

RESEARCH NOTE

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

Robert Hagedorn BS¹ | Jorgen Sumsion BS¹ | Jeremiah A. Alt MD, PhD¹  |
Amarbir S. Gill MD^{1,2} 

¹Division of Otolaryngology, Head and Neck Surgery, Department of Surgery, University of Utah, Salt Lake City, Utah, USA

²Department of Otolaryngology, Head and Neck Surgery, University of Michigan, Ann Arbor, Michigan, USA

Correspondence

Amarbir S. Gill, MD, University of Michigan Department of Otolaryngology, Head and Neck Surgery, 1500 East Medical Center Drive, 1904 TC, SPC 5312, Ann Arbor, MI 48109, USA.

Email: asingill@med.umich.edu

Funding information

Rural and Underserved Utah Training Experience (RUUTE) program at the University of Utah

KEYWORDS

access to care, healthcare disparities chronic rhinosinusitis, inequity, sinonasal, social determinants of health

1 | INTRODUCTION

Social determinants of health, 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 underrepresent low-income and ethnic minority patients compared with 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 differences,⁴ there is a dearth of prospective literature relating to the differences in patient-provider language in otolaryngology and its impact on access to care. We sought to prospectively analyze the relationship between social determinants of health and access to non-

specialist care to determine whether the primary language spoken was a predictor of access to care.

2 | METHODS

International review board approval (00141714) was obtained from the University of Utah and 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 group⁵ (see Figure S1 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 June 2021 and January, 2022. Clinic A was primarily Spanish-speaking, whereas the majority of patients

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *International Forum of Allergy & Rhinology* published by Wiley Periodicals LLC on behalf of American Academy of Otolaryngic Allergy and American Rhinologic Society.

seeking care at clinic B was 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, were 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; a *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). Effect size and 95% confidence intervals were calculated.

3 | RESULTS

There were no significant differences in age (*p* = 0.58) or sex (*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 with English speakers (*p* < 0.02). English-speaking patients were noted to have significantly more self-reported medical diagnoses than Spanish-speaking patients, including 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, Cohen *w* = 0.09 [95% confidence interval, 0.004–0.29]) (Table 2), English-speaking patients were significantly more likely to have seen a physician for sinonasal symptoms compared with the Spanish-speaking population (*p* = 0.03) (Table 2). Similarly, White patients were more likely to have seen a physician compared with Hispanic and Native American patients (*p* < 0.01). There was no meaningful association between education level (*p* = 0.89), income (*p* = 0.61), or sex (*p* = 0.74) and the likelihood to have seen a physician for sinonasal symptoms (Table 2).

4 | DISCUSSION

Both English- and Spanish-speaking patients demonstrated a similar prevalence of sinonasal symptoms in a nonspecialty setting; however, English-speaking patients were significantly more likely to have seen a physician for their sinonasal symptoms compared with Spanish-speaking patients. There may be several factors that can explain this difference. First, the lack of interpretative

TABLE 1 Demographics of each clinic cohort

	Clinic A (<i>n</i> = 48)	Clinic B (<i>n</i> = 51)	<i>p</i> Value
Mean age (SD) (year)	45.3 (13.3)	43.4 (16.4)	0.58
Sex			0.99
Women	18	23	
Men	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 (US\$)			<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 school	1	2	
Junior high school	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; VA = Veterans Affairs.

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

Social determinants of health	Sinonasal symptoms ^a (n = 39)		p Value	Effect size (Cohen w)	95% CI (of w)
	Seen a physician (n = 18)	Not seen a 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			
Sex			0.74	0.11	0.00–0.45
Women	9	7			
Men	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 (US\$)			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 school	1	1			
Junior high school	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			

 VA = Veterans Affairs. ^aDefined as presence of any sinonasal symptom as reported on the survey.

services for patients who are not native English speakers may result in a breakdown of communication between provider and physician regarding symptoms, diagnosis, and treatment plan.⁷ Second, there may be cultural bias in play. Data have demonstrated that different ethnic groups can have different views on health care 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 in achieving successful referral to specialists for minority patients as a result of 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 the primary language spoken on access to a nonspecialist, in a 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 social determinants of health 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 the 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 because of 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 because of the small sample size and the large number of variables that demonstrated differences among the two cohorts. Future studies should incorporate a larger sample size to further assess the relationship among these factors.

CONFLICT OF INTEREST

Robert Hagedorn: none. Jorgen Sumsion: none. Jeremiah A. Alt: consultant for Medtronic, Optimose, and GlycoMira. Amarbir S. Gill: none.

ORCID

Jeremiah A. Alt MD, PhD  <https://orcid.org/0000-0003-0560-5028>

Amarbir S. Gill MD  <https://orcid.org/0000-0002-6776-0712>

REFERENCES

1. Bergmark RW, Sedaghat AR. Disparities in health in the United States: an overview of the social determinants of health for otolaryngologists. *Laryngoscope Invest Otolaryngol*. 2017;2(4):187-193.
2. Soler ZM, Mace JC, Litvack JR, Smith TL. Chronic rhinosinusitis, race, and ethnicity. *Am J Rhinol Allergy*. 2012;26(2):110-116.
3. Spielman DB, Liebowitz A, Kelebeyev S, et al. Race in rhinology clinical trials: a decade of disparity. *Laryngoscope*. 2021;131(8):1722-1728.
4. Carrasquillo O, Orav EJ, Brennan TA, Burstin HR. Impact of language barriers on patient satisfaction in an emergency department. *J Gen Intern Med*. 1999;14(2):82-87.
5. Beswick DM, Mace JC, Rudmik L, et al. Socioeconomic factors impact quality of life outcomes and olfactory measures in chronic rhinosinusitis. *Int Forum Allergy Rhinol*. 2019;9(3):231-239.
6. Kind AJH, Buckingham WR. Making neighborhood-disadvantage metrics accessible - the neighborhood Atlas. *N Engl J Med*. 2018;378(26):2456-2458.
7. Ruthberg JS, Khan HA, Knusel KD, Rabah NM, Otteson TD. Health disparities in the access and cost of health care for otolaryngologic conditions. *Otolaryngol Head Neck Surg*. 2020;162(4):479-488.
8. Sorkin DH, Ngo-Metzger Q, De Alba I. Racial/ethnic discrimination in health care: impact on perceived quality of care. *J Gen Intern Med*. 2010;25(5):390-396.
9. Samuelson MB, Chandra RK, Turner JH, Russell PT, Francis DO. The relationship between social determinants of health and utilization of tertiary rhinology care. *Am J Rhinol Allergy*. 2017;31(6):376-381.
10. Shen SA, Jafari A, Qualliotine JR, DeConde AS. Socioeconomic and demographic determinants of postoperative outcome after endoscopic sinus surgery. *Laryngoscope*. 2020;130(2):297-302.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Hagedorn R, Sumsion J, Alt JA, Gill AS. Disparities in access to health care: A survey-based, pilot investigation of sinonasal complaints in the community care setting. *Int Forum Allergy Rhinol*. 2023;13:76-79. <https://doi.org/10.1002/alr.23055>