



Disparities in Cancer Screening: Fatalistic Cultural Beliefs and Screening Emotions

Sarah Ormseth, BA¹, Patricia Flynn, PhD, MPH¹, & Hector Betancourt, PhD^{1,2}

¹Loma Linda University; ²Universidad de La Frontera, Chile

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ABSTRACT

BACKGROUND: Disparities in breast cancer screening behaviors between Latin American (Latino) and non-Latino White (Anglo) women in the U.S. have increased over the last decade. Research in this area has identified social-structural factors responsible for the noted ethnic disparities such as income and education. Less clear however is the influence of underlying factors that may account IN PART for the observed ethnic disparities. According to Betancourt's model for the study of culture adapted for health behavior (Betancourt & Flynn, 2009), aspects of culture such as beliefs and related psychological processes are more proximal determinants of health behavior than are population categories that serve as sources of cultural variation. Research has found that cultural beliefs such as fatalism are associated with cancer screening. Research also suggests that emotions play an important role in cancer screening behaviors and their relation to health behaviors may change across ethnic groups. The purpose of this research is to examine the role of fatalistic cultural beliefs and screening-related emotions that may IN PART account for disparities in clinical breast examination (CBE) between Latino and Anglo women. **METHOD:** A total of 281 women (144 Latino, 137 Anglo) completed a questionnaire in either English or Spanish. EQS 6.1 was used to test a model including the role of population categories (age, education, income), culture (fatalistic beliefs), psychological processes (screening-emotions), and health behavior (CBE compliance) for Latino and Anglo women respectively. Multigroup structural equation modeling was then performed to test for potential differences in the magnitude of relations among the model variables based on ethnicity. **RESULTS:** Structural equation modeling revealed an excellent fit of the data for Latino and Anglo women. As predicted, fatalistic beliefs exerted a direct and negative influence on CBE compliance for both ethnic groups. However, the hypothesized indirect influence of cultural beliefs on CBE compliance through screening-emotions was only true for Latino women. To this end, fatalistic beliefs predicted higher levels of screening-emotions and screening-emotions negatively impacted CBE compliance among Latino women. Ethnicity was found to moderate the impact of fatalistic beliefs on screening emotions. Furthermore, for Latinos lower education and income influenced higher levels of fatalistic cultural beliefs. For Anglos lower education, income, and greater age was found to influence higher levels of FATALISTIC beliefs. **CONCLUSIONS:** Findings from this research provide important information regarding the differential pathways under which disparities in breast cancer screening may transpire for Latino and Anglo women from various age and socio-economic backgrounds. These findings have important implications for the development of interventions for Latino and Anglo women respectively.

HYPOTHESES

- Higher levels of fatalistic cultural beliefs will negatively influence CBE compliance for both Latino and Anglo women, directly and/or through screening-emotions.
- Education, income, and age will account for variance in fatalistic cultural beliefs.
- The influence of fatalistic cultural beliefs and screening-emotions on CBE compliance will be moderated by ethnicity.

METHODS

Participants

281 cancer-free women (144 Latino, 137 Anglo) between 18 and 85 years of age were recruited from diverse settings such as churches, health clinics, mobile home parks, and community settings in Southern California. Participants were compensated \$20 for their time.

Measures

Ethnicity

Participants self-identified as either Latino or Anglo.

Socioeconomic Status (SES)

Education was defined as number of years of education.

Income was based on five categories: <\$15,000, \$15,000-24,999, \$25,000-39,999, \$40,000-59,999, and \$60,000+ annually.

Cancer Screening Fatalism

Assessed using three items from the cancer screening fatalism subscale of the Cultural Cancer Screening Scale (Betancourt, Flynn, Riggs, & Garberoglio, 2010).

Items were based on a 7-point Likert scale.

The reliability was adequate (Latino $\alpha=.782$; Anglo $\alpha=.814$).

Negative Screening-Emotions

Three items assessed the extent to which women experienced fear, anxiety, and embarrassment when thinking about having a CBE. Items were based on a 7-point Likert scale.

Reliability was strong for Latinos ($\alpha=.927$) and Anglos ($\alpha=.836$).

CBE Compliance

Calculated for each participant as a proportion based on the total number of CBE tests reported, divided by the maximum number that a woman of her age should have if they were fully compliant with screening guidelines (minimum screening compliance = 0; maximum compliance = 1.0).

Covariates

Additional information was obtained regarding participants' insurance status, access to a healthcare clinic, country of birth, survey language, cancer diagnosis, and acquaintance with anyone diagnosed with breast cancer.

Statistical Analyses

Structural equation models were assessed using EQS 6.1.

Adequacy of fit was assessed with χ^2 fit statistic, χ^2/df , CFI, and RMSEA. Data screening revealed a violation of multivariate normality for both ethnic groups. Therefore, the ML Robust test statistics, which corrects for non-normal data, are reported.

Tests of Invariance Across Ethnicity

Configural invariance was determined by testing if the number of factors and the loading pattern were similar across groups.

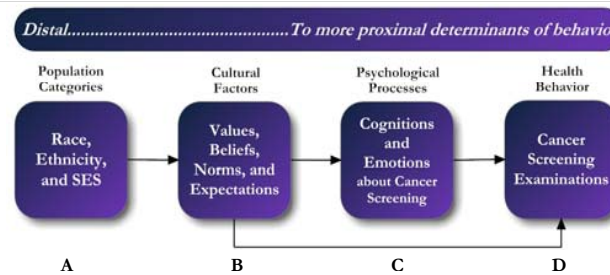
To test measurement invariance, equality constraints were imposed on factor loadings.

To test structural invariance, equality constraints were imposed on structural paths.

If the constrained structural model showed a decrement in fit (sig. $\Delta\chi^2$ or $\Delta CFI \geq .01$) the LM Test of equality constraints was examined. Constraints were considered noninvariant and released if doing so dramatically improved the model fit.

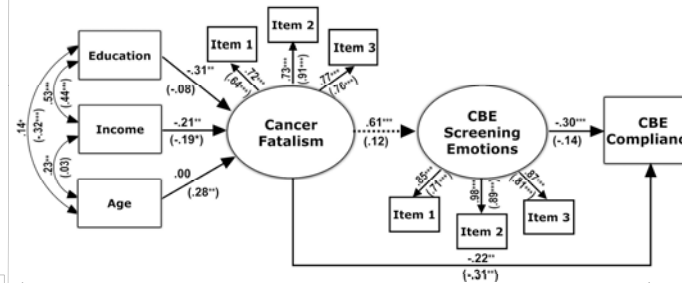
In addition, MacKinnon's procedures for contrasting indirect effects were employed.

BETANCOURT'S MODEL OF CULTURE AND BEHAVIOR



According to the Model for the Study of Culture and Behavior, aspects of culture (B) are expected to influence screening (D) directly and/or indirectly through psychological processes (C).

FINAL MODEL FOR LATINO (ANGLO) SUBGROUPS



TESTS OF INVARIANCE ACROSS ETHNICITY

Model	S-B χ^2	df	CFI*	RMSEA*	Δ S-B χ^2 ^a	p	Δ df	Δ CFI*
Model 1 Configural No constraints	56.28	59	1.00	<.001	—	—	—	—
Model 2 Measurement Model (factor loadings constrained across ethnicity)	59.91	63	1.00	<.001	3.68	.451	4	.00
Model 3 Structural Model (constrained factor loadings and 6 structural paths)	72.69	69	.965	.014	15.65	.110	10	-.04
Model 4 Structural Model (constrained factor loadings and 5 structural paths, released Fatalism \rightarrow Screening Emotions)	67.56	68	1.00	<.001	10.97	.278	9	.00

S-B χ^2 = Satorra-Bentler Scaled Statistic; *CFI = Robust CFI; *RMSEA = Robust Root Mean Square Error of Approximation; ^aCorrected value.

Indirect effect of fatalistic beliefs on CBE compliance through screening-emotions ($\tau = 2.00, p = .046$)

DEMOGRAPHIC CHARACTERISTICS

Variable	Latino	Anglo
	n (%)	n (%)
Income		
<\$14,999	49 (34.03)	28 (20.44)
\$15-24,999	30 (20.83)	17 (12.41)
\$25-39,999	19 (13.19)	24 (17.52)
\$40-59,999	25 (17.36)	21 (15.33)
> \$60,000	21 (14.58)	47 (34.31)
Marital Status		
Single	27 (18.75)	25 (18.25)
Married	81 (56.25)	74 (54.02)
Divorced	23 (15.97)	24 (17.52)
Widowed	7 (4.86)	11 (8.03)
Not specified	6 (4.17)	3 (2.19)
Spanish survey language *	63 (43.75)	0 (0.00)
Health insurance coverage*	107 (74.31)	117 (85.40)
Access to healthcare clinic	118 (81.94)	124 (90.51)
Ever diagnosed with cancer	8 (5.56)	16 (11.68)
Ever known someone with breast cancer*	90 (62.50)	109 (79.56)
	M (SD)	M (SD)
Education*	11.28 (4.01)	14.49 (2.75)
Age in years*	42.49 (12.03)	47.20 (15.97)

SUMMARY and IMPLICATIONS

Consistent with the model for the study of culture, fatalistic cultural beliefs exerted a direct and negative impact on breast cancer screening compliance for both Latino and Anglo women.

Ethnicity was found to moderate the indirect effect of fatalistic beliefs on CBE compliance through screening-emotions

- For Latino women, higher levels of fatalistic beliefs influenced higher levels of screening-emotions, which in turn influenced lower CBE compliance.

These results confirm the importance of employing statistical techniques that take into account the role of ethnicity such as multi-group SEM.

These results have important implications for the development of 'targeted' interventions to promote cancer screening for Latino and Anglo women.

- Interventions 'targeted' for Anglo women may benefit from addressing fatalistic beliefs about breast cancer screening.
- Interventions 'targeted' for Latino women may benefit from addressing women's fatalistic beliefs as well as the influence of fatalistic beliefs on screening emotions.

Health professionals that develop 'tailored' interventions with INDIVIDUALS OF Latino, Anglo OR ANY OTHER ETHNIC BACKGROUND should take into consideration