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Cancer Prevention and Diagnosis Knowledge among Spanish-speaking Older Latino/as Residing in Tampa, Florida

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Objective: Cancer remains the leading cause of death among Latino/as in the United States, and advancing age is a major risk factor for developing most cancer types. Given the growing population of Latino/as immigrants aged ≥60 years and the current lack of relevant data, this study aims to understand the cancer prevention and perception of cancer diagnosis among older Latinos to ensure that they receive effective prevention, intervention, and psychosocial care.

Method: A survey exploring attitudes about cancer was developed and administered in Spanish. Using convenience sampling, 168 individuals identifying as Latino/as were surveyed in Tampa, Florida. Descriptive analysis was conducted to understand study population characteristics. Frequencies were assessed to understand the participants' responses to cancer-related attitude questions. The effects of age, country of origin, length of stay in the United States, and marital status on the participants' cancer-related attitudes were assessed using logistic regression.

Results: The mean age of the study participants was 67.9 years, 34.5% were male, and the mean length of stay in the United States was 25.8 years. In total, 29% and 24.4% of the participants knew that breast cancer and prostate cancer, respectively, can be diagnosed early. Individuals with an elementary education were less likely to have sufficient knowledge of cancer prevention and diagnosis. Additionally, 93.5% of the population was aware that tobacco use can lead to cancer, and 84.5% knew that exposure to tobacco smoke can affect both the smoker and their family.

Conclusion: Older Latino/as possess knowledge about cancer causes yet lack knowledge regarding cancer prevention and diagnosis, potentially creating barriers and causing them to avoid treatment. Focusing on cancer-related health education among older Latino/as is a step toward appropriate and equitable cancer care. *Ethn Dis*. 2022; 32(3):185-192; doi:10.18865/ed.32.3.185

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Background

Cancer is the leading cause of death among Latino/as in the United States. It is estimated that 32% of Latinas and 36% of Latinos aged ≥50 years have a lifetime probability of developing invasive cancer, with lower survival rates for most cancers among both males and females, even when allowing for age and stage distribution.[1]

There is evidence that older Latino/as lack knowledge about cancer treatment options, and they are often adversely impacted by health care inequities regarding cancer treatment and care options.[2–4] The use of cancer screening tests among Latino/as in general, especially for colorectal cancer in men, is low.[5,6] However, physician recommendations are associated with an increased willingness to undergo screening.[4] Although programs have increased colorectal cancer screenings and reduced overall mortality, the colorectal cancer screening rate among Latinos may be as low as 47%, compared to 62% among their non-Latino White male counterparts.[6] In addition, only 79% of Latinos with melanoma survive for 5 years following diagnosis, compared to ~88% of non-Latino White men, due to a higher occurrence of thicker tumors and later diagnoses among this population.[1] The prevalence of cancer, health care inequalities, and a general lack of knowledge about cancer in the Latino/a community call for the examination of their perception of a cancer diagnosis. This study examined cancer prevention and the perception of cancer diagnosis among Latino/as aged ≥60

years residing in Tampa, Florida.

Previous studies have examined Latino/as' beliefs about cancer and cancer prevention, with common themes being fear, religion, and superstition.[7–10] However, these studies analyzed populations with varying adult age ranges, and they did not exclusively include older adults.

A similar study examining a population of US Hispanics found that increased access to preventative cancer screenings, especially among the uninsured, is key, especially given that Latinas are twice as likely to be diagnosed with cervical cancer and 50% more likely to die from it than non-Hispanic White women.[1] Further research that distinguishes age groups among Latino/as in relation to cancer treatments, common cancer perceptions, and likelihood of taking preventative measures is needed to provide services that are sensitive to the diverse needs of these specific groups. Additionally, given the Latino/a populations' respect for their elders and reliance on family when making treatment decisions, it is essential for older Latino/as to receive accurate information, quality care, and culturally competent counseling about their diagnoses if they are to educate their families, set a good example, and effectively communicate and make decisions with their families.[11–12]

This study explored the knowledge and the perceptions about cancer prevention and diagnosis among Latino/as aged ≥60 years residing in Tampa, Florida.

More specialized research into the older population of Latino/as is vital, especially regarding their perceptions surrounding cancer, which may inform their health care decisions. Groups of Latino/a scientists and health care leaders in oncology have agreed that the greatest need in understanding cancer issues that affect Latino/as is for more specialized research in the areas of preventative screening and care to increase interpersonal efficacy and intercultural competency among providers.[13] Studies have also indicated that Latino/as face a lack of information about preventative cancer care and additional barriers (eg, language barriers) to cancer screening, suggesting culturally inadequate health care systems and barriers related to cost, insurance, and transportation.[4, 14–15] Research that specifically studies older Latino/as' attitudes toward cancer could help identify specific needs among the community to help facilities provide more effective communication and research-informed multilevel care. Evidence fittingly shows that previous culturally tailored interventions and patient navigation resulted in increased cancer screenings among those of Latino/a descent.[16]

Despite the emerging research focusing on Latino/as and cancer, and despite the importance of the challenges they face when diagnosed with cancer, there are no specific data regarding perceptions about cancer prevention and diagnosis in older Latino/as residing in Tampa, Florida. Additionally, Latino/a older adults remain underrepresented in research and underserved clinically, although not from a lack of willingness in urban or rural participants.[17] Like most areas of the United States, this geographic area has a growing older Latino/a population, and Latino/a immigrants in the southern United States report poorer health than those in other regions.[18,19] Thus, it is urgent to understand perceptions about cancer among older immigrant Latino/a populations in Tampa, Florida to illuminate what is important to this population and how they make testing and treatment decisions. The findings have the potential to contribute necessary data to a crucial yet neglected area of study. Most importantly, the findings could assist current and future programs in providing effective, tailored interventions and psychosocial cancer prevention and treatment to maximize wellbeing in cancer care for the older Latino/a population. To this end, this study explored the knowledge and the perceptions about cancer prevention and diagnosis among Latino/as aged ≥60 years residing in Tampa, Florida.

Methods

Study Population

This study was conducted among 168 Latino/a, Spanish-speaking individuals in the Tampa Bay area of Florida given the increase population of older Latino/as in the region.

The convenience sampling method was used, and participants were recruited at churches, Latino/a stores, and community centers in the study region. Only individuals without a current or previous cancer diagnosis were included in this study.

Data Collection

The study survey, which explored perceptions surrounding cancer prevention and diagnosis, was developed by the Fundación Contra El Cáncer in Catalan.[20] The survey was translated into Spanish and in English by a native Catalan, Spanish and English speaker in the United States. It was back translated into Catalan for accuracy by the third co-author, who is a native Catalan and Spanish speaker and back translated into English by the first author who is a native English and Spanish speaker. Consent was obtained from Latino store owners, priest/pastors and center's administration to distribute flyers in the locations were older Latino/as congregate, shop and socialize. After reviewing the flyer some older Latinos consented to participate immediately on the site while others provided their phone numbers and the researcher contacted and scheduled to conduct the survey in their place of preference. Participants were informed of the purpose of the study, volunteered to participate, and provided oral and written consent. Participants received a $25 gift card incentive after the completion of the interview. The survey was available in English and in Spanish; all participants chose to complete the survey in Spanish. Interviews were conducted in Spanish by native Spanish speakers at locations convenient for the participants. Some were unable to travel due to transportation limitations and other physical constraints. The study was approved by the University of South Florida Institutional Review Board, and participants provided informed consent before participating.

Statistical Analysis

The questions, which targeted participants' knowledge of and perceptions about cancer prevention and diagnosis, were scored based on a system developed by a consensus of the study team. One point was given for every correct expected answer. From a total score of 14, each participant's level of knowledge was categorized as either poor (less than 8), intermediate (between 9 and 11), or good (12 and above). Individuals were categorized as having sufficient knowledge if they scored at either the intermediate or good levels. Univariate analyses were conducted to understand the characteristics of the study population. Frequencies were assessed to understand participants' responses to questions on cancer-related prevention and diagnosis. Binary logistic regression was used to assess the association between individual variables of interest and the outcome variable (having sufficient knowledge). To control for all variables, multivariable logistic regression was utilized via both backward and forward logistic regression, with both methods yielding similar results. Statistical significance was set at P≤.05. Data were analyzed using SPSS version 24 for Windows.

Results

The demographic characteristics of the study population are presented

Table 1. Baseline characteristics

Variable	Study Population, N = 168
Age, years, mean (std)	67.9 (8.0)
Sex, n (%)	
Male	58 (34.5)
Female	110 (65.5)
Education, n (%)	
No formal education	3 (1.8)
Elementary	31 (18.7)
High school	40 (24.1)
Technical	33 (19.9)
College/university	59 (35.5)
Marital status, n (%)	
Married or living with partner	95 (56.5)
Other	73 (43.5)
Place of origin, n (%)	
USA	2 (1.2)
Puerto Rico	49 (29.3)
Cuba	20 (12.0)
Mexico	10 (6.0)
Central America	8 (4.8)
South America	78 (46.7)
Length of stay in the US, mean (std)	25.8 (16.4)

Table 2. Study participants' response to cancer prevention and diagnosis

Question	Expected Response	No, n (%)
1. Can cancer be prevented?	Some cancers	83 (49.4)
2. Can cancer be diagnosed early?	Yes	104 (61.9)
3. Do prevention and diagnosis mean the same thing?	No	102 (60.7)
4. Can breast cancer be prevented or diagnosed early?[a]	Diagnosed early	49 (29.2)
5. Can prostate cancer be prevented or diagnosed early?[a]	Diagnosed early	41 (24.4)
6. Can drinking alcohol in excess cause cancer?	Yes	89 (53.0)
7. Can tobacco use cause cancer?	Yes	157 (93.5)
8. If tobacco use causes cancer, who does it affect (only the smoker or the smoker and family members)?	Smoker and family members	142 (84.5)
9. Can breast cancer be diagnosed early by mammogram?	Yes	137 (81.5)
10. Do you know how to perform a breast self-examination?	Yes	107 (63.7)
11. Can prostate cancer be detected early through Prostate Specific Antigen Test	Yes	90 (53.6)
12. Can prolonged sun exposure cause skin cancer?	Yes	146 (86.9)
13. Can food influence the development of cancer?	Yes	130 (77.4)
14. Can a sedentary lifestyle increase the risk of developing cancer?	Yes	91 (54.2)
15. Does obesity increase the risk of developing cancer?	Yes	111 (66.1)

a. Participants may have considered these questions as prevention AND diagnosis, instead of prevention OR diagnosis.

in Table 1. The mean age of the study participants was 67.9 years. Of the 168 individuals in the study, 34.5% were male. Most of the participants had at least a high school education, and there were more individuals who were married or living with a partner (56.5%) than who were single or living with a partner. Most of the participants were from South America (46.7%), and their average length of stay in the United States was 25.8 years.

Table 2 presents the responses to questions related to cancer prevention and diagnosis. Most of the participants were aware of diagnosis and were able to answer the general questions about the prevention of common types of cancer, such as breast cancer. In addition, most (93.5%) were aware that tobacco use causes cancer and that smoking affects the smoker as well as their family members (84.5%). They were also aware that mammograms facilitate the early diagnosis of breast cancer (81.5%), and they were aware of the association between prolonged exposure to the sun and skin cancer (86.9%). However, specific knowledge about early diagnosis was low in the study population. Only 29.2% of the participants knew that breast cancer can be diagnosed early, which was similar to the response concerning the early diagnosis of prostate cancer (24.4%). The mean score for participants' responses to questions concerning cancer prevention and diagnosis knowledge was 9.40 (standard deviation: 2.96). Overall, 26.2% had poor knowledge of cancer prevention and diagnosis. In contrast, 48.2% and 25.6% of participants had intermediate and good knowledge of cancer prevention and diagnosis, respectively.

Table 3 presents the factors that were associated with participants who had sufficient knowledge of cancer prevention and diagnosis. A bivariate analysis shows that several factors—such as participant age, marital status, and education—were associated with having sufficient knowledge of cancer prevention and diagnosis. Compared to those above the age of 72, individuals below the age of 62 were more likely to have sufficient knowledge (crude odds ratio [COR]: 4.77, 95% CI: 1.64–13.89). However, individuals with an elementary education were less likely to have sufficient knowledge of cancer prevention and diagnosis than those with a tertiary education (COR: .29, 95% CI: .10–.79). In the fully adjusted model, only education was found to be associated with knowledge about cancer prevention and diagnosis.

Study Limitations

Researchers should use caution when generalizing the results of this study due to certain inherit limitations. For example, the sample may not be representative of all older Latino/a adults in Tampa, Florida. In addition, participation bias may have impacted the results, given that those who volunteered may have had an in-

Table 3. Factors associated with study participants' knowledge of cancer prevention and diagnosis

Variables	Sufficient knowledge about cancer prevention and diagnosis			COR (95%CI)	AOR (95% CI)
	Yes, %	No, %	P		
Age (years)					
<62	86.0	14.0	.02[b]	4.77 (1.64–13.89)[b]	
63-66	74.0	26.0		2.20 (.90–5.38)	
67-72	77.1	22.9		2.61 (.95–7.17)	
>72	56.4	43.6		ref	
Sex					
Male	75.9	24.1	.40	.85(.41-1.77)	
Female	72.7	27.3		ref	
Marital status					
Married or living with partner	80.0	20.0	.03[b]	.48 (.24-.96)[b]	
Other	65.8	34.2		ref	
Education					
No formal education	0	100	.01[b]	0 (0-0)	0 (0-0)
Elementary	61.3	38.7		.29 (.10–0.79)[b]	.27 (.10–0.75)[b]
High school	72.5	27.5		.48 (.18–1. 29)	.52 (.19–1.43)
Technical	72.7	27.3		.48 (.17–1.36)	.46 (.16–1.31)
College/university	84.7	15.3		ref	ref
Place of origin					
Puerto Rico	75.5	24.5	.39	ref	
Cuba	90.0	10.0		2.92 (.59–14.45)	
Mexico	60.0	40.0		.49 (.12–2.02)	
Central America	62.5	37.5		.54 (.11–2.61)	
South America	71.8	28.2		.83 (.37–1.89)	
USA	100.0	0		-[a]	
Length of stay in the US					
≤ 13	80.0	20.0	.04[b]	.82 (.28–2.46)	.70 (.20–2.50)
14–22	73.2	26.8		.56 (.19–1.63)	.35 (.10–1.21)
23–37	57.5	42.5		.28 (.10–.78)[b]	.24 (.08–.76)[b]
> 37	82.9	17.1		ref	ref

COR, crude odds ratio; AOR, adjusted odds ratio. The multivariate model is adjusted for all variables.
a. Cell values too small to accurately calculate the odds ratio.
b. Statistically significant at P≤.05.

terest in the study and cancer. They may also have been more informed about cancer than their peers. Therefore, their responses may differ from those of older adults who did not participate. Additionally, there was a limited number of male participants in this study. Although there could have been more men in the study, many efforts were made to obtain the amount recruited. The cross-sectional design of the study also limits the inference of a causal relationship. Despite its limitations, this study contributes to the limited research on Latino/a older adults' attitudes and knowledge of cancer and highlights the importance of educating older adults to raise awareness of cancer risks, symptoms, and appropriate steps after diagnosis.

Discussion

The findings of this study have significant implications for practice. For example, among older Latino/as, specific knowledge about early diagnosis regarding breast cancer and prostate cancer was low. All of the participants have immigrated or migrated from economically poorer countries. It is likely that their initial knowledge regarding cancer came from countries where early diagnoses was unavailable or not discussed when they resided in their home country. This new knowledge can be obtained especially for Latinos with elementary educa-

tion, in locations that older Latinos frequent, similar to the sites in which recruitment for this study occurred as well as with primary physicians. Education about cancer prevention and diagnosis, additional training, and the inclusion of community members as mentors in knowledge exchange are effective strategies when working with older adults.[21] In addition, health literacy surrounding cancer prevention has proven an effective first step toward changing attitudes and behaviors about this disease.[22] It is essential to develop effective health literacy strategies and measurement tools that explore various cancer types and to use robust methods to determine predictors of poor health literacy surrounding cancer among older adults in Tampa, Florida and neighboring communities. Gaining an understanding of this population's prevention and perceptions of a cancer diagnosis can empower professionals to understand the coping strategies that are being utilized. This study will support the development of strategies for educating older adults to prevent them from minimizing and ignoring cancer symptoms.

We found education to be associated with cancer prevention and diagnosis knowledge. Individuals with higher education levels were more likely to have strong knowledge of cancer prevention and diagnosis.

In our study, we found education to be associated with cancer prevention and diagnosis knowledge. Individuals with higher education levels were more likely to have strong knowledge of cancer prevention and diagnosis. Multiple studies in different populations have demonstrated this association.[23–26] The sources women chose to obtain information regarding pap smears and human papillomavirus (HPV) co-testing relied heavily on fotonovelas (photonovels), radionovelas, and digital stories to spread cancer-related knowledge.[27] This suggests the need to understand the different mechanisms of delivery of cancer education programs to promote effective knowledge transfer, particularly within the context of the target population.

Providing older adults with accurate information about cancer prevention and diagnosis can decrease their fear and pessimism toward the illness and its treatment. Health problems can also decrease when individuals understand that symptoms are attributable to cancer rather than age. In addition, mental health providers and physicians must remain cognizant of cultural factors that can impact older adults to help combat delays in healthcare access, delivery, and treatment within this population.

At the macro level, mental health and medical professionals can initiate change in cancer prevention and control policies to better assist older adults, increase early detection, improve prognoses, and enhance treatment. Cancer prevention policy changes that capitalize on the community-level connection between increased mammographic screening rates and prior clinical breast exams are recommended.[28] Because older adults' perceptions are rooted in their economic, social, and political systems, culturally oriented cancer control activities can be implemented locally in the community to inform individuals about cancer prevention and the appropriate actions to take if diagnosed.[29]

Conclusion

This study can provide valuable insights to aid the tailoring of cancer awareness initiatives for older Latino adults. Programs that specifically target areas of cancer knowledge and prevention that are lacking in this population can play a significant role in increasing cancer prevention and early diagnosis related to health behavior among older Latino adults. In the era of precision medicine, studies that explore understanding of cancer prevention and diagnosis can help inform effective interventions to increase uptake of cancer genetic screening in this population. The findings of this study suggest that Latino/as have knowledge about the causes of cancer, yet they lack knowledge regarding cancer prevention and a cancer diagnosis, which may create barriers and cause older Latino/as to avoid treatment. Focusing on cancer-related health education among older

Latinos is a step toward appropriate and equitable cancer care. Our survey was conducted in Spanish as per the participants request. Additional research, materials and recruitment sites need to be tailored to older Latinos. The results indicate that individuals with an elementary education were less likely to have sufficient knowledge of cancer prevention and diagnosis than those with a tertiary education; strategies should be developed to address this knowledge inequality. This study sets the stage for additional studies that will expand our understanding of cancer prevention and perceptions regarding specific cancers among less-educated Latino/as. The information gained can be used to inform the Latino/a community via evidence-based interventions to demystify cancer treatments. The findings will facilitate the development of preventive health policies that go beyond a standardized approach to ensure justice and equity in cancer care for all populations.

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Conflict of Interest

No conflicts of interest to report.

Author Contributions

Research concept and design: Carrion, T. Estapé, Tollinchi, J. Estapé; Acquisition of data: Carrion; Data analysis and interpretation: Carrion, Neelamegam, T. Estapé, Doering, Snyder, J. Estapé; Manuscript draft: Carrion, Neelamegam, Doering, Snyder, Tollinchi; Statistical expertise: Carrion, Neelamegam; Acquisition of funding: Carrion; Administrative: Carrion, T. Estapé, Doering, Snyder, Tollinchi, J. Estapé; Supervision: Carrion

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