Disparities in access to healthcare: a survey-based, pilot investigation of sinonasal complaints in the community care setting

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Introduction:

Social determinants of health (SDH), such as education, income, insurance, and race/ethnicity, can significantly impact access to care and health outcomes for various otolaryngologic conditions.[1] Nevertheless, little is known regarding the impact of these social factors on access to care among patients with sinonasal symptoms. The majority of studies focusing on chronic rhinosinusitis (CRS) underrepresent low-income and ethnic minority patients compared to national census estimates.[2, 3] This limits generalizability of study results to those population groups. Although studies have shown the negative effects of patient-provider language difference,[4] there is a dearth of prospective literature relating to the differences in patient-provider language in otolaryngology and its impact of access to care. We sought to prospectively analyze the relationship between social determinants of health and access to non-specialist care to determine whether primary language spoken was a predictor of access to care.

Methods:

International Review Board approval (IRB#00141714) was obtained from the University of Utah; written consent was obtained from each patient for participation in this study. A brief survey, designed to ascertain information on social determinants of health, access to care, and history of sinonasal symptoms was adapted from prior work done by the group[5] (see Supplemental figure 1 for sample survey, originally created in English and then translated to Spanish). The survey was prospectively administered to a cross-section of patients in two distinct primary clinic waiting rooms between 06/2021 and 01/2022. Clinic A was primarily Spanish-speaking, whereas the vast majority of patients seeking care at Clinic B were English-speaking. The two clinics demonstrated similar Area Deprivation Indices, which is a measure of neighborhood socioeconomic disadvantage.[6]

Demographic data, outlined in table 1, was collected for each patient. Patients were queried about sinonasal symptoms, including nasal congestion, yellow or green drainage from the nose, facial or ear pain, and inability to smell. Quantitative variables were assessed using two-sample t-tests and categorical variables were assessed using chi-square and fisher exact tests; p-value of <0.05 was defined as significant. A univariate analysis was conducted to assess the relationship between various social determinants of health and access to care for sinonasal complaints (R Core Team, Vienna Austria, 2021). Effect size and 95% confidence intervals were calculated.

Results:

There were no significant differences in age (p=0.58) or gender (p=0.99) between the English-speaking and Spanish-speaking cohorts (Table 1). Spanish-speakers were more likely to report low

income, low education level, lack of insurance, and never smoking compared to English-speaking patients ($p<0.02$). English-speaking patients were noted to have significantly more self-reported medical diagnoses than Spanish-speaking patients: asthma ($p<0.01$), gastroesophageal reflux ($p=0.02$), and anxiety ($p<0.01$) (Table 1).

Although both patient populations demonstrated the same prevalence of sinonasal symptoms ($p=0.41$, $w=0.09$, 95% CI = 0.004, 0.29) (Table 2), English-speaking patients were significantly more likely to have seen a physician for sinonasal symptoms compared to the Spanish-speaking population ($p=0.03$) (Table 2). Similarly, White patients were more likely to have seen a physician compared to Hispanic and Native American patients ($p=<0.01$). There was no meaningful association between education level ($p=0.89$), income ($p=0.61$), or gender ($p=0.74$) and likelihood to have seen a physician for sinonasal symptoms (Table 2).

Discussion:

Both English and Spanish speaking patients demonstrated a similar prevalence of sinonasal symptoms in a non-specialty setting; however, English-speaking patients were significantly more likely to have seen a physician for their sinonasal symptoms compared to Spanish-speaking patients. There may be several factors that can explain this difference. First, the lack of interpretative services for patients who are not native English speakers may result in breakdown of communication between provider and physician regarding symptoms, diagnosis, and treatment plan.[7] Second, there may be cultural bias in play. Data has demonstrated that different ethnic groups can have different views on healthcare and pain; it may be possible that they do not perceive sinonasal symptoms as serious enough to justify a discussion with their physician.[8] Third, primary care physicians may have

difficulty achieving successful referral to specialists for minority patients, due to insurance issues or geographic disparities for specialists.[7]

To the best of our knowledge, the present investigation is the first to examine the impact of primary language spoken on access to a non-specialist, community care setting, as it relates to self-reported sinonasal symptoms, arguing against inherent differences that might predispose one to sinonasal symptoms based on this variable alone. Unlike prior retrospective examinations of SDH related to otolaryngologic symptoms,[9, 10] the present study was prospectively conducted. Prior studies examining healthcare disparities in otolaryngology show low enrollment numbers of minorities,[9, 10] and are typically conducted in tertiary care centers[9, 10], which limits generalizability to the larger population of non-English speaking patients. Here, we achieved equal enrollment of both English speaking and Spanish speaking patients within community clinics, which may help increase generalizability of the results to a greater proportion of Spanish-speaking patients.

There are several important limitations to this study. The sample size was limited due to the pilot nature of the study. We were unable to determine the independent effect of primary language spoken/race/insurance status on access to care using logistic regression due to small sample size and the large number of variables that demonstrated differences across the two cohorts. Future studies should incorporate a larger sample size to further assess the relationship among these factors.

Table 1: Demographics of each clinic cohort

	Clinic A n= 48	Clinic B = 51	p-value
Mean Age (SD)	45.3 (13.3)	43.4 (16.4)	0.58
Gender			0.99
Female	18	23	
Male	21	27	
Primary Language			<0.01
Spanish	48	0	
English	0	51	
Ethnicity			<0.01
Hispanic	44	4	
Non-Hispanic	4	44	
Race			<0.01
Native American	2	1	

White	1	46	
Hispanic	42	0	
Other	0	2	
Income ($)			<0.01
0-25k	22	13	
26-50k	12	5	
51-75k	0	8	
76-100k	2	19	
>100k	1	3	
Unknown	5	1	
Education			0.06
Less than Junior High	1	2	
Junior High	5	0	
High School	15	12	
College	15	24	
Graduate School	8	13	
Insurance			<0.01
Medicaid	2	7	
Medicare	1	5	
Employer-provided	0	22	
State-Assisted	0	1	
Private	1	8	
Federal	0	1	

Tricare/VA	0	0	
None	42	5	
Smoking			0.02
Never	40 (87%)	36 (71%)	
Former	2 (4%)	12 (24%)	
Current	4 (9%)	3 (6%)	
Alcohol			<0.01
Never	37 (88%)	26 (51%)	
Former	4 (10%)	15 (29%)	
Current	3 (7%)	10 (20%)	

SD, standard deviation; $ = dollars; 25k = 25,000; 50k = 50,000; 75k = 75,000; 100k = 100,000, >100k = >100,000; VA = veterans affairs

Table 2: Social determinants of health as predictors of access to care for sinonasal complaints

Social determinants of health	**Sinonasal symptoms* (n=39)**		**p-value**	**Effect Size (Cohen's w)**	**95% CI (of w)**
	Seen physician (n=18)	Not seen physician (n=21)			
Primary language spoken:			0.03	0.38	(0.10, 0.65)
English	12	6			
Spanish	6	15			
Ethnicity			0.20	0.23	(0.02, 0.53)
Hispanic	7	13			
Non-Hispanic	11	8			

Gender			0.74	0.11	(0.00, 0.45)
Female	9	7			
Male	9	11			
Race			<0.01	0.52	(0.30, 0.78)
Native American	2	0			
White	11	6			
Hispanic	3	13			
Other	0	0			
Income			0.61	0.34	(0.31, 0.66)
0-25k	6	8			
26-50k	3	4			
51-75k	3	2			
76-100k	3	3			
>100k	1	0			
Unknown	0	3			
Education			0.89	0.18	(0.15, 0.56)
Less than Junior High	1	1			
Junior High	1	1			
High School	5	6			
College	8	6			
Graduate School	3	6			
Insurance			<0.01	0.55	(0.37, 0.80)
Medicaid	5	0			
Medicare	0	0			
Employer-provided	4	2			

State-Assisted	0	0			
Private	2	1			
Federal	0	0			
Tricare/VA	0	0			
None	6	17			
Smoking			0.84	0.12	(0.05, 0.46)
Never	14	18			
Former	2	1			
Current	2	2			
Alcohol			0.24	0.23	(0.02, 0.52)
Never	10	15			
Former	4	4			
Current	4	1			

*Defined as presence of any sinonasal symptom as reported on the survey

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