



EXTERNAL LOCUS OF CONTROL IS ASSOCIATED WITH POSITIVE SYMPTOMS OF PSYCHOSIS IN YOUTH AT CLINICAL HIGH-RISK



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BACKGROUND

- Psychosis is a psychiatric syndrome typically characterized by a range of adverse features, including hallucinations and delusions.
- Early identification and treatment are key to improving the outcome for those predisposed to this syndrome¹.
- An individual's locus of control (LOC) refers to the extent to which the individual perceives control over the events that affect their lives².
- An external LOC, or the belief that events occur independently of one's actions, has been associated with worse symptoms and fewer recovery periods in psychotic disorders³.
- Little is known about LOC among youth who are showing early signs of illness, – i.e., youth at “clinical high risk” (CHR) for psychosis.
- Studying the relation of LOC and symptoms in youth at CHR and help-seeking controls (HSC) may establish whether external LOC is a psychological risk factor for the later development of psychosis.
- This knowledge could aid in early identification and enlighten treatment approaches for those at CHR.

HYPOTHESES

- LOC is more often external in youth who are at CHR relative to youth who are not
- LOC is associated with severity of “positive” symptoms in youth at CHR

PARTICIPANTS

Variable	Clinical High Risk	Help-Seeking Control	Overall
Male (%)	15 (33.3)	26 (40)	41 (37.3)
	30 (66.7)	39 (60)	69 (62.7)
Total	45	65	110
Age (SD)*	15.32 (2.34)	16.52 (3.06)	16.03 (2.84)
African American (%)	21 (33.3)	29 (44.6)	50 (45.4)
Caucasian	16 (25.4)	22 (33.8)	38 (34.5)
Other	2 (3.2)	3 (4.6)	5 (4.5)
> 1 Race	6 (9.5)	11 (16.9)	17 (15.4)
< \$20,000/year (%)	11 (26.8)	17 (28.8)	28 (28)
20,000 – 39,999	12 (29.3)	11 (18.6)	23 (23)
40,000 – 100,000	9 (21.9)	21 (35.6)	30 (30)
> 100,000	9 (21.9)	10 (16.9)	19 (19)

* The two groups differed on age [$t(108) = 2.22, p = .03$], but no other demographic variable. These differences were normalized when calculating BASC-2 T-scores.

MEASURES

SIPS Symptom Scales

Symptom Category	Symptoms	Associated Features
Positive Symptoms	Unusual Thought Content/Delusional Ideas Suspiciousness/Persecutory Ideas Grandiosity	Perceptual Abnormalities/Hallucinations Disorganized Communication
Negative Symptoms	Social Anhedonia Avolition Expression of Emotion	Experience of Emotions and Self Ideational Richness Occupational Functioning
Disorganization Symptoms	Odd Behavior or Appearance Bizarre Thinking	Trouble with Focus and Attention Personal Hygiene
General Symptoms	Sleep Disturbance Dysphoric Mood	Motor Disturbances Impaired Tolerance to Normal Stress

MEASURES (cont.)

Diagnosis & Symptom Severity: Structured Interview for Psychosis-risk Syndromes (SIPS)⁴

- A clinician-administered interview used to identify and rate attenuated psychotic symptoms and related symptoms, and to diagnose psychosis-risk syndromes. The symptom dimensions sum provides a continuous measure of these symptoms, listed in the table.

Locus of Control: Behavioral Assessment System for Children, 2nd Ed. (BASC-2)⁵

- A self-report questionnaire designed to measure clinical and personality constructs among youth, including LOC. Higher scores correspond to a more external LOC.

RESULTS

1. Correlation of LOC with Risk-Status

	CHR	HSC	Statistic
Mean LOC Score*	59.96 (13.23)	54.19 (11.51)	$t = -2.43, p = .017$

* General population $M = 50, SD = 10$

2. Correlations of LOC with SIPS symptom scales in the full sample

Symptom Domain	Correlation Coefficient	P Value
Positive	.34**	< .001
Negative	.12	.20
Disorganized	.06	.50
General	.20*	.04

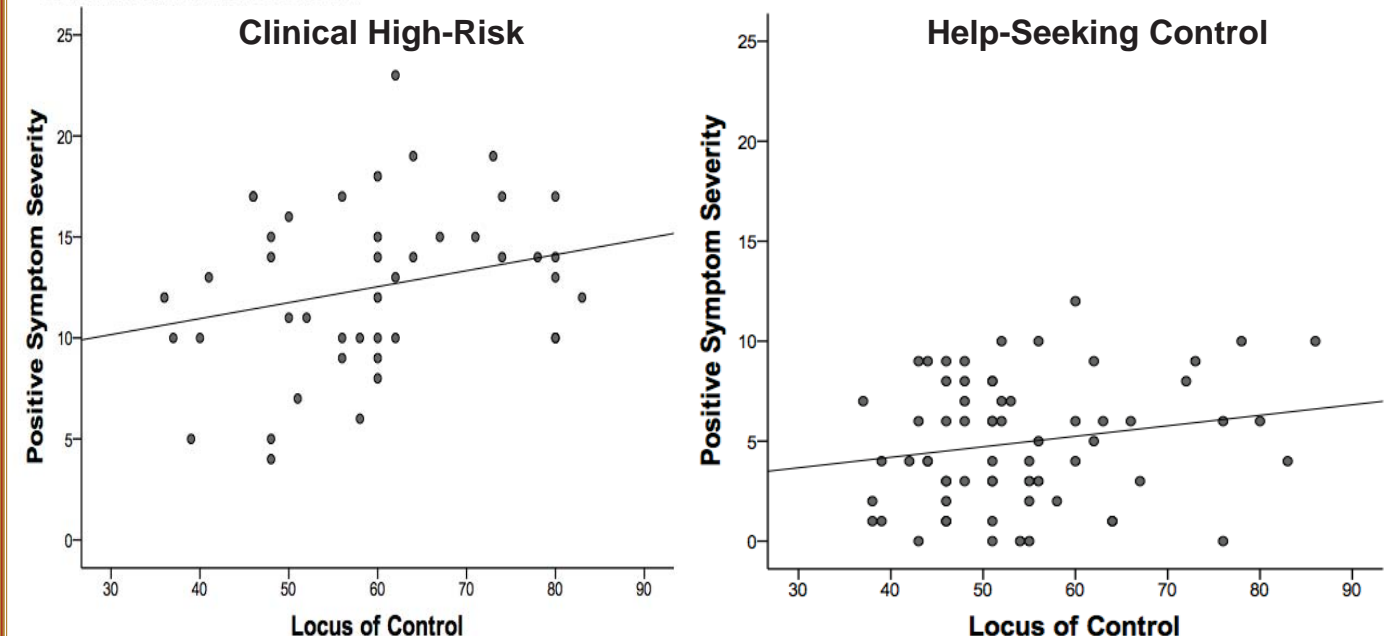
** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

3. Correlations of LOC with positive and general symptoms separately by group

Symptom Domain	CHR	HSC
Positive	.31*	.19
Negative	.18	-.02
Disorganized	-.07	.01
General	.30	.08

* Correlation is significant at the 0.05 level (2-tailed).



4. Correlations of LOC with specific SIPS positive and general symptoms in the CHR group

Symptom	Correlation Coefficient	Symptom	Correlation Coefficient
Unusual Thought Content	.42**	Sleep Disturbances	.22
Suspiciousness	.46**	Dysphoric Mood	.29
Grandiosity	-.04	Motor Disturbances	.13
Perceptual Abnormalities	.21	Impaired Tolerance to Normal Stress	.13
Disorganized Communication	-.18		

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

SUMMARY OF FINDINGS

- Analyses revealed bias toward external LOC among participants at CHR
- An external LOC was significantly correlated with the positive and general symptom domains in our full sample
- Once separated by diagnostic group, an external LOC correlated with increased positive symptoms of psychosis in the CHR group, but not in the HSC group. LOC was not significantly associated with general symptoms in the HSC group, and there was a trend toward significance in the CHR group
- The specific symptoms within the positive symptom domain that correlated with LOC in the CHR group were unusual thought content/delusional ideas and suspiciousness/persecutory ideas. There were no significant associations between an external LOC and specific general symptoms

LIMITATIONS

- Our relatively small sample size limits statistical power
- The study's cross-sectional nature prevents interpretation of the direction of association between LOC and symptom variables

DISCUSSION

- Emerging psychotic symptoms may provoke perceptions of uncontrollability among youth
- Alternatively, perceptions of uncontrollability over one's environment may increase attenuated psychotic symptoms (e.g., mistrust of others)
- General psychiatric symptoms may be associated with LOC, but to a lesser degree and with less specificity
- Results supports the possibility that LOC may be a risk factor for psychosis
- LOC may be a useful target for consideration in early detection and intervention efforts
- Future studies should examine relations of LOC and symptoms over time in youth at CHR

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