
Clinical Correlates of Health Literacy in People with Serious Mental Illness (SMI)

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Overview:

- Background
 - Objective
 - Methods
 - Results
 - Conclusions
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Background:

- SMI prevalence
 - Affects 9.8 million people in the United States (NIMH, 2015)
 - Thought to be one of the greatest health care disparities (Bartels & DeMilia, 2017)
 - Health literacy in the United States
 - Definition
 - Measurement tools
 - 1/3 of people have low health literacy (Kutner, 2006)
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Background:

- Health literacy predictors in the general population
 - Education
 - Age
 - Gender
 - Minority status
 - Income
 - Cognition
 - Few studies assess predictors of health literacy in the SMI population
 - Type of mental illness (Lincoln et al., 2008)
 - Older age (Clausen et al., 2016)
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Purpose of the study:

- To characterize health literacy among adults with serious mental illness
 - To examine clinical and demographic predictors of health literacy in people with SMI
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Hypotheses:

- H1: People with SMI will have low health literacy.
 - H2: Health literacy will be associated with age, education, minority status, positive and negative symptoms, and cognition.
 - H3: Cognition will predict health literacy after controlling for education, age, gender, and minority status.
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Methods:

- Sample
 - Recruitment
 - Community mental health centers in Wyoming and Colorado
 - Paper and electronic advertisements
 - Provider referral
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Methods (Cont.):

- Inclusion:
 - Age 18 or older
 - Diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, major depressive disorder
 - Antipsychotic, mood stabilizing, antidepressant medication
 - Able to complete the assessment battery
 - Able to provide informed consent
 - Exclusion:
 - Diagnosis of dementia
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Methods (Cont.):

- Procedure
 - Informed consent for screening
 - Initial screener for study entry
 - Informed consent for assessment
 - Interview with testing battery
 - Trained interviewer



Methods (Cont.):

- Measures used in current study
 - Sociodemographics
 - Test of Functional Health Literacy Assessment (TOFHLA; Parker et al., 1995)
 - Positive and Negative Psychiatric Symptom Assessment (PANSS; Kay, Fiszbein, & Opler, 1987)
 - Hamilton Depression Rating Scale (HAM-D; Hamilton, 1960)
 - Mattis Dementia Rating Scale (DRS; Mattis, 1988)
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Methods (Cont.):

- Data Analysis
 - SPSS 23
 - Correlation between health literacy subscales and demographics/other total test scores
 - Hierarchical multiple linear regression using theory- and data-driven predictor variables
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Table 1. *Demographic Characteristics of Participants*

Instrument	<i>n</i>	%
Demographic		
Race/Ethnicity	56	100
White	48	85.7
Non-White	8	14.3
Gender	56	100
Male	21	37.5
Female	34	60.7
Other	1	1.8
Living Situation	56	100
Alone	26	46.4
With Someone	26	46.4
Other	3	5.4
Missing	1	1.8
Marital Status	56	100
Married/Cohabiting	11	19.6
Not Current Married	29	51.8
Single, Never Married	15	26.8
Missing	1	1.8
Highest Education Level	56	100
<9 th Grade	4	7.1
9 th -12 th (no diploma)	4	7.1
GED	1	1.8
H. S. Graduate	15	26.8
Some College	22	39.3
Associate Degree	1	1.8
Bachelor Degree	7	12.5
Graduate/Prof Degree	2	3.6

Table 2. *Literacy, Health, and Symptomatic Characteristics of Participants*

Instrument	<i>n</i>	%	<i>M</i>	<i>SD</i>	Range	Low	High
Health Literacy							
TOFHLA Raw Numeracy	56	--	13.96	2.304	10	7	17
TOFHLA Reading Comprehension	56	--	42.63	6.797	28	22	50
TOFHLA Total Score	56	--	84.54	10.973	47	52	99
TOFHLA Functional Level	56	100					
Inadequate	3	5.4					
Marginal	5	8.9					
Adequate	48	85.7					
Psychiatric Symptoms							
PANSS Positive Scale	56	--	14.00	5.092	18	7	25
PANSS Negative Scale	56	--	13.34	6.512	24	7	31
Cognitive Functioning							
DRS Total Score	56	--	131.45	10.775	47	97	144

Table 3. Correlations Among Variables of Interest

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Race/Ethnicity	--										
2. Gender	.112	--									
3. Living Situation	-.044	-.044	--								
4. Marital Status	-.038	.197	.239	--							
5. Highest Education Level	-.059	.062	.152	-.046	--						
6. PANSS Positive	.172	-.040	.172	-.104	-.185	--					
7. PANSS Negative	.152	.006	.021	-.145	-.244	.410*	--				
8. DRS Total	-.160	-.097	-.040	.040	.153	-.310*	-.504*	--			
9. TOFHLA Numeracy	-.172	.264	.309*	.066	.038	-.045	-.092	.272*	--		
10. TOFHLA Reading	-.250	-.031	.101	.103	.025	-.262	-.192	.407*	.394*	--	
11. TOFHLA Functional	-.288*	.192	.244	.035	-.042	-.069	-.071	.302*	.663*	.684*	--
12. TOFHLA Total Score	-.269*	.118	.270*	.104	.045	-.189	-.185	.428*	.835*	.819*	.807*

Note. Correlations represent Pearson, point-biserial, Spearman's rho.

* $p < .05$

*** $p < .001$**

Table 4. Two-step hierarchical linear regression analysis predicting total TOFHLA health literacy scores.

Step/Variables	β	R^2	ΔR^2	F	df	t	p
Step 1		.089		2.498	2,51		.092
Gender	.120					.897	.374
Living Situation	.276					2.065	.044
Step 2		.321	.232	5.466	3,48		.002
Gender	.169					1.409	.165
PANSS Positive Scores	-.149					-1.111	.272
PANSS Negative Scores	.187					1.191	.240
Living Situation	.317					2.615	.012
DRS Total Scores	.519					3.423	<.001

Table 5. Two-step hierarchical linear regression analysis predicting reading comprehension TOFHLA health literacy scores.

Step/Variables	β	R ²	ΔR^2	F	df	t	p
Step 1		.014		.364	2,51		.697
Gender	-.036					-.260	.796
Living Situation	.112					.807	.423
Step 2		.219	.205	2.693	5,48		.032
Gender	.001					.009	.993
Living Situation	.163					1.257	.215
PANSS Positive Scores	-.222					-1.545	.129
PANSS Negative Scores	-.162					.960	.342
DRS Total Scores	.103					2.542	.011

Table 6. Two-step hierarchical linear regression analysis predicting raw numeracy TOFHLA health literacy scores.

Step/Variables	β	R ²	ΔR^2	F	df	t	p
Step 1		.171		5.243	2,51		.008
Gender	.271					2.127	.038
Living Situation	.317					2.483	.016
Step 2		.284	.113	3.804	5,48		.006
PANSS Positive Scores	-.026					-.186	.853
PANSS Negative Scores	.157					.973	.335
Gender	.313					2.510	.015
Living Situation	.332					2.707	.010
DRS Total Scores	.404					2.602	.013

Conclusions:

- One of the first examinations of health literacy in adults with SMI
 - The sample was found to have high health literacy
 - The most significant predictor of health literacy was cognitive functioning
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Conclusions:

- Implications
 - Accommodation for low health literacy can be particularly important for individuals who:
 - Live alone
 - Have poor cognitive functioning
 - Limitations
 - Small sample size
 - Participants included in the study were part of a larger health intervention program
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