Concordance of Patient-Reported Resonance Outcomes with Speech Language Pathologist Evaluation

Emma H. Neal, PhD[1], Hannah Kay, MD[2], Heidi Chen, PhD[3], and James Phillips, MD[4]
[1]Vanderbilt University School of Medicine [2]University of Michigan Department of Otolaryngology
[3]Surgical Outcomes Center for Kids (SOCKs)
[4]Vanderbilt University Medical Center Department of Otolaryngology

VANDERBILT School *of* Medicine

BACKGROUND

- Velopharyngeal dysfunction in pediatric patients has previously been shown to significantly impact patient quality-of-life.[1]
- The Pediatric Voice-Related Quality-of-Life Survey (PVRQOL) is a validated tool to assess quality-of-life in pediatric patients.[2]
- **Purpose:** To assess the concordance of patient-reported speech and quality-of-life outcomes with speech language pathologist evaluation.

METHODS

Pediatric Voice-Related Quality-of-Life surveys were administered to 70 pediatric patients with a history of cleft lip/palate repair at a tertiary, academic practice between 6/2020 and 3/2021.

PVRQOL responses for patients undergoing same-day speech language pathologist evaluation were further analyzed.

Resonance quality as clinically assessed by speech language pathologists was recorded.

Data were analyzed by Pearson's chi-squared test and Student's t-test with statistical significance set *a priori* at $p<0.05$.

RESULTS

Table 1. Demographics

	N	
Sex assigned at birth	33	
Male		64% (21)
Female		36% (12)
Age at time of original cleft lip/palate repair (months)	31*	16 ± 18
Age at time of survey (years)	33	5.3 ± 3.0
Time elapsed between original repair and survey administration (months)	31*	43 ± 34

N = Number of clinical encounters meeting inclusion criteria
Data represented as proportion of patients (%) or $\bar{X} \pm SD$.
*2 patients with unknown dates of original repair.

Table 2. Speech Language Pathologist speech characterization

	N	All (N=33)
Broadly normal resonance	20	61%
Altered resonance	13	39%
Mild/minimal hyperresonance	6	18%
Moderate hyperresonance	2	6%
Severe hyperresonance	0	0%
Hyperresonance not further characterized	2	6%
Hyponasality	1	3%
Resonance not characterized	2	6%

Table 3. PVRQOL Survey Result

Question	Average score
1. My child has trouble speaking loudly or being heard in noisy situations. (N = 33)	1.8 ± 1.1
2. My child runs out of air and needs to take frequent breaths when talking. (N= 32)	1.6 ± 1.1
3. My child sometimes does not know what will come out when he or she begins speaking. (N=31)	1.45 ± 0.93
4. My child is sometimes anxious or frustrated (because of his or her voice). (N=33)	1.8 ± 1.0
5. My child sometimes gets depressed (because of his or her voice). (N=33)	1.39 ± 0.75
6. My child has trouble using the telephone or speaking with friends in person. (N=32)	1.59 ± 0.87
7. My child has trouble doing his or her job or schoolwork (because of his or her voice). (N=26)	1.42 ± 0.86
8. My child avoids going out socially (because of his or her voice). (N=28)	1.3 ± 0.6
9. My child has to repeat himself or herself to be understood. (N=32)	2.5 ± 1.0
10. My child has become less outgoing (because of his or her voice). (N=32)	1.25 ± 0.67

PVRQOL Scoring		
	1 = None, not a problem	4 = A lot
	2 = A small amount	5 = Problem is "as bad as it can be"
	3 = A moderate amount	6 = Not applicable

RESULTS

Figure 1. PVRQOL Response Score Distribution

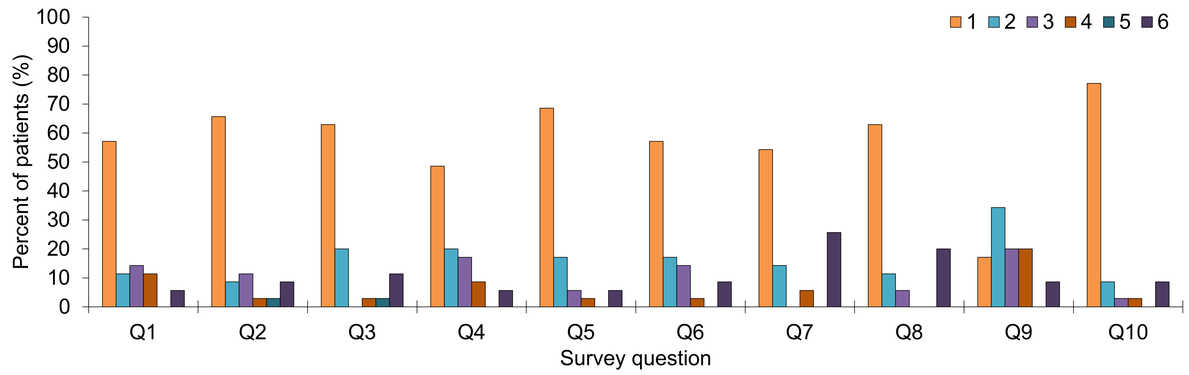

Table 4. PVRQOL compiled score outcomes

	Score
Physical-functional score	45 ± 14
Social-emotional score	33.9 ± 7.3
Total adjusted score	85 ± 16

No statistically significant difference (p=0.78) was detected in average PVRQOL scores between patients with broadly normal resonance and patients with altered resonance.

Table 5. Impact of co-existing articulation disorders on PVRQOL scores

	Co-existing articulation disorder		
Resonance quality	(-)	(+)	Combined
Broadly normal	90 ± 13 (N = 13)	73 ± 19 (N = 7)	84 ± 17 (N= 20)
Altered	90 ± 8 (N = 11)	61 ± 4 (N = 2)	85 ± 13 (N= 13)
			χ^2 = 1.5, P = 0.22

N = number of clinical encounters meeting inclusion criteria
Data represented as $\bar{X} \pm SD$.

Table 6. Impact of co-existing articulation disorders on PVRQOL outcomes in patients with broadly normal resonance

	Co-existing articulation disorder	
Total adjusted score	(-)	(+)
≥ 80	85% (N = 11)	57% (N = 4)
< 80	15% (N = 2)	43% (N = 3)
		χ^2 = 1.8, P = 0.18

N = number of clinical encounters meeting inclusion criteria

CONCLUSIONS

- Caregivers reported high quality-of-life scores in patients with broadly normal resonance and with altered resonance.
- Presence of a co-existing articulation disorder did not significantly impact reported quality-of-life scores.
- Limitations of current study: small sample size

FUTURE DIRECTIONS

- Increasing size of cohort to better assess impact of concurrent articulation disorders
- Assessing changes in reported quality-of-life scores before and after surgical interventions for velopharyngeal insufficiency.

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