. 1985) and self-transcendence (ASTI; Levenson et al. 2005).

TABLE 1 | Participant demographics and mean variable scores.

	Healthy controls		Clinical high risk		Possible range	
	<i>M</i> or <i>n</i>	<i>SD</i> or %	<i>M</i> or <i>n</i>	<i>SD</i> or %	Min	Max
<i>N</i>	44		42			
Age	21.64	3.36	20.69	2.88		
Education (years)	14.66	2.20	14.10	2.42		
Gender						
Men	14	32%	24	57%		
Women	30	68%	18	43%		
Race						
Asian	9	20%	6	14%		
Black	8	18%	15	36%		
White	22	50%	13	31%		
Other/multiple	5	11%	8	19%		
Hispanic	10	22%	5	12%		
Self-transcendence measures						
Narrative spiritual pluralism	0.03	0.11	0.06	0.15	−2	2
Narrative self-actualization	0.73	0.21	0.57	0.39	−2	2
Narrative closure	0.35	0.28	0.20	0.34	−2	2
Self-report self-transcendence (ASTI)	2.95	0.33	2.76	0.45	1	4
Clinical measures						
Attenuated positive symptoms (SIPS)	0.89	1.37	10.64	3.88	0	6
Social functioning (GFS)	8.79	0.99	7.36	1.58	1	10
Role functioning (GFS)	8.87	0.78	7.68	1.47	1	10
Life satisfaction (SWLS)	4.22	0.96	3.84	1.00	1	7

Note: Spiritual pluralism, self-actualization, and closure (Reischer et al. 2021), Adult Self-Transcendence Inventory (ASTI; Levenson et al. 2005), Structured Interview for Psychosis Risk Syndromes (SIPS; Miller et al. 1999), Global Functioning Scales (GFS, Cornblatt et al. 2007), Satisfaction With Life Scale (Diener et al. 1985).

2.2.2 | Brief Interviewer-Administered Life Narrative Interview

A complete description of the narrative interview has been previously reported (Cowan et al. 2023). Briefly, participants discussed their thoughts and feelings about four personal experiences in response to interviewers' prompts. Prompts were based on narrative identity literature and SIPS symptom content. Two trained research assistants blind to study aims, hypotheses, and participant group status coded interview transcripts for closure ($ICC = 0.73$), self-actualization ($ICC = 0.85$), and spiritual pluralism ($ICC = 0.83$) using the Coding Manual for Self-Transcendence (Reischer et al. 2021) (<https://osf.io/bc4hr>). See Table 2 for definitions and examples of narrative constructs.

2.3 | Statistical Analysis

Our analyses were pre-registered (<https://osf.io/ghvjd>). Group differences in ASTI and well-being were examined through two-tailed *t*-tests. Group differences in narrative variables were

examined through linear mixed effects models with participant ID and interview prompt entered as random effects and group status (CHR vs. HC) entered as a fixed effect. Relationships between variables were tested using Pearson correlations. Moderation analyses used regression models, with group \times self-transcendence interactions predicting variables of interest; models were adjusted for age and sex to account for developmental effects. We did not include race in the models, as a *chi*-squared test indicated that group differences in race were not larger than would be expected by chance alone, $X^2 = 5.69$, $df = 3$, $p = 0.127$. Correlation and regression analyses of narrative self-transcendence used a person-mean score for each variable (i.e., the mean score across the four interview responses). Analyses were performed in R version 4.3.1 (R Core Team 2023), and G*Power (Faul et al. 2009).

3 | Results

Table 1 shows descriptive statistics for all study variables by group. Table 3 shows zero-order correlations among study

TABLE 2 | Participant brief life narrative excerpts illustrating high and low narrative theme scores.

Theme	Definition	High score examples [HC participants]	Low score examples [CHR Participants]
Self-actualization	Narrative reflects a sense that one is aware of one's positive potential and is on a path toward meeting that potential. General sense of satisfaction with one's life course.	<p>"[My] struggle is what shaped me into who I am today...gave me more compassion for people that I... interact with nowadays and put a lot of things in perspective. Having to go through a lot of the negative emotion... made me realise that it's real easy to feel bad and takes skill to learn how to overcome that...[it] made me a more resilient person."</p> <p>"I had gone through like a rough social high school experience where friends just dispersed, and people started doing their own thing and I was on my own and I felt like behind other people in like social terms....I just finally found like a core group of friends where I can be like myself and be comfortable and just let things loose and just not really worry about how I'm acting...I know they'll accept me cause they know who I am and like I know who they are."</p>	<p>"I thought I could handle [the challenge], no matter how bad it got. Then in college, it just exasperated [sic]. It got way worse and so I finally got help for it, and then it's just basically been a rollercoaster ever since then. It keeps me from focusing on my work, doing things I want to do, just makes me feel alone and like a waste of a life, sort of."</p> <p>"I was really heartbroken...that turning point, that's where I realised that there are some type of people out there who will take your, take your kindness or basically... your gullible mind...or manipulate you basically... that was...the lowest point of my life of depression and everything...I was a very, very trusting person and to the wrong people."</p>
Closure	Narrative reflects a sense that past regrets, disappointments, or confusions have been acceptably integrated into the narrator's present life.		
Spiritual pluralism	Narrative conveys a sense that the narrator has a sense of personal spirituality, one that is inclusive of all others.		<p>"I have things that happen that are like oh, it's weird that it worked out the way, but it's never felt like a higher meaning or like something. It just feels like 'oh.'"</p>

Note: Self-actualization, closure, and spiritual pluralism (Reischer et al. 2021).

TABLE 3 | Zero-order correlations among all study variables across the entire sample.

Variable	1	2	3	4	5	6	7
1. Spiritual pluralism							
2. Self-actualization	0.26*						
3. Closure	0.23	0.67**					
4. Self-reported self-transcendence (ASTI)	0.16	0.37**	0.45**				
5. Attenuated positive symptoms (SIPS)	0.03	-0.27*	-0.21	-0.34**			
6. Social functioning (GFS)	0.07	0.32*	0.22	0.42**	-0.56**		
7. Role functioning (GFS)	0.03	0.44**	0.32*	0.31*	-0.48**	0.64**	
8. Life satisfaction (SWLS)	0.03	0.44**	0.25	0.36**	-0.36**	0.58**	0.41**

Note: Spiritual pluralism, self-actualization, and closure (Reischer et al. 2021), Adult Self-Transcendence Inventory (ASTI; Levenson et al. 2005), Structured Interview for Psychosis Risk Syndromes (SIPS; Miller et al. 1999), Global Functioning Scales (GFS, Cornblatt et al. 2007), Satisfaction With Life Scale (SWLS; Diener et al. 1985).

* $p < 0.05$.

** $p < 0.01$.

TABLE 4 | Correlations for study variables in clinical high risk group.

Variable	1	2	3	4	5	6	7
1. Spiritual pluralism							
2. Self-actualization	0.29						
3. Closure	0.25	0.73**					
4. Self-reported self-transcendence (ASTI)	0.23	0.33	0.47**				
5. Attenuated positive symptoms (SIPS)	-0.18	-0.09	0.00	-0.38*			
6. Social functioning (GFS)	0.16	0.19	0.08	0.42*	-0.39*		
7. Role functioning (GFS)	0.14	0.34*	0.18	0.25	-0.22	0.58**	
8. Life satisfaction (SWLS)	0.09	0.41*	0.13	0.35*	-0.32	0.46**	0.39*

Note: Spiritual pluralism, self-actualization, and closure (Reischer et al. 2021), Adult Self-Transcendence Inventory (ASTI; Levenson et al. 2005), Structured Interview for Psychosis Risk Syndromes (SIPS; Miller et al. 1999), Global Functioning Scales (GFS, Cornblatt et al. 2007), Satisfaction With Life Scale (SWLS; Diener et al. 1985).

* $p < 0.05$.

** $p < 0.01$.

variables across the entire sample; Table 4 shows correlations among study variables for the CHR sample.

3.1 | Group Differences in Self-Transcendence

As shown in Figure 1 and Table 1, in contrast to our hypothesis that CHR youth would score higher on self-transcendence than HC youth, t -tests showed CHR youth scored lower on self-actualization than HC ($t = 2.31$, $p = 0.023$). Further, t -tests showed no significant differences between CHR and HC individuals for ASTI ($t = 1.96$, $p = 0.058$, $d = 0.49$), closure ($t = 1.87$, $p = 0.065$), or spiritual pluralism ($t = -0.50$, $p = 0.617$).

3.2 | Relationships Between Self-Reported and Narrative Self-Transcendence

Across the entire sample, ASTI was correlated with self-actualization ($r = 0.37$, $p = 0.005$) and closure ($r = 0.45$, $p = 0.001$), but not spiritual pluralism ($r = 0.16$, $p = 0.259$). ASTI did not

relate to narrative self-transcendence variables differently in CHR versus HC; all interactions were nonsignificant (all $p > 0.593$).

3.3 | Self-Transcendence and Attenuated Positive Psychotic Symptoms

Contrary to our prediction, higher ASTI was correlated with lower positive symptoms among CHR youth ($r = -0.38$, $p = 0.025$). Narrative self-transcendence variables were uncorrelated with positive symptoms in CHR (all $p \geq 0.759$).

3.4 | Self-Transcendence and Well-Being

As predicted, functioning and life satisfaction were lower in CHR than HC individuals: role functioning ($t = 4.37$, $p < 0.001$, $d = 0.99$); social functioning ($t = 4.70$, $p < 0.001$, $d = 1.07$); and life satisfaction ($t = 2.46$, $p = 0.017$, $d = 0.60$). Across the entire sample, ASTI correlated with social functioning, role functioning,

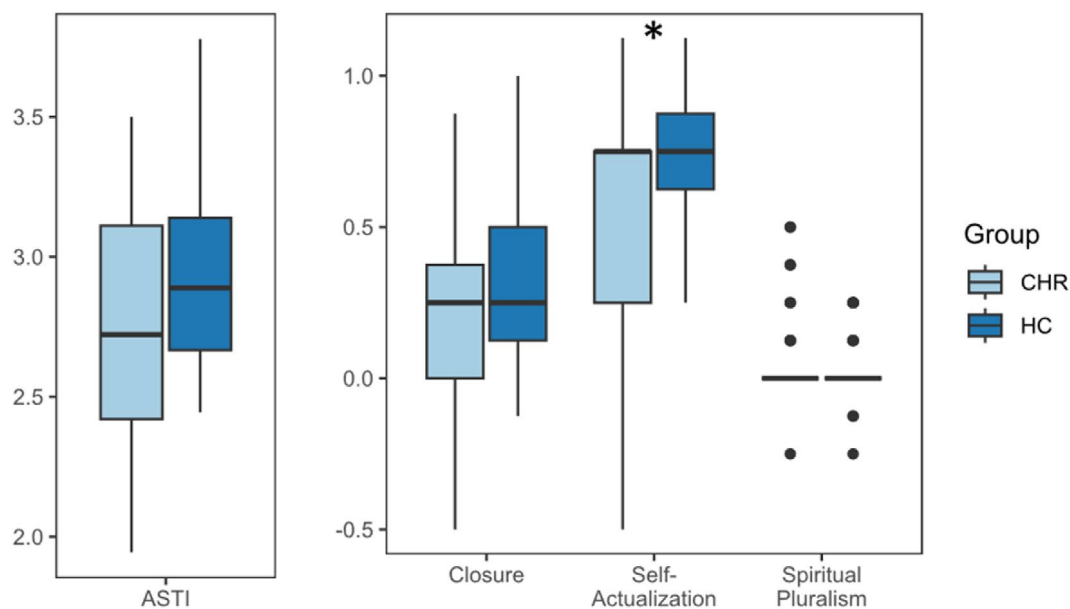


FIGURE 1 | Group differences in self-reported and narrative self-transcendence by psychosis risk. *Note:* ASTI range is 1 to 4 (Levenson et al. 2005). Closure, self-actualization, and spiritual pluralism ranges are -2 to 2 (Reischer et al. 2021). CHR refers to individuals at clinical high risk for psychosis; HC refers to healthy controls. *Group difference significant at $p < 0.05$.

and life satisfaction (all $r \geq 0.30$, all $p \leq 0.026$). Across the entire sample, self-actualization correlated with social functioning, role functioning, and life satisfaction (all $r \geq 0.32$, all $p \leq 0.013$), while closure only correlated with role functioning ($r = 0.32$, $p = 0.013$) and spiritual pluralism was uncorrelated with functioning and life satisfaction. Contrary to our predictions, group status did not moderate the relationships between ASTI or any of the narrative self-transcendence themes and well-being; $p \geq 0.352$ for all interaction terms.

4 | Discussion

While extant research on self-transcendence in CHR is inconsistent, the research on self-transcendence in those on the psychosis spectrum appears to be more clear, with the majority of research showing higher self-transcendence scores among those with psychotic illness and positive associations between self-transcendence and positive symptoms. These findings are sometimes interpreted to suggest high self-transcendence may even be an indicator of risk for psychotic illness. In contrast, the broader self-transcendence literature points to high self-transcendence as an indicator of health, given robust findings of associations between self-transcendence and well-being across a wide variety of populations.

Importantly, studies that frame self-transcendence as risk factor tend to use the TCI-ST—which primarily measures the transpersonal aspect of self-transcendence—whereas the broader literature tends to use measures operationalising self-transcendence across transpersonal, interpersonal, intrapersonal, and temporal dimensions. We therefore sought to investigate the role of self-transcendence in a CHR population using more multidimensional measures: ASTI, a self-report measure with items measuring transpersonal, interpersonal, and intrapersonal self-transcendence, and a suite of narrative

identity indicators of intrapersonal, temporal, and transpersonal self-transcendence.

4.1 | Group Differences in Self-Transcendence

We found on average CHR individuals scored lower on self-actualization compared with HC individuals, indicating they narrated their personal stories with less strong themes of connectedness with the self (intrapersonal self-transcendence) compared with HC peers. Nonsignificant point estimates were in the direction of CHR individuals scoring lower on ASTI ($p = 0.058$) and closure ($p = 0.065$) than HC individuals. These findings fell short of statistical significance but may be worth noting for purposes of hypothesis generation in future studies. In addition, for CHR youth, attenuated positive symptoms were negatively correlated with ASTI and not correlated with any narrative themes. In the full sample, ASTI and narrative self-actualization were associated with better social functioning, role functioning, and life satisfaction in both groups, and closure was associated with better role functioning in both groups. Overall, we construe these findings to be more aligned with the broader empirical literature demonstrating that self-transcendence is an indicator of health and resilience than they are with the psychosis spectrum literature suggesting self-transcendence may be an indicator of risk and illness.

One possible explanation for discrepancies in the literature is that the TCI-ST includes items that are related to self-transcendence as well as items that seem to fall outside the boundaries of this construct. MacDonald and Holland (2002) compellingly argue that these items—which they characterise as related to “Dissolution of the Self in Experience” and “Belief in the Supernatural”—not only have questionable construct validity, but tap into other constructs known to have associations with serious mental illness. For instance, disturbance of

the self-world boundary is often categorised as an anomalous self-experience in the literature on sense of self in psychotic disorders (Parnas and Handest 2003). This may in part drive the positive relationships between TCI-ST and positive clinical symptoms found in some previous studies. Such an explanation parallels the literature on the relationship between psychosis and openness to experience. In this research, differences in how these seemingly opposing psychological domains are conceptualised and measured have led to mixed findings, and positive associations appear to be driven by connections between psychoticism and the maladaptive facets of openness (Widiger and Crego 2019).

4.2 | Developmental Relevance of Self-Transcendence in CHR

Social functioning (maintaining interpersonal relationships) and role functioning (increasing independence in roles such as student, worker, and homemaker) are both critical tasks of young adulthood. CHR youth frequently show poorer social and role functioning than their unaffected peers (Addington et al. 2008; Kim et al. 2013; Velthorst et al. 2018). It is promising to find, therefore, that while self-transcendence may be impacted in CHR, the relationship between self-transcendence and higher functioning may be preserved in these same individuals.

Given that self-transcendence has more often been examined in mid to late life populations, it is noteworthy that effects of self-transcendence on well-being and mental health are already present in individuals aged 14–24. This adds to the growing empirical evidence that self-transcendence is psychologically meaningful to those in late adolescence and early adulthood, and may be particularly relevant to those coping with challenging health situations which highlight the vulnerability of personal identity (Reed and Haugan 2021).

Our results also add to the evidence of narrative identity problems in CHR (Cowan et al. 2023). We found group differences in self-actualization, which may be a particularly salient theme for these youth participants. The psychosocial tasks of this developmental stage involve crucial identity work to understand one's place in the world and narrow in on fulfilling life paths to pursue (Marcia 1966). Attenuated psychotic symptoms and functional impairment may hamper these normative developmental processes in CHR youth, paralleling other issues CHR youth face in constructing an adaptive self-concept and narrative identity (Cowan et al. 2023; Patton, Cowan, and Mittal 2022; Cowan, McAdams, and Mittal 2019).

4.3 | Limitations

The original coding manual for narrative self-transcendence includes interconnectedness (Reischer et al. 2021), a potentially relevant theme not measured in this study due to resource constraints. Additionally, there were very few instances of spiritual pluralism in this sample's narratives. Given the theoretical relevance of these themes to the lived experiences of CHR individuals, it may be useful to measure interconnectedness in future

studies and to investigate spiritual pluralism in a study which queries such experiences more directly. Further, while our study employed multiple measures of self-transcendence, we did not administer the TCI due to financial constraints (the proprietary test has a fee-per-use) and concern for participant fatigue (the TCI-ST consists of 51 items). Finally, our relatively small sample size may have obscured true effects; a sensitivity analysis indicated we had 80% power ($\alpha = 0.05$) to detect differences between independent groups at $d = 0.54$. It would be beneficial to replicate the current findings in larger samples.

4.4 | Implications and Future Directions

4.4.1 | Measurement of Self-Transcendence Within CHR and Other Clinical Populations

Previous empirical research showing self-transcendence scores tend to be higher among those on the psychosis spectrum is based entirely on studies using the TCI, which notably measures just one facet of self-transcendence. The TCI-ST also includes items somewhat different from self-transcendence, such as religiosity and belief in psychic abilities. These observations imply continued, comprehensive research on self-transcendence may contribute to a better understanding of its role in populations across the psychosis spectrum.

More broadly, self-transcendence has been underexplored in psychologically ill populations. Our finding that self-transcendence may serve not just as a correlate of illness but also a potential resilience factor among CHR youth raises the possibility that self-transcendence may serve a positive role for individuals coping with symptoms of other mental illnesses. This prospect in turn suggests it is critically important to not only to conduct further research on the clinical implications of self-transcendence, but to be attentive to the specific contours of how this complex aspect of identity is operationalised in research.

Likewise, our results suggest that self-transcendence is a developmentally relevant variable for youth at risk for serious mental illness. Given that self-transcendence scales and coding schemes (including those used in the present study) have typically been utilised with older populations, an important future direction would be modifying and refining measures and coding schemes for this population.

4.4.2 | Possibilities for Intervention

Consideration of self-transcendence as a potential resource for resilience for the CHR population suggests novel routes for intervention. For example, individuals' appraisals of their psychotic-like experiences as benign, spiritual, or pathological may directly impact the extent of related harm (Maraldi et al. 2023); individuals who regularly experience psychotic-like symptoms but do not require clinical care tend to interpret these experiences as non-threatening spiritual events (Powers, Kelley, and Corlett 2017; Peters et al. 2017). When appropriate, therapeutic framing of patients' self-transcendent experiences as evidence of personal strength, rather than of cognitive disturbance, could be one route to stimulating resilient appraisals.

Another avenue relates to trajectories of functional impairment among those with attenuated psychotic symptoms. There may be critical periods for CHR youth during which enduring social impairment is associated with conversion to psychosis, whereas improvement in social function is associated with non-conversion (Cornblatt et al. 2007). Our finding that self-transcendence may be a psychological resource for preserving social and role functioning among CHR youth, therefore, suggests the potential importance of clinical research on self-transcendence interventions. For example, existing CHR social skills programs might be augmented by activities emphasising reciprocal interpersonal connectedness, such as volunteerism. Role functioning interventions might draw upon the interior-focused, self-actualizing aspects of self-transcendence which may be cultivated through activities such as mindfulness and self-compassion training (Hickey et al. 2021; Reich, Evans, and O'Shea 2022).

Finally, our findings suggest it may be valuable to explore practices such as working with individuals to make coherent meaning of disturbing psychotic-like experiences, thereby increasing narrative closure (Wiesepape et al. 2023), and to modify future goals in such a way that enables maintenance of an integrated, fulfilling sense of self (Thomsen et al. 2023), thereby increasing narrative self-actualization. While there have been narrative-focused interventions developed for individuals with psychosis (Roe et al. 2014; Seikkula and Olson 2003), to our knowledge, no such programs exist for the CHR population. The present research suggests this may be a worthy endeavour.

4.5 | Conclusion

Our findings support the idea that the development of self-transcendence in young adulthood is a normative, healthy process—and evidence of problems with this process may be seen in the direct reports and stories of lived experience of those experiencing attenuated psychotic symptoms. Despite these apparent deficits, self-transcendence may be a psychological resource for youth regardless of symptom status; interventions that promote self-transcendent beliefs and experiences in CHR youth may therefore be worthy of exploration.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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