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The Illinois Institute for Rural Affairs (IIRA) works to improve the quality of life for rural residents by partnering with public and private agencies on local development and enhancement efforts.

Western Illinois University

Health Related Beliefs of Ethnic Groups: An Exploratory Analysis

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Abstract

This paper tests the proposition that one's cognitive representations of health are related to one's perceptions about happenings in the community. Microdata from a telephone survey of adults aged 18 and older informed the empirical analysis. Results show that ethnic minorities view illness as one's loss of personal control; this implies that treatment must address the patient's perceptions about interpersonal transgressions or misconduct.

Introduction

Research in anthropology suggests that the health beliefs of professionals and laypersons alike are shaped by their cultural context[2]. In an earlier paper, I highlighted the theory or reasoning behind this difference[3]. In this paper, the focus is on the extent to which the health beliefs and schemas[4] of Whites differ from those of ethnic-minority groups. Assessing these 'cultural' differences are essential to manage the health prevention and treatment tactics of our nation's growing multicultural population[5].

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[1] Professor, Illinois Institute for Rural Affairs, Western Illinois University.

[2] Dinos, S., Ascoli, M., Owiti, J. A., & Bhui, K. (2017). Assessing explanatory models and health beliefs: An essential but overlooked competency for clinicians. *British Journal of Psych Advances*, *23*(2), 106-114.

[3] Athiyaman, A. (2021). Differing perceptions of external environment: The case of ethnic groups in the Midwest, metro *versus* nonmetro region, *Research Brief*, 3(11), July. Available: http://www.iira.org/wp-content/uploads/2021/07/ethnicity_pereceptions_v3_n11_3.pdf.

[4] Information which a person has regarding health; see, Eisenstadt, M., & Kareev, Y. (1975). Aspects of human problem solving: The use of internal representations. *Explorations in cognition*, 308-346.

[5] In 2022, approximately, 59% of the population (N = 333mil) were Non-Hispanic Whites; the same number in 2010 was 63% (N=308.7mil). It amounts to an ACGR of -1% for the 12 years; see 2021 American Housing Survey; see, https://www.huduser.gov/portal/datasets/ahs.html.

Cultural Differences in Health Beliefs

White Americans tend to view illness at the intrapersonal level, a deviation caused by viruses, bacteria, and/or stress[6]; it is assumed that the individual will consult an expert in medicine to treat this "temporary" deviation in her health status[7]. In contrast, ethnic minorities think of illness as a dynamic, long-term, interpersonal process that involves the larger community, for example, changing relationships and dysfunctions in the community[8]. Support for this argument comes from a study of the health beliefs of189 cultures[9]; it revealed two explanations or theories: theories of natural causation and theories of supernatural causation. Theories of natural causation attribute illness to bacteria, accidents, etc.; only four cultures had this schema. Theories of supernatural causation such as sorcery were the typical schemas of majority of the cultures; Table 1 provides examples of supernatural causations.

Table 1. Examples of Health Beliefs of Ethnic-Minority Groups

Group	Beliefs about Causes of Illness	Remedy
African Americans	Mystical retribution, hot-cold, and blood[10].	Nutritional practices related to hot-cold schemas.
Mexican Americans	Susto (frightening experience) and mal de ojo (the evil eye)[11].	As a cure for the evil eye, raw egg is rubbed over the body of the ill.

[6] Young, A. (1982). The anthropologies of illness and sickness. *Annual review of anthropology*, *11*(1), 257-285.

[7] Eisenberg, L. (1977). Disease and illness distinctions between professional and popular ideas of sickness. *Culture, medicine and psychiatry*, *1*(1), 9-23.

[8] Kleinman, A. (1980). *Patients and healers in the context of culture: An exploration of the borderland between anthropology, medicine, and psychiatry* (Vol. 3). Univ of California Press.

[9] Murdock, P. (1980). *Theories of Illness*: *A World Survey*. Pittsburgh: University of Pittsburgh Press.

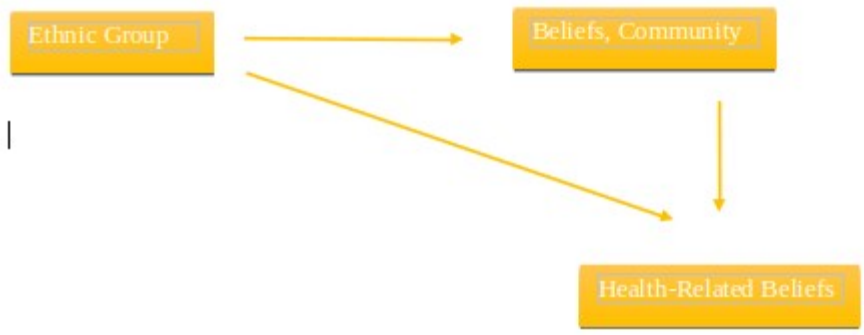
[10] Snow, L. F. (1978). Sorcerers, saints and charlatans: Black folk healers in urban America. *Culture, Medicine and Psychiatry*, *2*, 69-106.

[11] Rubel, A. J. (1964). The epidemiology of a folk illness: Susto in Hispanic America. *Ethnology*, *3*(3), 268-283.

Methodology

Data are from *Marist Poll: America Now Index August 2022*[12]. The telephone survey of adults aged 18 and older was fielded during August 15-18, 2022. Responses from 1,031 adults were extracted and mined to gain insights into the health beliefs of different ethnic groups. Contingency tables were constructed to assess relationships among categorical variables; χ^2 tests were employed to check for variable independence. The effect of ethnic-group membership on health beliefs was tested both directly and indirectly through the mediated effect of respondents' 'beliefs about community'; Figure 1 shows the data generating process[13]. If ethnic minorities view health as interpersonal, then their community beliefs should be a mediating covariate, not a confounding variable; analysis of variance was used to test the interaction.

Figure 1: Ethnicity Influences on Health-Related Beliefs: 'Beliefs about Community' as a Mediating Covariate



Findings

The variable 'geographical region' had five levels; respondents from the nonmetro and small towns accounted for 34% of the total. One-half of the respondents were either from a big city or a city suburb. The educational level of the metro respondents was higher than the educational level of small town and rural respondents (Table 2). Women were the majority, 51% of the respondents, and they were from small geographies, small city / town (Figure 2).

[12] See, https://ropercenter.cornell.edu/health-poll-database-project

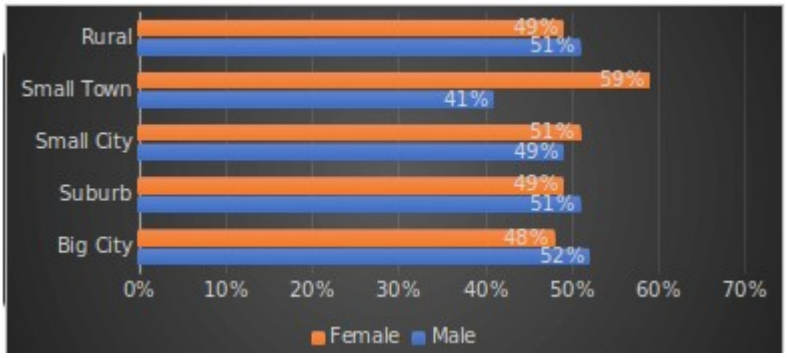
[13] Pearl, J. B. (2009). *Causality: Models, Reasoning, and Inference*. 2nd ed. Cambridge: Cambridge University Press.

Table 2: Respondents' Profile

Geography	% of Respondents	Education	Big City	Suburb	Small City	Small Town	Rural
Big City	24%	Edu 1	27%	18%	18%	45%	30%
Suburb	26%	Edu 2	25%	32%	41%	32%	38%
Small City	17%	Edu 3	25%	29%	18%	13%	16%
Small Town	18%	Edu 4	22%	20%	23%	10%	16%
Rural	16%	NA	1%	0.19%	0.10%	.16%	0%
n	1025	n	243	266	175	182	160

Note: Edu 1 = High school or less; EDU 2 = Some college / associates; EDU3 = College degree; EDU 4 = Graduate / professional degree; NA = no response. χ^2 for education by location = 78.69, $p < .0001$

Figure 2: Geography by Gender



Note: χ^2 = 6.4158, $p > .17$; Phi, correlation: .08.

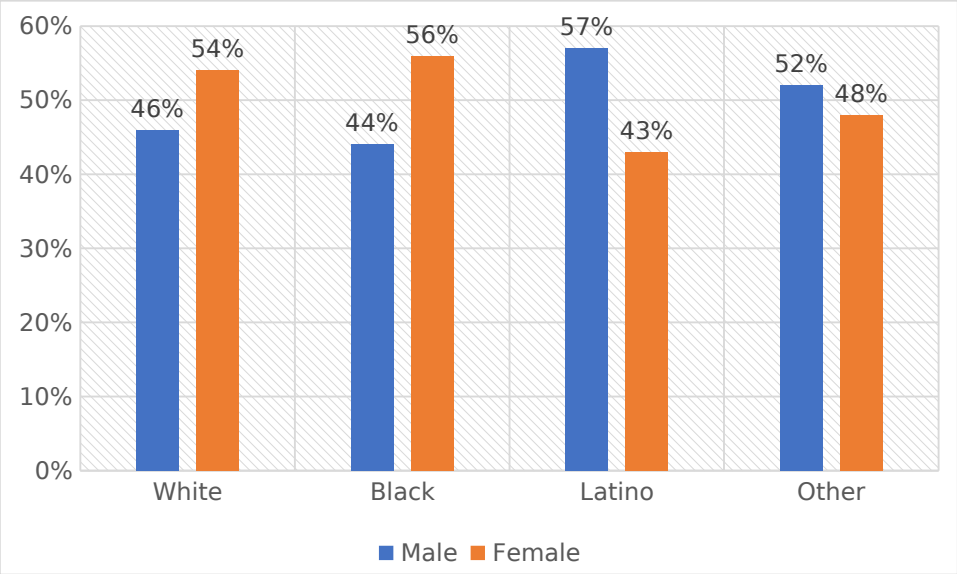
Table 3 shows the distribution of ethnic groups by geography; Whites are the majority in all geographies except big cities. Females are the majority in both the White and Black ethnicities; the opposite is true for Latinos (Figure 3).

Table 3: Ethnic Groups, their Distribution across Geographies

	Geography				
Group	**Big City**	**Suburb**	**Small City**	**Small Town**	**Rural**
White	46%	54%	62%	79%	70%
Black	16%	15%	16%	6%	.46%
Latino	25%	14%	14%	8%	13%
Other	13%	17%	8%	7%	17%
n	238	252	172	172	151

Note: χ^2 = 84.0851, p < .0001; Phi, correlation: .29.

Figure 3: Gender by Ethnicity



Note: χ^2 = 7.8305, p < .0496; Phi, correlation: .09.

Causal Analysis

To assess the need for covariate adjustment in order to estimate the effect of ethnicity on health beliefs, the "causalgraph" procedure was implemented. Two causal models were explored: a confounding covariate model and a mediating covariate specification. Table 4 shows the results of this exercise; as expected, the null set is not a valid adjustment for the confounding covariate model.

Table 4: Null and Covariate Adjustments Applied to the Causal Model, Figure 1

Covariate Adjustment Test: No Adjustment				
Causal Effect of race on mpinx1ga				
Model	Size	Valid	Minimal	Covariates mpinx1oa
Confounding Covariate	0	No	No	
Mediating Covariate	0	Yes	Yes	

Covariate Adjustment Test: Covariate Adjustment				
Causal Effect of race on mpinx1ga				
Model	Size	Valid	Minimal	Covariates mpinx1oa
Confounding Covariate	1	Yes	Yes	*
Mediating Covariate	1	No	No	*

Note: In Figure 1, "race" = ethnic group; mpinx1ga = health-related beliefs, and mpinx1oa = beliefs about community; see Appendix 1 for operational definitions of variables.

ANOVA Implementation

The analysis of variance had the following health-related belief as the dependent variable:

> Mpinx1ga: There is little risk to your health right now; measured on a 11-point scale: 0 = strongly disagree and 10 = strongly agree.

The theory is that interpersonal factors such as life in the community would impact health-related beliefs of the minorities, but not the Whites. The test of this proposition involved a model with the following variables: ethnicity, gender, area of residence (see Table 3), family / household income, and the belief that they live in a society that is fair and just. An interaction term for ethnicity and community belief was also part of the model.

Table 5 shows the sources of variation in the dependent variable; the model accounts for 36% of the variation, a statistically significant proportion. The Type III sum of squares, or partial sum of squares, are shown for each of the variable in the model (Table 5).

Table 5: ANOVA Model, with Interactions

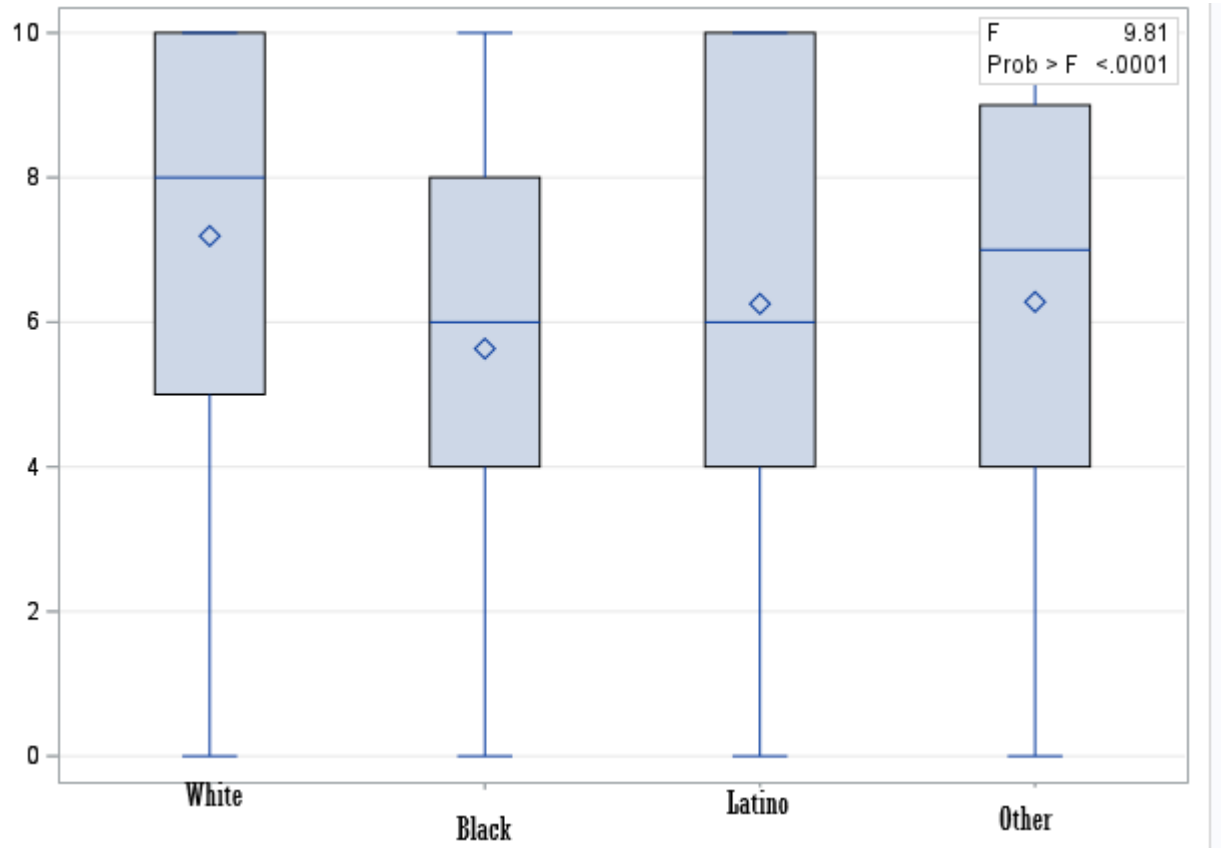
Dependent Variable: Risk to health

Source	DF	Sum of Squares	Mean Square	*F*	*p > F*
Model	29	2474	85.30	15.86	<.0001
Error	817	4395	5.38		
Corrected Total	846	6869			

Source	DF	TYPE III SS	Mean Square	*F*	*p > F*
Fair society	1	5.53	5.53	1.03	.31
Access to opportunities	1	88.70	88.70	16.49	<.0001
Leaders working for you	1	1.00	1.00	0.19	.67
Excellent health	1	983.42	983.42	182.79	<.0001
Satisfied with access to healthcare	1	71.58	71.58	13.21	.0003
Ethnicity	3	164.64	54.88	10.20	<.0001
Gender	1	1.85	1.85	0.34	.56
Education	3	38.38	12.79	2.38	.068
Family income	4	147.19	36.80	6.84	<.0001
Geography	4	10.49	2.62	0.49	.75
Fair society x Ethnicity	3	45.03	15.01	2.79	.039
Access to opportunities x Ethnicity	3	126.49	42.16	7,84	<.0001
Satisfied with healthcare access x Ethnicity	3	56.78	18.93	3.52	.01

All the community-level beliefs interact with ethnicity. For example, Whites differ from both Blacks and Latinos in beliefs about access to opportunities, living in a society that is fair and just, etc. These beliefs, in turn, moderate the health-related beliefs of the ethnic minorities (Figure 4).

Figure 4: Interactions, Community Beliefs and Ethnicity



Summary and Conclusion

Theory suggests that the health beliefs of professionals and laypersons alike are shaped by their cultural context. This paper explores whether the health beliefs of Whites differ from those of the ethnic-minority groups; microdata from the *Marist Poll: America Now Index August 2022* was used to gain insights into the issue. Of the 1,031 adult responses to the survey, respondents from the nonmetro and small towns accounted for 34% of the total.

Results of data analysis suggest that:

- ✓ White Americans tend to view illness at the intrapersonal level. In contrast, ethnic minorities think of illness as an interpersonal process.
- ✓ Specifically, community-level beliefs interact with ethnicity to determine health-related beliefs.

Cognitive representations of health are related to perceptions about happenings in the community and the association is stronger for ethnic minorities. This implies that illness is one's loss of personal control and treatment must address the patient's perceptions about interpersonal transgressions or misconduct.

Appendix 1: Measures and their Operational Definitions

Variable	Operational Definition	
Mpinx1navg10 (mpinx1na)	You feel you have access to the same opportunities as everyone else	0 = Strongly disagree 10 = Strongly agree
Mpinx1pavg10 (mpinx1oa)	You feel you live in a society that is fair and just	0 = Strongly disagree 10 = Strongly agree
Mpinx1mavg10 (mpinx1ma)	Those in leadership positions are working to make life better for people like you	0 = Strongly disagree 10 = Strongly agree
Mpinx1havg10 (mpinx1ha)	You are satisfied with your access to health care	0 = Strongly disagree 10 = Strongly agree
educwt	Education	0 Some College/Associates 1 College Degree 2 Graduate/Professional Degree 3 High School or Less 4 -Blanks-
gender	Gender	0 Men 1 Women
inc15	Is your combined family income before taxes	0 $100,000 OR MORE 1 $25,000-$49,999 2 $50,000-$74,999 3 $75,000-$99,999 4 $15,000-$24,999 5 Less $15,000
Mpinx1eavg10 (mpinx1ea)	You, yourself, are in excellent health	0 = Strongly disagree 10 = Strongly agree
racerecx	Race/Ethnicity	0 = White 2 = Black 3 = Latino 1 = Other
usrwt	area description	2 = A big city 3= a small city 0 = Suburban 1 = A small town 4 = Rural
mpinx1gavg10 (mpinx1ga)	There is little risk to your health right now	0 = Strongly disagree 10 = Strongly agree
mpinx1havg10 (mpinx1ha)	You are satisfied with your access to health care	0 = Strongly disagree 10 = Strongly agree