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## Examining the Health Literacy of Rural Latina Immigrant Mothers and Their Use of the Internet to Seek Health Information

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### Abstract

This study examined the health literacy of 98 Latina immigrant mothers in a rural area of a Midwestern state, their use of the Internet to seek health information, and the relationship between mothers' use of the Internet to seek health information and children's and mothers' health status. Health literacy is the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Parker & Ratzan, 2010). Poor health literacy is related to poor health choices, riskier behaviors, worse health, higher mortality, more hospitalizations, and higher health costs (World Health Communication Associates Ltd, 2011).

Latino immigrants are at high risk for poor health literacy in the United States due to low educational attainment, lack of knowledge of health topics, low English language fluency, and due to the culture and the specific characteristics of the U.S. health system. This includes the communication skills of health providers (Rudd, Kirsch, & Yamamoto, 2004). This study draws its sample from Rural Families Speak about Health (RFSH). Mothers were recruited using Respondent Driven Sampling (Heckathorn, 2002), a strategy for recruiting hard-to-reach populations and for whom sampling frames are not available.

During in-home interviews, mothers were asked a series of questions pertaining to their use of the Internet, their ability to understand information shared by health professionals, the health status of themselves and their children, and the demographics of their households.

Preliminary descriptive analysis of demographic data, correlations, cross tabs, and ANOVAs were conducted using the software SPSS v. 20. More than half (61.4%;  $n = 54$ ) of the mothers reported they accessed the Internet most often at home. However, only a little more than one third reported that they used the Internet to find information about their health (35.7%;  $n = 35$ ) or their children's health (37.8%;  $n = 37$ ). Mothers' use of the Internet to find information regarding health was not related to children's or mothers' health status.

*Keywords:* health literacy, Latino health, Latino mothers, Internet usage

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## Introduction

Health literacy has been defined as the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Parker & Ratzan, 2010). An individual's health literacy capacity and competence may be influenced by the communication skills of health providers and their knowledge of health topics, as well as the culture and the specific characteristics of the health systems and settings where people access and use health information (Healthy People, 2010). Health is compromised when health services or systems require knowledge or language fluency that is too high for the user (WHCA, 2011). Poor health literacy is related to poorer health choices, riskier behaviors, worse health, higher mortality, more hospitalizations, and higher health costs (WHCA, 2011).

Fifty-nine percent of all adults in the U.S. looked online for health information within the past year. Adults who are most likely to go online for health information include females, whites, those who are between the ages of 18 and 49, who have earned a college education, and who earn \$50,000 or more a year. When comparing rural to urban, Hale, Cotton, Drentea, and Goldner (2010) found that rural residents were 34% less likely to report health-related Internet use than urban residents. In regards to using cell phones to find health information, Fox and Duggan (2013) found that close to one third of adults who own a cell phone report that they use their phone to look up health information. Characteristics of adults who are most likely to use their cell phone to find health information are similar to those who go online for health information. However, Latinos and African Americans are more likely than whites to use their cell phone to find health information (Fox & Duggan, 2013). Little is known about Latino immigrants' use of the Internet to seek health information.

Over the past decade, the Hispanic population grew by 43% and accounted for more than half of the total growth of the U.S. population. In the Midwest, the Latino population grew by 49%

(Ennis, Ríos-Vargas, & Albert, 2011). This growth has dramatically shaped the face of rural America (Lichter, 2012). Few studies, however, have examined the state of health literacy among Latinos living in rural America and its relation to the health of their children and their Internet behavior.

Latino immigrants are at high risk for poor health literacy due to low educational attainment, lack of knowledge of health topics, low English language fluency, and the culture and specific characteristics of the U.S. health system, including the communication skills of health providers (Rudd, Kirsch, & Yamamoto, 2004). This study examined health literacy among Latina immigrant mothers who lived in a rural area of the Midwest, their use of the Internet to seek health information, and the relationship between mothers' use of the Internet to seek health information and children's and mothers' health status. It was hypothesized that health literacy and Internet use variables would predict child health status.

## Theoretical Framework

Human capital theory, which posits individuals and society benefit economically from investments in people, can frame issues of health status and health literacy. First, the health status or health capital of an individual is considered "durable capital stock" (Grossman, 1972, p. 223) and adds to human capital. Investments in health benefit human capital (Sweetland, 1996). Second, health literacy describes individual capacities such as reading ability, vocabulary, and comprehension that act as mediating factors in health by providing greater empowerment in decision making and promoting health competency. Health literacy may be viewed as an asset to build in individuals. Increasing health literacy in Latino immigrant families will enable them to make better-informed health decisions and to engage in healthy behaviors, thereby improving their health status, thus enhancing human capital (Mammen, Bauer, & Lass, 2009).

## Methods and Analysis

### Participant Recruitment

The 98 Latina immigrant mothers who participated in this study were part of a larger study, *Rural Families Speak about Health* (RFSH), a multistate study examining the health of rural families with young children. In order to participate in RFSH, mothers had to be 18 years of age or older, have a child age 12 or younger, have a household income at or below 185% of the federal poverty level, and live in one of the identified study communities designated as an urban influence code (UIC) of 6 or higher (Economic Research Service (ERS), 2013). A UIC of 6 designates a county as “noncore adjacent to small metro area and contains a town of at least 2,500 residents,” and a UIC of 12 designates a county as “noncore adjacent to metro or micro area and does not contain a town of at least 2,500 residents” (ERS, 2013).

Mothers were recruited with Respondent Driven Sampling (RDS) (Heckathorn, 2002), a strategy for recruiting hard to reach populations and for whom sampling frames are not available. RDS recruits participants from a social network of existing members of the sample. Three initial seeds (mothers) who met the participant selection criteria and who were well connected in their communities were identified by local professionals who were employed by family-serving agencies. Each seed completed a 1.5- to 2-hour in-person interview. They were then provided three coupons (each containing an ID number) to distribute to mothers in their own networks who they believed met the study criteria. Mothers receiving a coupon made the decision of whether or not to call the phone number listed on the coupon to complete the screening process. Once a mother completed the screening process and was determined eligible to participate in the study, an in-person interview was scheduled to collect additional data. After she completed the in-person interview, she was provided three coupons to distribute to mothers within her own network. Mothers were offered a \$50 gift card for participation in the in-person interview.

## Data Collection

Through the use of a computer-assisted interview script, mothers were asked if they used the Internet to find information about their child’s health and their own health, as well as a series of questions pertaining to understanding information they received from health professionals (i.e., did they receive written health information in the language they preferred, did they have difficulty understanding what their doctor was telling them, how often did they need someone to help when reading information from their doctor, pharmacy, or insurance company). Mothers were also asked to rate their health and their child’s health (i.e., *In general, would you say your/ your child’s health is . . .*) on a Likert scale ranging from 1 to 5 (1=excellent, 2=very good, 3=good, 4=fair, 5=poor) (National Health Interview Survey, 2013).

### Analysis

To prepare the variables for analysis, ratings of mother’s health and child’s health were reverse coded so higher scores indicated a higher level of health and are referred to as the “health status” variables. The questions about written health information in the preferred language, difficulty understanding the doctor, using the Internet to access health information for oneself, and using the Internet to access health information about one’s child were dummy coded (1 = yes, 0 = no). Descriptive analysis of demographic data and correlations were conducted using the software SPSS v. 20.

## Results

### Demographics

The average age of the mothers was 33 years old, and the average age of a randomly selected focal child in each household was 6. The median household income mothers reported was between \$25,000 and \$29,999. More than half (56.1%;  $n = 55$ ) of the mothers were married and a little more than one

fourth (27.5%;  $n = 27$ ) lived with a partner. Less than one third of the mothers (31.6%;  $n = 31$ ) reported their educational level as eighth grade or lower, and less than one third (31.6%;  $n = 31$ ) reported having earned a high school diploma or GED. About one fifth of the mothers (19.3%;  $n = 19$ ) reported some form of postsecondary education or training. Table 1 contains demographic information for the mothers and children in this study.

### Internet Access

Almost all of the mothers reported that they had access to the Internet (89.8%,  $n = 88$ ). More than half of the mothers (61.4%;  $n = 54$ ) reported they accessed the Internet most often at home. However,

only a little more than one third reported that they used the Internet to find information related to their health (35.7%;  $n = 35$ ) or to their children’s health (37.8%;  $n = 37$ ). Mothers’ use of the Internet to find information regarding health was not related to the health status of the children or mothers.

### Understanding Information from Health Professionals

While the majority of mothers (77.6%;  $n = 76$ ) received printed information about their medical care in a language they preferred, they had difficulty understanding the information. Mothers commonly (63.9%;  $n = 62$ ) needed someone to help them read instructions, pamphlets, or other written health-re-

**Table 1.** Demographic Characteristics of Mothers and Focal Children.

Variable	N	%	M	SD
<i>Family Structure</i>				
Single	5	5.1		
Single (widowed or divorced)	7	7.1		
Married	55	56.1		
Living with partner	27	27.5		
Other	4	4.1		
Mother’s age			33.29	8.46
Annual Household Income (median)*			\$25,000-\$29,999*	
<i>Mother’s education level</i>				
8 <sup>th</sup> grade or less	31	31.6		
Some high school	17	17.3		
High school / GED	31	31.6		
Post high school education	19	19.3		
<i>Child’s Gender</i>				
Female	45	45.9		
Male	53	54.1		
Child’s age			6	3.5

lated materials. Furthermore, mothers reported difficulties understanding what their doctors were saying as most doctors did not speak Spanish, and an interpreter was not always available. Even when medical terms were translated into Spanish, some mothers did not understand them.

### Relationships Between Health Literacy and Health Status

Correlations among the health literacy variables and health status variables are found in Table 2. Several correlations were statistically significant. Use of the Internet by mothers to find health information about their children was associated with using the Internet to find health information about themselves,

$r(96) = .83, p < .001$ . The health status of the mother was associated with the health status of the child,  $r(96) = .27, p < .001$ . Having health information in the preferred language was negatively associated with needing help reading health information,  $r(96) = -.29, p < .001$ . Having access to the Internet at home was associated with use of the Internet by mothers to find health information about their children,  $r(96) = .32, p < .001$ , as well as about themselves,  $r(96) = .37, p < .001$ .

### Discussion

Although having health information in the preferred language was associated with a decreased need for help with reading health information, it did

**Table 2.** Correlations between health status and health literacy variables.

	Need help reading medical material	Use internet to find health information (child)	Use Internet to find health information (self)	Health status (child)	Health status (mother)	Health information in preferred language	Internet access (1 = at home)
Need help reading medical material	1						
Use internet to find health information (child)	.04	1					
Use Internet to find health information (self)	.07	.83**	1				
Health status (child)	.13	.09	.07	1			
Health status (mother)	-.12	-.03	-.06	.27**	1		
Health information in preferred language	-.29**	.12	.10	.011	.02	1	
Internet access (1 = at home)	.03	.32**	.37**	-.02	.003	-.04	1

Note. \*\*  $p < 0.01$  (2-tailed).

not necessarily equate to the mothers understanding the information. Translation of printed health materials or Web pages into Spanish is not enough to ensure that Latino immigrant families understand health-related information. Health and family-serving professionals need to take specific measures to ensure health information is easily understood and culturally sensitive. Additional research is needed to explore the preferences of Latino immigrants for receiving health information and to determine the effectiveness of structure and design of health materials in prompting families to take specific actions to maintain or improve their health. Involving bilingual and bicultural Latino immigrant adults in evaluating and developing health information should be explored. Although using the Internet to find health information was not associated with health status, having Internet access at home was associated with using the Internet to seek health information. More research is needed to determine specific types of health information Latina immigrant mothers seek online, their motivations for seeking health information online, how well they understand and can apply the information they find, as well as the quality of the information they access. Expanding this study to include a larger number of Latino immigrants living in rural America is warranted.

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