

Speech Disorders of Individuals According to the Type of Cleft

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The incidence and the relative frequency of various speech disorders in a large sampling of individuals with clefts have been reported by the present authors (8). For that survey, the speech evaluation data obtained from persons with all types of clefts, persons classified as having functionally insufficient palates without structural cleft, and those with other types of labial and palatal anomalies were combined.

The sampling procedure of this sort is questionable. Furthermore, some evidences have been provided that these individuals constitute a non-homogenous population (5), and that the speech skills of individuals with various types of clefts may differ (6, 7), while others find no significant difference in communication abilities among the subgroups of the cleft population (2, 4). Therefore, the present authors have reanalyzed the above mentioned data to determine the incidence of speech disorders occurring in persons with the same types of clefts.

Procedure

The speech of 1061 persons was evaluated at the Lancaster Cleft Palate Clinic by one of the authors (R.T.M.). These persons were of various ages and at various stages of therapy for their cleft and speech. The information included in this survey was obtained at the time of diagnostic evaluation at the Clinic. Articulation defects, nasality, articulation defects plus nasality, voice disorders other than nasality, stuttering, cluttering, delayed speech, cerebral palsy, and disorders associated with bilingualism were the diagnostic categories used. Persons exhibiting adequate speech in the opinion of the examiner were also included. The Veau system of classification of clefts was used along with two additional classifications: palatal insufficiency (PI) and miscellaneous. The PI group consisted of persons with functional velopharyngeal incompetency without apparent structural cleft. The miscellaneous classification in-

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TABLE 1. Distribution of subjects by categories of speech disorders for each classification of clefts. The Veau classification of clefts was used with palatal insufficiency and miscellaneous used as additional classes.

category (speech disorders)	classification (type of clefts)												total	
	I		II		III		IV		P.I.*		misc.			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
articulation defect and nasality	26	30.9	86	29.7	94	26.0	54	26.0	32	38.5	1	2.8	293	27.6
nasality	25	29.8	58	20.1	76	21.0	34	16.3	31	37.3	4	11.4	228	21.5
articulation	7	8.3	47	16.3	61	16.8	48	23.1	8	9.6	3	8.6	174	16.4
delayed speech	1	1.2	5	1.7	3	.8	3	1.4	0	0	0	0	12	1.1
voice disorders	1	1.2	2	.7	1	.3	2	1.0	0	0	0	0	6	.6
stuttering	0	0	1	.3	3	.8	0	0	0	0	0	0	4	.4
cerebral palsy	0	0	1	.3	1	.3	1	.5	0	0	0	0	3	.3
bilingualism	0	0	0	0	3	.8	0	0	0	0	0	0	3	.3
cluttering	0	0	0	0	1	.3	1	.5	0	0	0	0	2	.2
adequate speech	24	28.6	89	30.8	119	32.9	65	31.3	12	14.4	27	77.1	336	21.7
total	84		289		362		208		83		35		1061	

* P.I.: Palatal Insufficiency

cluded various types of labial and palatal anomalies such as cleft lip only, high-arched palate, and combination of cleft lip with bifid uvula.

Results and Discussion

Table 1 shows the distribution of the 1061 subjects by classification types and by speech categories. Each classification type was considered a single population. The percentage of subjects within each classification whose speech was diagnosed as being within the categories used was calculated and is also presented in this table.

Of the speech disorders found within each classification, the combination of articulation defects with nasality showed the highest percentage of occurrence in Types I, II, III, IV, and PI. The subjects in the miscellaneous group exhibited a higher percentage of nasality alone. Nasality was the second most common disorder found for subjects classified as Types I, II, III, and PI. Persons of the Type IV group had a higher percentage in the articulation defects' category than nasality, and articulation defects was also second highest for the miscellaneous group. Delayed speech was found to be concentrated in Types I, II, III, and IV, as were voice disorders. However, the number of subjects within these categories was small. The categories of stuttering, cerebral palsy, bilingualism, and cluttering, also contained so few subjects that the classification seemed of little value, though the overall incidences are not significantly different from that of the general population (1). The highest percentage in the adequate speech category occurred in the miscellaneous group, due partly to the inclusion of cases with cleft lip alone within this group.

This was followed by Types III, IV, II, and I, respectively. The group exhibiting the lowest percentage of adequate speech was that containing persons diagnosed as having palatal insufficiency. This is of particular interest since the apparent anatomical defect is the least in this population (4).

Comparisons of the present data to the total distribution of subjects by speech disorders, as presented in the last column of Table 1, show similar distributions for classifications II and III. The percentages were approximately the same for the categories of articulation defects plus nasality, nasality alone, articulation defects alone, and adequate speech. This similarity may be due, in part, to the fact that these two categories contain the largest number of subjects in the total sample. Type I and PI classes had a higher percentage of incidence in articulation defects plus nasality and nasality alone and a lower percentage of incidence of articulation defects. Percentage of subjects with adequate speech was essentially the same for Type I when compared to the total cleft population. However this category was considerably lower for the PI group. A greater percentage of articulation defects was found for Type IV while the other major categories were similar to the overall sample.

These data suggest that persons classified as having clefts of Type II and III are similar in speech. On the other hand subjects falling into other categories may be considered as non-homogenous groups with regard to speech within the total cleft population.

Comments

Inferences about the representativeness of these data to the overall cleft lip and palate population must be made with care. Subjects who were available for study were seeking or receiving treatment at a treatment center. This survey, therefore, excludes a sample of those persons who do not seek or receive help.

An additional bias is that no information is available about the structural adequacy of the subjects. Again, presumably many of these subjects were seeking treatment because of structural problems involving the palate. Speech problems demonstrated by such subjects would be higher in frequency and different in nature than for the normal population or even for other subgroups of the cleft palate population.

Summary

Speech evaluation records of 1061 persons examined at the Lancaster Cleft Palate Clinic were surveyed. The occurrence of speech disorders within the different conditions of clefts was determined. It was noted that those with Type II and III clefts had similar distribution of speech disorders as compared to the total cleft subjects. Type IV cleft cases

tended to have more of the articulation problem, while Type I and palatal insufficiency cases were associated with more of the nasality problem.

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Acknowledgments. The authors wish to express their appreciation to Dr. Herbert K. Cooper and the staff of the Lancaster Cleft Palate Clinic for permitting the survey of their case records, and to Drs. James F. Kavanagh and Charles I. Berlin for previewing this manuscript.

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