



The Rural Identity Scale: A New Approach for Understanding Rural Adolescent Substance Use

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Introduction

Adolescents living in rural areas of the United States experience more risk factors for substance use, initiate substance use at an earlier age, and have higher rates of overall substance use compared to their nonrural counterparts. One challenge to developing effective interventions for rural youth is the lack of consensus about how to measure rurality. Drawing on social identity theory, this study examined the validity of a self-report measure that assesses adolescent attachment to rural place (i.e., physical location) as well as rural space (i.e., cultural community). We also examined the relationship between rural self-identity, descriptive norms for substance use, and self-reported use of tobacco, alcohol, and marijuana.

Methods

•Data collection: Three-forms survey design in 2009

•N = 3310 (F: 49%, White: 87%, average age: 12.3 yrs, 7th grade) in 39 rural PA & OH schools based on NCES's urban-centric locale categories

•Measurement

▪ Rural identity: 11 items derived from in-depth interviews with 113 rural adolescents

▪ Descriptive norms : The number of friends who use substance ($\alpha = .92$)

▪ Substance use : Cumulative lifetime consumption for alcohol, and each substance use during the 30 days prior to the survey

Data Analysis

- Missing data: Multiple Imputation
- Validity of Rural Identity : EFA & CFA
- Predictive Validity: Multilevel regression analysis

Results

- I. Rural identity : 3 factors (i. e., place attachment, similarity, and familiarity)
- II. Statistically significant interactions involving norms showed that descriptive norms moderated the relationship between rural identity and substance use.

Table 1. Rural identity factor loading and factor correlation based on CFA

Items	Place		
	attachment	Similarity	Familiarity
1. I want to live in my town for a long time.	0.682		
2. I think my town is a good place to live.	0.731		
3. I feel at home in my town.	0.751		
5. Belonging to my town is a part of who I am.	0.759		
6. I feel proud of living in my town.	0.846		
9. Overall, people in my town are like me.		0.785	
10. I am similar to people who live in my town.		0.859	
11. I am typical of people who live in my town.		0.718	
7. Most of the people in my town know me.			0.769
8. I know most of people who live around me.			0.713
Correlation			
place	—		
similarity	0.588	—	
space	0.441	0.545	—

$\chi^2(32) = 275.93, p < .001, RMSEA = 0.059, NNFI = 0.964, CFI = 0.975.$

Results

Table 2. Influence of rural identity and descriptive norms on substance use including interactions

	Life time alcohol use			Recent alcohol use			Smoking Cigarette			Marijuana use			Chewing tobacco		
	β	SE	t-ratio	β	SE	t-ratio	β	SE	t-ratio	β	SE	t-ratio	β	SE	t-ratio
Female	-0.06**	0.02	-3.91	-0.03*	0.02	-2.10	0.00	0.02	0.25	-0.03	0.02	-1.58	-0.11***	0.02	-6.95
Age	0.03	0.02	1.69	0.03	0.02	1.84	0.03*	0.02	2.13	-0.03	0.02	-1.51	0.01	0.02	0.54
Academic aspiration	0.00	0.02	-0.04	-0.05*	0.02	-2.31	-0.08**	0.02	-3.81	-0.08***	0.02	-3.92	-0.04	0.02	-1.97
White	0.01	0.02	0.66	0.04*	0.02	2.35	-0.01	0.02	-0.92	0.00	0.02	0.26	-0.01	0.02	-0.53
Living at town vs. not at town ¹	0.01	0.02	0.41	0.01	0.02	0.49	0.01	0.02	0.80	0.00	0.02	-0.14	-0.02	0.02	-1.12
Living at Farm vs. Not at farm ²	0.04*	0.02	2.16	0.07**	0.02	4.29	0.04*	0.02	2.44	0.04*	0.02	2.17	0.05**	0.02	3.25
Place Attachment	-0.10***	0.02	-4.41	-0.04	0.02	-1.86	-0.03	0.02	-1.21	0.00	0.02	0.17	0.01	0.02	0.30
Familiarity	0.04	0.02	1.94	0.03	0.02	1.32	0.02	0.02	0.84	0.01	0.02	0.34	0.03	0.02	1.38
Similarity	0.03	0.02	1.33	0.05*	0.02	2.37	0.03	0.02	1.55	0.00	0.02	-0.14	0.05*	0.02	2.11
DN	0.53***	0.02	25.04	0.32***	0.02	15.98	0.49***	0.02	26.52	0.28***	0.02	14.20	0.44***	0.02	21.17
PA*DN	-0.04	0.02	-1.69	-0.16***	0.02	-6.38	-0.14***	0.02	-6.31	-0.26***	0.02	-11.56	-0.01	0.03	-0.56
Fami*DN	0.03	0.02	1.67	0.16***	0.02	7.35	0.12***	0.02	6.19	0.10***	0.02	4.44	0.12***	0.02	5.97
Sim*DN	-0.01	0.02	-0.33	-0.02	0.02	-0.92	0.02	0.02	1.22	-0.09***	0.02	-3.99	0.02	0.02	0.76

PA: placement attachment, DN: Descriptive norms, Fami: Familiarity, Sim: Similarity

¹ dummy-coded with Living at town = 1 and not at town = 0

² dummy-coded with Living at farm = 1 and not at farm = 0

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Summary of unstandardized simple slopes

Criterion Variables	Predictor	Moderator	Simple Slopes at Three Points of Moderators		
			1SD Below	M	1SD above
Current Alcohol use	Place Attachment		0.07*	-0.06*	-0.17***
	Familiarity		-0.12***	0.03	0.18***
Smoking Cigarette	Place Attachment		0.09**	-0.04	-0.16***
	Familiarity	Descriptive norms	-0.11***	0.02	0.15***
Marijuana Use	Place Attachment		0.23***	-0.04	-0.23***
	Familiarity		-0.09**	0.02	0.11***
	Similarity		0.08*	-0.01	-0.09**
Chewing tobacco	Familiarity		-0.10**	0.03	0.17***

* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

❖ Exploratory factor analysis of the rural identity scale yielded a three-factor solution. As expected, the place attachment items formed one of the subscales. The items assess attachment to rural culture formed two subscales: similarity and familiarity.

❖ Descriptive norms (perceived peer use) were positively related to substance use.

❖ There were interactions between rural identities and descriptive norms on substance use

➤ Among those who perceived that peers use drugs, we observed a stronger negative relationship between place attachment and substance use and a stronger positive relationship between familiarity and substance use.

❖ The results of this study suggest that self-reported rural identity is a valid and reliable tool for understanding substance use in this underserved population.

❖ Future research should examine the utility of this scale for assessing the effectiveness of culturally targeted substance use prevention interventions in the rural context.

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