

# Disorganization Is Associated With Adverse Prognosis in Schizophrenia

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## Introduction

- Disorganization
  - Entails speech (e.g., ambiguous word meanings) and behavior (e.g., mannerisms) [1–2]
  - Relatively unstudied in psychosis
  - Separate dimension than positive or negative symptoms [2]
  - Linked to poor functional outcomes [3-4]
- Rehospitalizations and longer length of stay
  - Costly [5]
  - May be related to poor functioning outcomes
- Positive association between disorganization and rehospitalization as well as length of stay [6–8]
  - Only briefly studied

## Participant Characteristics

<b>Sample</b>	
N	519
Number of Encounters	1424
Sex = Female (%)	277 (53.4)
Age (Mean ± SD)	28.4 ± 15.0
Ethnicity (%)	
Declined	1 (0.2)
Hispanic-Latinx	58 (11.2)
Non-Hispanic-Latinx	409 (78.8)
Unknown	51 (9.8)
Insurance	
Commercial	21 (4.0)
HMO	161 (31.0)
Medicaid	251 (48.4)
Medicare	81 (15.6)
Self-Pay	5 (1.0)
<b>Clinical Characteristics</b>	
Primary Diagnosis (%)	
Adjustment Disorder	4 (0.8)
Antisocial Personality Disorder	5 (1.0)
Autism or PDD	23 (4.6)
Bipolar Spectrum Disorder	154 (31.0)
Borderline Personality Disorder	14 (2.8)
Dementia or Organic Brain Problem	3 (0.6)
Depressive Disorder	5 (1.0)
Eating Disorder	1 (0.2)
Impulse Control Disorder	4 (0.8)
OCD and Related	1 (0.2)
Other Personality disorder	16 (3.2)
Schizoaffective Disorder	74 (14.9)
Schizophrenia or Psychotic Disorder	185 (37.2)
Substance Induced	7 (1.4)
Substance Misuse	1 (0.2)

## Objectives

- Use linear models to determine associations between disorganization and length of hospital stay (N=519)
- Identify correlations of disorganization and number of hospitalizations after initial hospitalization at five ranges:
  - 30 days (n=517)
  - 6 months (n=507)
  - 1 year (n=495)
  - 2 years (n=479)
  - 5 years (n=370)

## Key Findings

- Positive association between disorganization and length of hospital stay at initial rating ( $r=0.16$ ;  $p<0.001$ )
- Positive association between initial disorganization rating and average length of hospital stay across hospitalizations ( $r=0.18$ ;  $p<0.001$ )
- No significant relationship between disorganization and number of rehospitalizations
  - 30 days ( $p=0.81$ ); 6 months ( $p=0.74$ ); 1 year ( $p=0.21$ ); 2 years ( $p=0.38$ ); 5 years ( $p=0.54$ )
- Significance unchanged after controlling for age and sex

## Participant Characteristics (Continued)

	At Initial Rating	30 Days	6 Months	1 Year	2 Years	5 Years
N	519	517	507	495	479	370
Number of Encounters	519	570	773	892	1019	904
Sex = Female (%)	277 (53.4)	277 (52.6)	273 (53.8)	270 (54.5)	265 (55.3)	218 (58.9)
Age (Mean ± SD)	28.4 ± 15.0	28.4 ± 15.1	28.7 ± 15.1	29.1 ± 15.2	29.8 ± 15.3	31.8 ± 15.2
Conceptual Disorganization (Mean ± SD)	3.1 ± 1.8	3.2 ± 1.8	3.1 ± 1.8	3.1 ± 1.8	3.0 ± 1.8	3.0 ± 1.8

## Methods

- Participants were recruited from Zucker Hillside Hospital (N=519)
  - Electronic health records used to collect data (2012–2019)
- Conceptual Disorganization scores [1 (None) to 7 (Extremely Severe)] from the BPRS scale [9–10]
  - 62% (322/519) of participants scored  $\geq 3$  ( $\geq$ Mild)
- Number of hospital visits after 30 days, 6 months, 1 year, 2 years, and 5 years from the initial disorganization rating
- Linear models created using R
  - Stats version 4.3.1

BPRS—Brief Psychiatric Rating Scale

## Linear Models

	Estimate	$r^2$	$p$ -value
Length of Hospital Stay at Initial Rating	2.9	0.03	<0.001
Average Length of Hospital Stay	2.6	0.03	<0.001
Number of Rehospitalizations Within 30 Days	-0.01	<0.001	0.81
Number of Rehospitalizations Within 6 Months	-0.02	<0.001	0.74
Number of Rehospitalizations Within 1 Year	-0.09	0.003	0.20
Number of Rehospitalizations Within 2 Years	-0.07	0.001	0.38
Number of Rehospitalizations Within 5 Years	-0.05	<0.001	0.54

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