Latino Ethnicity, Immigrant Status, and Preference for End-of-Life Cancer Care

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Abstract

Background: Little is known about how immigration status influences preference for life-extending care (LEC) at the end of life (EoL).

Objective: The purpose was to determine how preference for LEC at the EoL for advanced cancer patients varied by Latino ethnicity and immigrant status, and over time between two large cohorts.

Methods: Data were derived from two sequential multi-institutional, longitudinal cohort studies of advanced cancer patients, recruited from 2002 to 2008 (coping with cancer I [CwC-1]) and 2010 to 2015 (coping with cancer II [CwC-2]). Self-reported U.S.-born whites (whites) ($N=253$), U.S.-born Latinos (US-L) ($N=34$), and Latino immigrants (LI) ($N=65$) with a poor-prognosis cancer were included. The primary independent variables were immigrant status, Latino ethnicity, and CwC cohort. The primary dependent variable was preference for LEC.

Results: Within CwC-2, LI were 9.4 times more likely to prefer LEC over comfort care versus US-L (adjusted odds ratio [AOR]=9.4; 95% confidence interval [CI]: 1.2–72.4), and US-L were 0.3 times less likely to prefer LEC versus whites (AOR=0.3; 95% CI: 0.1–1.0). LI from CwC-2 were 11.4 times more likely to prefer LEC versus LI from CwC-1 (AOR=11.4; 95% CI: 2.7–48.4). Within CwC-1, there was no difference in LEC preference between LI and US-L, nor between US-L and whites.

Conclusions: Immigrant status had a strong effect on preference for LEC at the EoL among the more recent cohort of Latino cancer patients. Preference for LEC appears to have increased significantly over time for LI but remained unchanged for US-L. LI may increasingly want LEC near death.

Keywords: cancer; disparities; immigrant status; Latino

Introduction

IMMIGRANTS LIVING in the United States represent an important demographic group served by the health care system. Latinos constitute over half of the U.S. immigrant population, and Latinos are now the largest minority group in the United States.^{1,2} Given the United States' current political climate, changing demographic landscape, and the significance of cancer as the leading cause of death among Latinos in the United States,³ there is heightened interest in the effects of Latino immigration on cancer outcomes.

Honoring end-of-life (EoL) care preferences is an essential component of high-quality cancer care.⁴ A few studies to date on EoL care preferences among Latinos have conflicting results.^{5–10} However, these studies are limited, in that immigrant status is not considered. Immigrants are a unique patient population who often have different health behaviors and outcomes compared with coethnic individuals born in the United States.^{11–15} Therefore, immigrant status may have important implications for optimizing health care delivery at the EoL. We aimed to determine how preference for life-extending care (LEC) at the EoL for

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Accepted January 4, 2019.

advanced cancer patients varied by Latino ethnicity and immigrant status, and over time between two large cohorts of advanced cancer patients.

Methods

The study sample included participants in the coping with cancer I (CwC-1) and coping with cancer II (CwC-2) studies: prospective, multi-institutional cohort studies funded by the National Cancer Institute and the National Institute of Mental Health. Participants diagnosed with a poor-prognosis advanced cancer were recruited between 2002 and 2008 (CwC-1), and between 2010 and 2015 (CwC-2). Detailed eligibility criteria and study procedures have been previously described.^{5,16}

This study focused on differences in preference for life-extending versus comfort-focused care at the EoL between immigrants and nonimmigrants among Latino participants, and between Latinos and non-Latino whites among U.S.-born participants. Given the exposures and outcomes of interest, only self-reported Latino immigrants (LI), U.S.-born Latinos (US-L), and U.S.-born non-Latino whites (whites) were included in the analysis. Participants with missing data for EoL care preference were excluded, as were whites recruited at sites from which no US-L were recruited.

Primary independent variables were immigrant status, Latino ethnicity, and CwC cohort (representing sequential time periods). Additional covariates included age, gender, marital status, years of education, health insurance status, religious affiliation, and country of origin. The primary dependent variable was preference for LEC. Participants were asked if they would prefer (i) “a course of treatment that focused on extending life as much as possible, even if it meant more pain and discomfort,” or (ii) “a plan of care that

focused on relieving pain and discomfort as much as possible, even if that meant not living as long.” Response options were “extend life as much as possible,” “relieve pain or discomfort as much as possible,” or “don’t know.” Those who responded “don’t know” were excluded.

The study sample was divided into a Latino and a U.S.-born sample. Student’s *t*-tests and χ^2 statistics were used to compare group differences. Values were imputed for missing data for participant age ($n=3$), education ($n=6$), marital status ($n=6$), and insurance status ($n=2$).

Multiple logistic regression models were created to estimate main and interactive effects of immigrant status and CwC cohort among LI and US-L, and main and interactive effects of ethnicity and CwC cohort among US-L and whites, on preference for LEC at the EoL, adjusting for potential confounders (age, education, sex, marital status, insurance status, religion, and cancer center). A model fit using the Latino sample allowed us to estimate (i) odds for preference for LEC for LI versus US-L (reference) within each cohort; and (ii) relative odds for preference for LEC for CwC-2 versus CwC-1 (reference) among (a) LI and (b) US-L. A model fit using the U.S.-born sample allowed us to estimate (i) odds for preference for LEC for US-L versus whites (reference) within each cohort; and (ii) odds for preference for LEC for CwC-2 versus CwC-1 (reference) among (a) US-L and (b) whites. Statistical inferences were based on two-sided tests. Data were analyzed with SAS 9.4 (SAS Institute, Cary, NC).

Results

Of the 352 cancer patients included, 253 were white, 34 were US-L, and 65 were LI. Thus, there were 99 Latino patients and 281 U.S.-born patients.

TABLE 1. PATIENT SOCIODEMOGRAPHIC CHARACTERISTICS AND THEIR ASSOCIATIONS WITH IMMIGRANT STATUS IN THE LATINO PATIENT SAMPLE ($N=99$)

Variable	Group	Full sample		Immigrant		U.S. born		p
		99		65		34		
		Mean	SD	Mean	SD	Mean	SD	
Age, years		55.1	12.9	53.5	14.0	58.1	10.1	0.061
Education, years		8.9	5.0	7.8	5.0	11.1	4.0	0.001
		n	%	n	%	n	%	
Sex	Male	50	50.5	35	53.8	15	44.1	0.358
	Female	49	49.5	30	46.2	19	55.9	
Marital status	Married	58	58.6	43	66.2	15	44.1	0.035
	Not married	41	41.4	22	33.8	19	55.9	
Insurance status	Insured	34	34.3	12	18.5	22	64.7	0.000
	Not insured	65	65.7	53	81.5	12	35.3	
Religion	Catholic	67	67.7	46	70.8	21	61.8	0.363
	Not Catholic	32	32.3	19	29.2	13	38.2	
Cancer center	Yes	26	26.3	10	15.4	16	47.1	0.001
	No	73	73.7	55	84.6	18	52.9	
Cohort	CwC-1	67	67.7	49	75.4	18	52.9	0.023
	CwC-2	32	32.3	16	24.6	16	47.1	
Care preference	Extend life	39	39.4	26	40.0	13	38.2	0.865
	Comfort	60	60.6	39	60.0	21	61.8	

CwC, coping with cancer; SD, standard deviation.

TABLE 2. ADJUSTED ODDS RATIOS FOR ASSOCIATIONS BETWEEN IMMIGRANT STATUS, COHORT, AND PREFERENCE FOR LIFE-EXTENDING END-OF-LIFE CARE IN THE LATINO PATIENT SAMPLE (N=99)

<i>Preference for life-extending EoL care associate with</i>	<i>For group</i>	<i>AOR</i>	<i>Lower 95% CI</i>	<i>Upper 95% CI</i>	<i>p</i>
Immigrant vs. U.S. born	CwC-2	9.4	1.2	72.4	0.031
	CwC-1	0.4	0.1	1.5	0.169
Cohort, CwC-2 vs. CwC-1	Immigrant	11.4	2.7	48.4	0.001
	U.S. born	0.5	0.1	2.6	0.413

Odds ratios adjusted for age, education, sex, insurance, religion, and cancer center.
CI, confidence interval; EoL, end of life; AOR, adjusted odds ratio.

Immigrant versus U.S.-born Latinos

Sociodemographic characteristics of the Latino sample are presented in Table 1. Within CwC-2, LI had higher odds of preferring LEC over comfort care compared with US-L (adjusted odds ratio [AOR]=9.4; 95% confidence interval [CI]: 1.2–72.4). LI from CwC-2 had higher odds of preferring LEC compared with LI from CwC-1 (AOR=11.4; 95% CI: 2.7–48.4). However, there was no difference in LEC preference between LI and US-L in CwC-1 (AOR=0.4; 95% CI: 0.1–1.5) (Table 2).

U.S.-born Latinos versus non-Latino whites

Sociodemographic characteristics of the U.S.-born sample are presented in Table 3. Within CwC-2, US-L had lower odds of preferring LEC compared with whites (AOR=0.3; 95% CI: 0.1–1.0). There was no difference in LEC preference between US-L and whites in CwC-1 (AOR=2.3; 95% CI: 0.7–7.8), nor was there a difference in LEC preference for US-L in CwC-2 compared with US-L in CwC-1 (AOR=0.7; 95% CI: 0.1–3.2). However, whites in CwC-2 had a 5.5-fold increase in the odds of preference for LEC compared with whites in CwC-1 (AOR=5.5; 95% CI: 2.8–10.9) (Table 4).

Conclusions

In our study, immigrant status has a strong effect on preference for LEC among a more recent cohort of Latino advanced cancer patients. Preference for LEC appears to have increased significantly over time for LI but remained unchanged for US-L. LI may increasingly want LEC near death. Given that patient care preferences at the EoL are associated with receipt of care that is often aggressive, burdensome, costly, and futile,^{17–19} and receipt of care that is perceived to be “life-extending” at the EoL is associated with greater distress and poorer quality of life,²⁰ the implications of immigrant status on EoL preferences and care are significant.

To our knowledge, this is one of the first studies to examine the influence of immigrant status on the treatment preferences of Latino advanced cancer at the end of life. Among Latinos in CwC-2, we found that LI were 9.4 times more likely to prefer LEC than US-L. US-L were 0.3 times less likely to prefer LEC than whites in the same cohort. This stark difference in preferences between LI and US-L is a novel finding and is at odds with what has been shown in the literature regarding Latino treatment preferences at the EoL in studies that do not account for immigrant status.^{21–23}

TABLE 3. PATIENT SOCIODEMOGRAPHIC CHARACTERISTICS AND THEIR ASSOCIATIONS WITH LATINO ETHNICITY IN THE U.S.-BORN PATIENT SAMPLE (N=287)

<i>Variable</i>	<i>Group</i>	<i>Full sample</i>		<i>Latino</i>		<i>Non-Latino</i>		<i>p</i>
		<i>287</i>		<i>34</i>		<i>253</i>		
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Age, years		57.2	10.7	58.1	10.1	57.1	10.8	0.586
Education, years		13.9	3.2	11.1	4.0	14.3	2.9	0.000
		<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
Sex	Male	130	45.3	15	44.1	115	45.5	0.883
	Female	157	54.7	19	55.9	138	54.5	
Marital status	Married	174	60.6	15	44.1	159	62.8	0.036
	Not Married	113	39.4	19	55.9	94	37.2	
Insurance status	Insured	219	76.3	22	64.7	197	77.9	0.090
	Not insured	68	23.7	12	35.3	56	22.1	
Religion	Catholic	108	37.6	21	61.8	87	34.4	0.002
	Not Catholic	179	62.4	13	38.2	166	65.6	
Cancer center	Yes	206	71.8	16	47.1	190	75.1	0.001
	No	81	28.2	18	52.9	63	24.9	
Cohort	CwC-1	212	73.9	18	52.9	194	76.7	0.003
	CwC-2	75	26.1	16	47.1	59	23.3	
Care preference	Extend life	108	37.6	13	38.2	95	37.5	0.938
	Comfort	179	62.4	21	61.8	158	62.5	

TABLE 4. ADJUSTED ODDS RATIOS FOR ASSOCIATIONS BETWEEN LATINO ETHNICITY, COHORT, AND PREFERENCE FOR LIFE-EXTENDING END-OF-LIFE CARE IN THE U.S.-BORN PATIENT SAMPLE (N=287)

<i>Preference for life-extending EoL care associate with</i>	<i>For group</i>	<i>AOR</i>	<i>Lower 95% CI</i>	<i>Upper 95% CI</i>	<i>p</i>
Latino vs. non Latino	CwC-2	0.3	0.1	1.0	0.042
	CwC-1	2.3	0.7	7.8	0.178
Cohort, CwC-2 vs. CwC-1	Latino	0.7	0.1	3.2	0.596
	Non Latino	5.5	2.8	10.9	0.000

Odds ratios adjusted for age, education, sex, insurance, religion, and cancer center.

Our findings indicate that LEC preference among LI with advanced cancer changed dramatically between our two cohorts. LI enrolled in CwC-2, which recruited participants from 2010 to 2015, were 11.4 times more likely to prefer LEC than those enrolled in CwC-1, which recruited participants from 2002 to 2008. Within CwC-1, there was no difference in preference for LEC between LI and US-L. These preferences remained after controlling for sociodemographic characteristics, suggesting that this finding is due to other factors unique to the immigrant experience. Perhaps, this preference stems from changes in the health care systems of the immigrants' country of origin, or assimilation with dominant U.S. cultural norms and values that have traditionally favored more aggressive care near death.²⁴⁻²⁶ Our finding that whites from CwC-2 also had substantially higher odds of preferring life extending compared with U.S.-born whites from CwC-1 is consistent with this hypothesis. Whatever the cause of these temporal shifts in preference in favor of LEC, they appear to be unrelated to Latino ethnicity *per se*. US-L actually had lower odds of preferring LEC compared with whites in the more recent CwC-2 cohort. Furthermore, we found that there was no difference between US-L CwC-2 and CwC-1.

The primary strength of our study is the ability to provide quantitative estimates of the effect of immigrant status on preference for life-extending EoL care for Latino patients with advanced cancer. This is an increasingly important demographic group that is becoming a larger proportion of individuals served by the U.S. health care system. However, our findings should be interpreted with consideration of the study limitations. First, we did not account for acculturation²⁷ or immigrant generational status.¹³ Furthermore, although the data are derived from two prospective cohorts, inferences about change over time must consider that the same population is not being compared across studies.

Despite these limitations, our findings demonstrate an emerging, stark difference in preference for life-extending EoL cancer care between immigrant and US-L. These findings are particularly pertinent to the delivery of high-quality cancer care in the setting of an increasingly diverse patient population served by the U.S. health care system. Further studies are needed to validate and examine potential mechanisms underlying these findings. Beyond the need for future research, we can conclude that consideration of immigrant status is vital to understanding preferences, and thus delivery of value-consistent care among the large and growing number of Latino cancer patients in the U.S. Latino patients should not be studied in aggregate without taking immigrant status into account, particularly when designing interventions aimed at reducing disparities in the quality of the care near death.

Acknowledgments

Data for coping with Cancer 1 and 2 were obtained from grants from the National Cancer Institute (CA106370) and the National Institute of Mental Health (MH63892). Dr. A.I.T. is a recipient of an NCI Diversity Supplement to Dr. Prigerson's Outstanding Investigator Award (CA197730). Drs. P.K.M. and H.G.P. were supported by a grant on Latino/non-Latino cancer patient disparities in end-of-life care from the National Institute of Minority Health and Health Disparities (MD007652).

Presented at the 2017 ASCO Annual Meeting, Chicago, IL, June 2017 (Abstract #10028).

Author Disclosure Statement

No competing financial interests exist.

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