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Fatalism and cancer risk knowledge among a sample of highly-acculturated Latinas

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Abstract

Fatalistic beliefs about cancer are associated with decreased likelihood of knowing about cancer risk factors and engaging in cancer prevention and screening behaviors. Research suggests that Latinas are especially likely to hold fatalistic beliefs. However, this research has been in less-acculturated, high-poverty convenience samples. This study examined cancer knowledge, cancer fatalism, and the association between fatalism and knowledge in a national sample of highly-acculturated, middle-income Latinas (N=715). Results indicate that cancer fatalism is pervasive, and knowledge about cancer risk factors is lacking among this population. Fatalistic beliefs are paradoxically associated with cancer knowledge. Opportunities for tailored communications to improve health behaviors and additional research to understand causes/effects of these findings is discussed in the context of a growing body of research about how to communicate health information to more-acculturated Latinos.

Keywords

cancer fatalism; Latino; Hispanic; acculturation; health communication; cancer prevention

Cancer fatalism is the perception that developing cancer is outside of one's control and that death is the inevitable result of a diagnosis (Shen, Condit, & Wright, 2009). Fatalistic beliefs are important targets for health education because they have been associated with behavior and behavioral determinants (Ramírez, Rutten, Vanderpool, Moser, & Hesse, 2013). Fatalism is negatively associated with healthy behaviors, including physical activity, not smoking, and fruit and vegetable consumption (Niederdeppe & Levy, 2007) and cancer screening (Espinosa de Los Monteros & Gallo, 2011). Studies suggest that Latinos have stronger fatalistic attitudes about cancer than do non-Latino Whites (cf., Perez-Stable, Sabogal, Otero-Sabogal, Hiatt, & McPhee, 1992). However, most previous studies have limited generalizability because they have been based on convenience samples, usually low-income immigrants with little education (Powe & Finnie, 2003). Studies with national samples have found that fatalism is high among low-socioeconomic status populations but have either failed to find consistent differences by race/ethnicity (Niederdeppe & Levy, 2007), or, in a study in the United Kingdom, did not examine ethnicity-based differences (Beeken, Simon, von Wagner, Whitaker & Wardle, 2011). More recently, Ramírez and

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colleagues demonstrated that fatalistic beliefs are prevalent across the U.S. population and that ethnic minority groups were more likely than non-Hispanic Whites to believe that "cancer is not preventable" (Ramírez, Rutten, Oh, Leyva Vengoechea, et al., 2013). However, those conclusions were based on a national sample that included relatively small samples of Latinos overall and no strategy for sampling Latinos across acculturation level. The present study seeks to extend that research with a unique national sample of highly-acculturated Latinas.

Acculturation – the process of integrating into a mainstream culture (Abraído-Lanza, Armbrister, Flórez, & Aguirre, 2006) – is an important source of diversity within the U.S. Latino population, and one that is particularly relevant when considering education and communication to this population (Marín, 1989). There are various conceptualizations of acculturation; however, most include some level of comfort with the mainstream language (cf., Karas Montez & Eschbach, 2008; Cruz, Marshall, Bowling & Vallaveces, 2008). In the U.S. Latino context, those who are more comfortable speaking/writing/engaging with media in English may be considered more acculturated than those who are more comfortable with the Spanish language (Berry, 2003). For this reason, it has been argued that traditional health education efforts targeting Latinos, which have been executed in Spanish, have excluded more-acculturated Latinos (Ramírez, 2013). It is also important to consider more-acculturated Latinos because research suggests they are at increased risk of engaging in cancer risk behaviors (Abraído-Lanza, Chao, & Flórez, 2005; Amaro & de la Torre, 2002; Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005). Education to improve health outcomes among Latinos must be informed by an understanding of how fatalistic beliefs interact with acculturation to affect exposure and attention to information and ultimately, behaviors.

Acculturation is an important potential modifier of cancer fatalism: If fatalism is a cultural characteristic, then as groups acculturate to the mainstream, they may shed such beliefs. The loss of such beliefs in effect constitutes evidence for acculturation. If this is the case, then fatalism becomes less important to consider when considering education and behavior change strategies for highly-acculturated Latinos. However, it is also possible that Latinos may appear to be acculturated on some measures (e.g., language ability and preference), while retaining important cultural beliefs or traits. Because most studies examining fatalistic beliefs among Latinos have failed to consider the full spectrum of acculturation, we do not know the extent of fatalistic beliefs among more-acculturated Latinos. This descriptive study expands previous research by using a unique national sample of highly-acculturated Latinas to examine the following research questions:

RQ1: How likely are highly-acculturated Latinas to hold fatalistic beliefs about cancer?

RQ2: What do highly-acculturated Latinas know about cancer risk factors?

RQ3: Is fatalism associated with knowledge about cancer risk factors among highly-acculturated Latinas?

Sample and Procedure

Participants were drawn from a national opt-in online panel maintained by Survey Sampling International (SSI). Eligibility criteria included: sex (female only), ethnicity (Latina, of any race; or non-Latina White; however, only Latinas are included in the present analysis), and age (29-49). There is no defined sampling frame for “highly-acculturated Latinas,” so it is not possible to conduct a truly random sample nor to claim that this sample is representative of the US population for highly-acculturated Latinas. However, the procedure provides access to a wider range of respondents than might be found with other convenience sampling approaches, improving generalizability of findings. Given administration of the study in English, less-acculturated Latinas were intentionally excluded. Additional proxy measures of acculturation are reported. Additionally, portions of the study not reported herein were focused on screening behaviors and behavioral intentions for cancer screening modalities that are most relevant for women between the ages of 29 and 49. The final analyzed sample included a total of 715 highly-acculturated Latinas. The study was administered online in February 2009 and took an average of 19 minutes to complete.

Measures

Measures were adapted from the National Cancer Institute's Health Information National Trends Survey (Nelson, Kreps, Hesse, Croyle, Willis & Arora, 2004).

Acculturation

Acculturation was defined *a priori* as having the ability and willingness to complete a survey in English (Ramírez, 2013; Vanderpool et al., 2009; Clayman, Manganello, Viswanath, Hesse, & Arora, 2010). Additional proxy indicators of acculturation also were collected to validate the acculturation status of the sample. Respondents were asked their own, parents', and grandparents' country of birth. These responses were merged: first-generation respondents were those born outside of the mainland United States (including Puerto Rico); second-generation respondents were born in the United States to one or both parents who were born outside of the United States; third-generation and higher were US-born respondents whose parents and grandparents were born in the United States. Country of origin was dichotomized to Mexico versus other; respondents who had more than one Latin American country of origin were included in the “Other” category.

Knowledge about recommendations for physical activity for health

Knowledge of physical activity recommendations was assessed: 1) “How many days a week of physical activity or exercise are recommended for the average adult to stay healthy?, and 2) “On those days, how long should the average adult be physically active to stay healthy?” Responses were open-ended, and a dichotomous variable indicated correct knowledge (=1) of the moderate-intensity of physical activity recommendation, defined according to Centers for Disease Control and Prevention (CDC) recommendations at the time of data collection (at least 30 minutes, 5-7 days per week) (Haskell, Lee, Pate, et al., 2009). All other responses were coded incorrect (=0).

Knowledge about recommendations for fruit and vegetable consumption for health

Knowledge about fruit and vegetable recommendations was assessed by the following question, “What is the recommended combined number of servings of fruits and vegetables individuals should eat per day?” Five response options were provided: 5, 7, 10, “It depends on your height and weight,” and “I don't know.” Responses were recoded into a dichotomous variable to reflect federal guidelines (Krebs-Smith & Kantor, 2001) at the time of data collection (5 or more servings of fruits and vegetables per day) such that: the numerical responses (5,7,10) were coded as correct (=1) and other responses were incorrect (=0).

Knowledge about HPV as a cause of cervical cancer

All respondents were asked: “Have you ever heard of HPV? HPV stands for Human Papillomavirus. It is not HIV, HSV, or herpes.” Respondents who answered “yes” were then asked: “Do you think HPV can cause cervical cancer?” Responses were dichotomized: “no” and “don't know” (=0) versus “yes” (=1).

Beliefs about cancer causes and preventability

Respondents were asked about agreement with three beliefs: “It seems like everything causes cancer.”; “There's not much you can do to lower your chances of getting cancer.”; and “There are so many different recommendations about preventing cancer, it's hard to know which ones to follow.” Response options for these questions were: “strongly agree,” “somewhat agree,” “somewhat disagree,” “strongly disagree,” and “don't know.” “Don't know” responses were dropped and the strongly/somewhat responses were combined for each item, resulting in four unique dichotomous variables indicating agreement/ disagreement.

Sociodemographics

In addition to the acculturation-related demographics above, age (categorized: 29-34, 35-39, 40-44, 45-49) and education (categorized: less than high school, high school graduate, some college, college graduate) were assessed.

Analysis—Multivariable logistic regression using Stata 10 examined current knowledge about three cancer preventive behaviors and risk factors. Each knowledge outcome was regressed on sociodemographic covariates, including age, education, country of origin, generation, and three fatalism beliefs.

Results

Sample Characteristics and Univariate Distributions

The sample, by design, included only highly-acculturated Latinas, and this is reflected in the proportions of immigrants and native-born Latinas: 27.6% were first-generation Americans (i.e., emigrated from a Latin American country), 37.3% second-generation, 35.1% third-generation or higher (Table 1). Just under half (43%) were of Mexican origin.

To what extent do highly-acculturated Latinas hold fatalistic beliefs about cancer? (RQ 1)

Fatalistic beliefs are prevalent among highly-acculturated Latinas: One in five agreed with the statement, “There's not much you can do to lower your chances of getting cancer.” (Table 1). More than two-thirds of this sample of highly-acculturated Latinas agreed or strongly agreed with each of the other beliefs.

What do highly-acculturated Latinas know about cancer risk factors? (RQ 2)

Knowledge of three cancer risk factors and prevention behaviors varied from 46.3% for weekly exercise recommendations to 71.3% for daily fruit and vegetable guidelines (Table 1). Two-thirds of the sample correctly answered that HPV causes cervical cancer. Knowledge of cancer prevention behaviors and risk factors varied by education and for one outcome, by age and generation in the United States. Having more than a high school education was associated with at least a three-fold increase in odds of having correct knowledge of three cancer risk factors (Table 2). Being a second-generation or higher Latina also increased likelihood of knowing that HPV causes cancer, while being older than 44 decreased the likelihood of knowing that HPV causes cancer.

Is fatalism associated with knowledge about cancer risk factors? (RQ 3)

Fatalistic beliefs about cancer were associated to varying degrees with the three cancer risk factor and behavior outcomes. Believing that “everything causes cancer” was associated with increased odds of knowing the current guidelines for physical activity, compared with not holding that belief (OR=1.47 [95%CI: 1.00,2.16], Table 2). Respondents who agreed that “there are too many recommendations about how to prevent cancer” had half the odds of knowing that HPV causes cervical cancer (OR=0.45 [95%CI:0.29,0.74]).

Discussion

This study used a unique national dataset to examine the extent to which highly-acculturated Latinas hold fatalistic beliefs, and considered factors associated with knowledge about cancer prevention behaviors and risk factors. This study expands current understanding of how fatalistic beliefs held by highly-acculturated Latinas are associated with knowledge about cancer risk factors and knowledge of recommendations for cancer prevention. Consistent with previous studies that have examined fatalism among racial/ethnic minorities and less-acculturated/immigrant Latinas, this study provides unique evidence that fatalistic beliefs are held by many Latinas who can be considered highly-acculturated, especially manifest as a belief that individuals cannot reduce their cancer risk.

What does it mean that fatalistic attitudes traditionally ascribed to culture (i.e., Latino ethnicity) are in fact retained as the ethnic group appears to integrate into the mainstream culture (i.e., through assimilating the language of the mainstream)? Are these results indicative of some essential cultural trait, or do they reflect some external factor(s)?: Fatalism may be considered a logical response in the face of an honest appraisal of economic and social disparities (Powe & Johnson, 1995). Latinos, including the more-acculturated, fare worse than non-Hispanic Whites on a variety of health determinants

(Abraído-Lanza, Chao, & Flórez, 2005), so it may be that fatalism is a realistic appraisal of their circumstances.

Another potential interpretation follows recent research suggesting that the construct that has been conceptualized broadly as "cancer fatalism" is actually three distinct constructs, characterized as fatalism about cancer prevention, fatalism about cancer treatment, and cancer information overload (Jensen et al., under review)[1]. The last is conceptually different from the first two in that it is not a trait but rather a reflection of the information environment, a feeling cultivated by exposure to information about cancer from the media, friends /family members, and healthcare providers. Information overload may help to explain the positive relationship between fatalistic beliefs and risk knowledge observed in this cross-sectional study: The more individuals learn about risk factors, the more they are confused (cf., Nagler, 2013; Han, Moser, Klein, Beckjord, et al., 2009). Two of the fatalism items tested in the present study ("It seems like almost everything causes cancer" and "There are so many recommendations…") may be capturing that information overload sentiment. Interestingly, although more than one-quarter of this sample's respondents agreed with these statements, over three-quarters of them agreed with what might be considered fatalism about cancer prevention, "There's not much you can do to lower your chances of getting cancer." This pattern of results suggests that more-acculturated Latinas – who are English-dominant – are failing to get important health information, including information about cancer prevention. This may be explained by media exposures (cf. Han, et al., 2009) and attention to mediated information (cf. Ramirez, 2013). On the other hand, in this case, that lack of information overload may be a protective factor (to the extent that this population is not inundated with health information that may produce unintended negative consequences such as confusion), and suggests that caution is warranted when considering how to improve cancer education efforts among this population: More may not be better.

Limitations

This study examined fatalism, an important potential target for cancer education among an understudied, at-risk population, and provided some intriguing preliminary results; however, interpretation is limited by several factors. First, the data are cross-sectional, which precludes claims about the causal order. It is possible that lack of knowledge about cancer risk factors contributes to fatalistic beliefs about cancer. Additionally, the sample was not technically random. However, it is a unique, diverse, national sample of a group that cannot be enumerated in a sampling frame and yet needs to be considered in health communication. Finally, the high rates of knowledge that HPV causes cervical cancer may be an artifact of the data collection period: Following the commercial launch of the first HPV vaccine, the significant investment in advertising and marketing of the vaccine that may have increased knowledge for the short-term.

Implications for survey research

This study was unique in its recruitment strategy and ability to recruit a large sample size of highly-acculturated Latinas. Although it is not possible to enumerate this population, various

[1]Thanks to an anonymous reviewer for the International Communication Association meeting for this point.

indicators of acculturation measured in this sample suggest that the sample represented a diverse segment of the U.S. Latina population that can be considered more acculturated. This is an important point because national samples fail to consider acculturation as an important potential confounder or covariate, and many national samples contain an insufficient sample of this population, limiting the potential interpretation of any results and applicability to health education efforts. Although this is a preliminary study, findings suggest that increased attention to sampling this population is warranted: Prevalence estimates for common measures of cancer risk factor knowledge and fatalism are different in this sample compared with the Health Information National Trends Survey (HINTS), from which the measures were adopted. For example, in the present study, 68.8% of highly-acculturated Latinas agreed that "It seems like almost everything causes cancer," while just 42.9% of Latinas who responded in English to HINTS 2008 did so. Similar differences in prevalence estimates were observed for cancer risk factor knowledge, and these may be related to the survey administration method as well (phone versus internet). This study identifies the need for and suggests avenues for methodological research to improve sampling and ensure representativeness of the more-acculturated Latina population.

Implications for health education

This study identified a need for education to improve knowledge of cancer risk factors among highly-acculturated Latinas, and also suggests that fatalistic beliefs may be a specific educational target for those Latinas who retain some fatalistic beliefs even as they appear acculturated on traditional measures of acculturation (e.g., English-language preference). For health education and communications practitioners, knowing that some fatalistic beliefs continue to be relevant for this population is useful information for understanding how to do "cultural" or "ethnicity-based" tailoring beyond the surface level. Further research could test messages that have been tailored on ethnicity at the surface level (e.g., the actors and setting) and further tailor on the message factors relating to fatalism (cf., Kreuter, Lukwago, Bucholtz et al., 2003). Another avenue for further research would be to compare fatalistic beliefs held by highly-acculturated Latinas, less-acculturated Latinas, and non-Hispanic White women.

This study contributes to the relatively sparse literature on Latina cancer disparities, and provides some suggestions for improving education and communication among this population as a strategy for reducing these disparities.

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Table 1

Sample characteristics (N=715)

	Percentage	*N*
Female	100.0	*715*
Generation in U.S.		
1st Generation (Born in Latin America)	27.6	*193*
2nd Generation (Born in U.S. to foreign-born parents)	37.3	*261*
3rd Generation (Born in U.S. to U.S.-born parents)	35.1	*245*
Mexican heritage	43.0	*286*
Age		
29-34	31.1	*222*
35-39	25.6	*183*
40-44	23.5	*168*
45-49	19.9	*142*
Education		
Less than high school	4.8	*34*
High school diploma or G.E.D.	28.9	*207*
Some college, associate degree or technical school	42.9	*307*
College degree (4 year degree or higher)	23.4	*267*
Knowledge about cancer risk factors (incorrect=0/correct=1):		
Weekly exercise recommendations for health (≥30 min/day/≥5days)	46.3	*284*
Daily fruit and vegetable guidelines (≥5/day)	71.3	*510*
HPV causes cervical cancer	65.7	*470*
Fatalistic Beliefs (% agree or strongly agree with)		
“It seems like almost everything causes cancer.”	68.8	*467*
“There's not much you can do to lower your chances of getting cancer.”	21.4	*134*
“There are so many recommendations about preventing cancer that it's hard to know which ones to follow.”	71.7	*488*

Table 2
Correlates of accurate knowledge about cancer risk factors

	Correct Knowledge		
	Physical Activity	**Fruit & Vegetable**	**HPV Causes Cancer**
	N=563	**N=658**	**N=658**
	OR (95% CI)	**OR (95% CI)**	**OR (95% CI)**
Country of origin			
Other Latin American country (reference)	1.00	1.00	1.00
Mexico	0.98 (0.69, 1.37)	**1.66**** (1.14,2.41)	0.91 (0.65,1.28)
Generation in U.S.			
1st Generation (Born in Latin America)	1.00	1.00	1.00
2nd Generation (Born in U.S. to foreign-born parents)	1.09 (0.71,1.67)	1.47† (0.95,2.29)	**1.69*** (1.11,2.56)
3rd Generation (Born in U.S. to U.S.-born parents)	0.94 (0.61, 1.46)	1.83 (1.17,2.87)	1.50 (0.99,2.28)
Age			
29-34	1.00	1.00	1.00
35-39	0.99 (0.64, 1.56)	1.44 (0.89,2.32)	0.76 (0.49,1.18)
40-44	1.25 (0.79,1.98)	1.36 (0.83,2.23)	0.75 (0.47,1.17)
45-49	1.09 (0.67,1.78)	0.67 (0.42,1.10)	**0.52**** (0.32,0.83)
Education			
Less than high school	1.00	1.00	1.00
High school diploma or G.E.D.	2.84† (0.99,8.17)	2.03† (0.92,4.48)	**2.22*** (1.01,4.90)
Some college, associate degree or technical school	2.75† (0.97,7.78)	**4.07***** (1.85,8.93)	**2.93**** (1.35,6.38)
College degree (4 year degree or higher)	**3.06*** (1.05,8.89)	**4.63***** (2.00,10.69)	**3.22**** (1.42,7.27)
Fatalistic Beliefs *(agree/strongly agree=1; disagree/strongly disagree=0)*			
"It seems like almost everything causes cancer."	**1.47*** (1.00,2.16)	0.98 (0.66,1.46)	0.78 (0.53,1.13)
"There's not much you can do to lower your chances of getting cancer."	1.21 (0.78,1.87)	0.81 (0.53,1.26)	**0.45***** (0.29,0.74)
"There are so many recommendations about preventing cancer that it's hard to know which ones to follow."	0.91 (0.62,1.34)	0.69† (0.45,1.07)	0.77 (0.53,1.13)

† $p < 0.10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$.