Trends in Pediatric Otolaryngology Disparities Research

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Abstract

Objectives. To describe trends in disparities research within pediatric otolaryngology as evidenced by major meeting presentations and to compare observed trends with those in the realm of patient safety and quality improvement (PSQI).

Study Design. Retrospective review of presentations at national otolaryngology meetings.

Setting. Online review of meeting programs.

Subjects and Methods. Meeting programs from the American Society of Pediatric Otolaryngology, Triological Society, American Academy of Otolaryngology—Head and Neck Surgery Foundation, and Society for Ear, Nose and Throat Advances in Children from 2003 to 2016 were manually searched for pediatric oral and poster presentations addressing disparities and socioeconomic determinants of health, as well as PSQI. Presentation frequency was compared between categories and within each category over time.

Results. Of 11,311 total presentations, 3078 were related to the pediatric population, and 1945 (63.2%) of those were oral presentations. Disparities-related presentations increased from 0 in 2003 to 17 in 2016. From 2003 to 2009, 9 of 656 (1.4%) presentations involved disparities, as opposed to 70 of 2422 (2.9%) from 2010 to 2016 (P = .03). The proportion of presentations regarding PSQI also increased: from 42 of 656 (6.4%) in 2003-2009 to 221 of 2422 (9.1%) in 2010-2016 (P = .01). PSQI presentations remain more common than disparities presentations (9.1% vs 2.9%, P < .001).

Conclusion. Health care disparities are increasingly addressed in pediatric otolaryngology meeting presentations. Compared with the well-established realm of PSQI, disparities research remains nascent but is gaining attention. Health care reform and quality improvement efforts should recognize the role of socioeconomic factors and include strategies for addressing disparities.

Keywords
pediatric otolaryngology, health care disparities, equity, quality improvement, patient safety

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improvement (PSQI). We propose that the frequency of disparities-related presentations relative to PSQI-related presentations reflects our field’s past and current devotion of resources to the issue of disparities and perhaps predicts how this resource allotment may continue to evolve.

Methods

As an analysis limited to publicly available conference programs, this study was exempt from institutional review board approval. Available annual meeting programs from 2003 to 2016 were obtained from the following organizations: the American Academy of Otolaryngology—Head and Neck Surgery Foundation (AAO-HNSF), American Society of Pediatric Otolaryngology (ASPO), the Triological Society, and the Society for Ear, Nose and Throat Advances in Children (SENTAC). The start date of the study period was chosen as 2003 because that was the earliest year for which programs were available online for >1 of these organizations. These 4 meetings were chosen on the basis of their status as national meetings with an emphasis on pediatric otolaryngology. Not all meeting programs for each year were available. Specifically, AAO-HNSF programs were available only for 2012 to 2016. Programs were also unavailable for the 2008 ASPO meeting and the 2003, 2006, 2007, 2012, and 2013 SENTAC meetings. Triological Society programs included annual meetings from 2003 to 2009, then combined section and annual meeting programs from 2010 to 2016.

For each program, notation was made of how many oral or poster presentations explicitly addressing pediatric otolaryngology were related to either (1) health care disparities and socioeconomic determinants of health or (2) PSQI topics. Keywords used to isolate possible disparities-related presentations included the following: disparity, disparities, inequity, access, insurance, race, racial, ethnic, social, and socioeconomic. Possible PSQI presentations were isolated with the following keywords: safety, quality, improvement, cost, value, efficiency, effectiveness, and utility. Keywords were searched via the search function in Acrobat Reader (Adobe Systems Inc, San Jose, California) once the PDF file of each meeting’s program was downloaded. All titles or abstracts isolated through this process were subjected to further review to determine if the presentation did in fact relate to the theme of disparities and/or PSQI. In the absence of available abstracts, this determination was made from the title alone. All titles or abstracts meeting these criteria were categorized under disparities or PSQI or, in some cases, both if disparities and PSQI were jointly addressed. Presentations of all types were considered, including but not limited to brief oral presentations, plenary sessions, lunches with experts, and panel discussions (all of which were included as “oral presentations” in data collection). Presentations were excluded for the following reasons: titles or abstracts that did not appear to address disparities or PSQI regardless of whether keywords were present, those not ostensibly focused on the pediatric population, and those that were duplicates from within the same meeting. The searches and application of inclusion and exclusion criteria were performed by the first and second authors, with discrepancies reconciled by the first author.

Numbers for each year were then tallied and comparisons made between the thematic categories (disparities and PSQI) and within each category over time. Descriptive statistics were performed with Excel 2011. Comparisons of proportions were made with Fisher’s exact test (Social Science Statistics online calculator). For comparisons within groups over time, the study period was split into two 7-year halves (2003-2009 and 2010-2016). Because the first half (2003-2009) did not include any AAO-HNSF data, a separate comparative analysis was performed with the AAO-HNSF data excluded altogether. During descriptive analysis, notation was also made of whether “oral presentations” included longer-duration formats, such as plenary sessions or panel discussions, with these formats being indicative of increased attention to that topic in the overall meeting program.

To supplement the data from major meeting presentations, an analysis was performed of the frequency of articles (original or review) related to health care disparities in pediatric otolaryngology published over the same period (2003-2016) to determine if any similar trends existed in the literature.

Results

A total of 11,311 unique presentations were screened, of which 3078 were pediatric. Of the pediatric presentations, 1945 (63.2%) were oral and the remainder posters. Of all pediatric presentations, 79 (2.6%) were related to health care disparities and 263 (8.5%) to PSQI. Of the 79 disparities-related presentations, 24 were also included in the PSQI category due to overlapping themes (representing 30.3% of disparities and 9.1% of PSQI presentations).

Figure 1 illustrates the percentage of presentations each year as related to disparities, PSQI, or both. From 2003 to 2016, disparities-related presentations increased from 0 of 57 to 17 of 594 (2.9%), and PSQI presentations increased from 3 (5.3%) to 52 (8.8%). When the 14-year study period was split into two 7-year halves (2003-2009 and 2010-2016), disparities-related presentations increased from 9 of 656 (1.4%; 95% CI, 0.6%-2.6%) in the earlier half to 70 of 2422 (2.9%; 95% CI, 2.3%-3.6%) in the later half (P = .03), whereas PSQI-related presentations increased from 42 (6.4%; 95% CI, 4.7%-8.6%) to 221 (9.1%; 95% CI, 8.0%-10.3%; P = .01). PSQI presentations were more frequent than disparities presentations in both halves of the study period (P < .001 for both comparisons; Tables 1 and 2). With AAO-HNSF data excluded, there were even larger differences within each category over time, with disparities presentations increasing from 9 of 656 (1.4%; 95% CI, 0.6%-2.6%) to 61 of 1737 (3.6%; 95% CI, 2.7%-4.5%; P = .004) and PSQI presentations increasing from 42 (6.4%; 95% CI, 4.7%-8.6%) to 182 (10.5%; 95% CI, 9.1%-12.0%; P = .002). Differences between the categories remained highly significant (P < .001; Table 3).
Also noted were increased meeting duration and attention afforded to PSQI over time. Starting in 2009, keynote addresses at each ASPO meeting were related to PSQI. In 2014, the AAO-HNSF meeting program began including a separate category for all PSQI-related presentations. Although occurring after the study period, the theme of the entire 2017 ASPO meeting was quality improvement. No similar trend in program design and structure was documented for disparities-related presentations, though it is worth noting that one of the learning objectives of the 2016 Triological Society annual meeting included identifying “opportunities to provide care to the underserved minority and pediatric populations.”

The analysis of published literature showed that 31 pediatric disparities-related articles were published in 5 otolaryngology journals (Laryngoscope, Otolaryngology–Head and Neck Surgery, JAMA Otolaryngology–Head and Neck Surgery / Archives of Otolaryngology–Head and Neck Surgery, International Journal of Pediatric Otorhinolaryngology, Ear and Hearing) over the same 2003-2016 period. Of the 31, 5 were published from 2003 to 2009 and 26 from 2010 to 2016. Given the total numbers of 3977 and 4841 pediatric articles published in those journals over these respective periods, the comparative rates of disparities-related articles were 1.3 (95% CI, 0.5-3.2) per 1000 from 2003 to 2009 and 5.4 (95% CI, 3.6-8.0) per 1000 from 2010 to 2016 (P < .001).

Of 61 articles related to disparities in pediatric otolaryngology published at any time and in any journal, 39 (63.9%) were published from 2010 or later.

**Discussion**

There is ample evidence in the health science literature in general and the otolaryngology literature in particular demonstrating the widespread effects of disparities related to race, ethnicity, socioeconomic status, and insurance on the delivery and outcomes of care.1-8 Historically, pediatric otolaryngology has not devoted significant resources to investigating these issues, although interest appears to be increasing. This study is the first to quantitatively explore this suspected trend.

Our data reveal a true increase in the frequency of disparities-related presentations in recent years. As seen in **Table 1**, within the first half of the study period, there were multiple years with no presentations related to health care disparities or socioeconomic determinants of health. However, in the second half of the study period, each year included at least 2 such presentations, with that number reaching at least 17 in each of the last 2 years. This marked increase from the first to the second half of the study period was even more pronounced with AAO-HNSF data excluded (Table 3). It is impossible to predict if or to what extent this trend will continue. However, observations of the trend in PSQI-related research suggest that, should such attention continue to increase, there may be not only a persistent rise in the quantity of disparities-related presentations but also a shift in the type and duration of meeting time devoted to the topic.

This increase in meeting presentations related to disparities has been mirrored by a similar increase in the literature. Our analysis of published studies demonstrated a marked
increase in articles focusing on disparities during the second half (2010-2016) versus the first half (2003-2009) of the study period. In fact, nearly two-thirds of all articles related to disparities in pediatric otolaryngology were published in 2010 or later. These trends in presentations and published manuscripts are indicative of likely continued research efforts within the field.

Our findings also demonstrate that PSQI-related presentations remain significantly more common than those focused on disparities. This quantitative difference is matched by a difference in the type and duration of presentations. In recent years, PSQI topics have accounted for an increasing numbers of plenary sessions, panel discussions, or even central themes in national meetings. This increased PSQI focus is reflective of growing institutional and departmental emphases on patient safety and quality. Indeed, at an educational level, quality improvement projects have become a required component of otolaryngology residency and fellowship training.  

This robust growth in PSQI efforts likely contributes in part to the increase in disparities-related research over time, given the interplay between these topics. For example, in its landmark 2001 report Crossing the Quality Chasm: A New Health System for the 21st Century, the Institute of Medicine identified health equity as 1 of 6 aims for achieving higher-quality health care. Similarly, since 2003, the Agency for Healthcare Research and Quality has regularly produced the National Healthcare Quality and Disparities Report to describe deficiencies in quality of and access to care for various groups and to track national progress in addressing those deficiencies. While explicit recognition of the relationship between health equity and PSQI within pediatric otolaryngology has been minimal to date, one could predict that if attention to both fields of interest continues to increase, the relationship between them may be further appreciated as well.

The limitations of this study deserve mention. First, we readily recognize that the frequency of presentations at meetings is not an exact proxy of research direction within the field. It fails to account for the quality of the subject presented, the extent to which disparities or PSQI was the primary focus of the study, research efforts that manifest only in the published literature, and certainly any pending work not yet presented. We attempted to address these shortcomings by supplementing the examination of presentation frequency with a subjective analysis of the types of presentations, as well as an analysis of the published literature on the topic. Another limitation lies in the somewhat arbitrary process of assigning presentations to the disparities and PSQI categories. Admittedly, there can be overlap between these areas, and certain presentations did fall into both categories. These were, however, the minority of presentations and serve to underscore the point discussed earlier: that these 2 themes are intertwined. Finally, given the nature of the study, the results were limited by available information in meeting materials. Certain programs were absent; others offered only presentation titles without abstracts; and several less-well-attended meetings were not included in the analysis. The analysis of the literature additionally excluded article types such as editorials and letters to the editor, which may have shed light on research emphases in the field. This limitation in available data likely decreased the yield of results in the disparities and PSQI categories, with no reason to conclude that it would have skewed the comparative results.

Despite these limitations, this unique analysis does provide quantitative insight into research efforts within pediatric otolaryngology regarding health care disparities and how those relate to the more recognized and established trends occurring in the realm of PSQI. Otolaryngologists would do well to recognize the interplay between these areas and the importance of promoting health equity to maximally improve the quality of care.

**Conclusion**

Health care disparities are increasingly addressed in pediatric otolaryngology meeting presentations and publications. Compared with the already established realm of PSQI, disparities research remains nascent but is gaining increasing attention. Health care reform and quality improvement efforts within pediatric otolaryngology should recognize the role of socioeconomic factors and include strategies for addressing disparities.

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**Author Contributions**

Jad Jabbour, concept/design, data analysis, manuscript drafting and revision, final approval, agreement to be accountable; Karl W. Doerfer, concept/design, data gathering, manuscript drafting and revision, final approval, agreement to be accountable; Thomas Robey, concept/design, data interpretation, manuscript revision, final approval, agreement to be accountable; Michael J. Cunningham, concept/design, data interpretation, manuscript revision, final approval, agreement to be accountable.

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**Table 3. Comparisons of Presentation Frequencies between Categories and within Each Category over Time: AAO-HNSF Data Excluded.**

<table>
<thead>
<tr>
<th>Study Period</th>
<th>Disparities</th>
<th>PSQI</th>
<th>P Value</th>
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<tbody>
<tr>
<td>2003-2009 (n = 656)</td>
<td>9 (1.4; 0.6-2.6)</td>
<td>42 (6.4; 4.7-8.6)</td>
<td>&lt;.001</td>
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<tr>
<td>2010-2016 (n = 1737)</td>
<td>61 (3.6; 2.7-4.5)</td>
<td>182 (10.5; 9.1-12.0)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

P value: .004 .002

Abbreviations: AAO-HNSF, American Academy of Otolaryngology—Head and Neck Surgery Foundation; PSQI, patient safety and quality improvement.

*Bold indicates significance, P < .05.*
Disclosures

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References


