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Interdisciplinary Craniofacial Teams Compared With Individual Providers: Is Orofacial Cleft Care More Comprehensive and Do Parents Perceive Better Outcomes?

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Abstract

Objective—The primary objective was to examine whether children with orofacial clefts received more comprehensive care and whether their parents perceived better outcomes if the care was delivered by interdisciplinary teams compared with individual providers.

Design—Data about services received and outcomes were collected from mothers of children with orofacial clefts.

Participants—Mothers of children born between 1998 and 2003 with orofacial clefts from Arkansas, Iowa, and New York who participated in the National Birth Defects Prevention Study were eligible.

Main Outcome Measure(s)—Services and treatments received and maternal perception of cleft care, health status, aesthetics, and speech were evaluated by team care status.

Results—Of 253 children, 24% were not receiving team care. Of those with cleft lip and palate, 86% were enrolled in team care. Compared with children with team care, those without had fewer surgeries and were less likely to have seen a dentist, received a hearing test, or had a genetic consultation. Mothers of children lacking team care were twice as likely to give lower ratings for overall cleft care; maternal perceptions of global health, facial appearance, and speech did not differ by team care status.

Conclusions—Recommended care tended to be received more often among those with team care. A larger, longitudinal study might answer questions about whether team care provides the best care and the role that type and severity of the condition and racial/ethnic differences play in the services received and outcomes experienced.

Keywords

interdisciplinary team care; orofacial clefts; outcomes; parental perception; services

With the release of the 1987 report on children with special health care needs, the U.S. Surgeon General initiated a campaign to improve care of those children with a focus on commitment to “family-centered community-based coordinated care” (U.S. Bureau of Health Care Delivery and Assistance, U.S. Public Health Service Office of the Surgeon General 1987, p. 7). In response to directives in the report, the American Cleft Palate–Craniofacial Association (ACPA) brought together professionals experienced in the diagnosis and medical care of craniofacial birth anomalies to develop recommendations for care of children with such conditions (ACPA, 1993). The fundamental principle of these recommendations was management of patients by interdisciplinary teams of specialists who maintain clinical expertise in caring for patients with craniofacial anomalies. In particular, the ACPA recommended that the interdisciplinary team be responsible for providing care or making appropriate referrals for audiologic and otolaryngologic care, surgical intervention, dental care, speech-language pathology services, genetic evaluations and counseling, psychological and social services, nursing care, and pediatric care (ACPA, 1993).

In addition to the campaign initiated by the Surgeon General’s office, the Oral Health component of *Healthy People 2010* (U.S. Department of Health and Human Services, 2000) charged states to have a system in place for identifying, recording, and referring children with a cleft lip, cleft palate, or other craniofacial anomalies to interdisciplinary craniofacial teams immediately after birth. *Healthy People 2010* indicated that as of 1997, only 23 states and the District of Columbia had systems for recording and referring affected children (U.S. Department of Health and Human Services, 2000).

Measuring referral patterns and assessing the appropriateness of the care received is a difficult undertaking. Over the years, the ACPA has developed standards deemed essential in providing adequate care for affected children. Teams voluntarily provide self-assessments based on the ACPA standards; the ACPA, in turn, maintains referral information about these teams that is provided to the public. In 1998, the ACPA reported on the information that it

collected as the first comprehensive overview of the organization, as well as the function and makeup of cleft palate and craniofacial teams in North America. Its findings indicated large differences in patient load and surgical activity between teams, which raised concerns about distribution of teams, experience of team members in caring for affected children, and whether experience of teams can be translated into quality of care. The authors concluded that further study of craniofacial care delivery services in North America was warranted (Strauss and ACPA Team Standards Committee, 1998).

The research described herein was part of a multifaceted project conducted in three states, Arkansas (AR), Iowa (IA), and New York (NY), to investigate both the health care services provided to children affected by selected craniofacial anomalies and the quality-of-life outcome measures of these children. The specific aim of the current study was to examine whether there were differences in the comprehensiveness of the care and health outcomes for children with orofacial clefts who were being cared for by craniofacial teams (henceforth referred to as *team care*) compared with those who received care from individual providers.

Methods

Study Population

Subjects for the current study were children identified for the National Birth Defects Prevention Study (NBDPS) as having been born with a cleft lip (CL), cleft palate (CP), or a cleft lip and palate (CLP) in AR, IA, or NY. The NBDPS is a population-based case-control study designed to investigate environmental and genetic factors that may be associated with one or more of over 30 major structural birth defects. Eligibility criteria and detailed methods used for identification and recruitment for the NBDPS have been described in previous work (Yoon et al., 2001; Rasmussen et al., 2003). Additional eligibility criteria for the current study included the following: The child was born on or after January 1, 1998, and on or before December 31, 2003, in IA or NY, or from January 1, 1999, through December 31, 2002, in AR (due to AR's late start with the project); the child resided with his or her birth mother in AR, IA, or NY at the time of the interview; the birth mother had interviewed for the NBDPS (with the exception of those whose children were born in 2003 in NY when funding was temporarily discontinued); and the child did not also have microtia or craniosynostosis, which were the other craniofacial anomalies targeted for this interview.

Telephone interviews were conducted in 2005 and 2006. Institutional review boards of the University of Arkansas for Medical Sciences, The University of Iowa, and the New York State Department of Health gave human subjects approval for the study protocol and informed consent was obtained from participating mothers.

Survey Instrument and Measurement Variables

Staff at The University of Iowa Public Health Policy Center developed the interview items with consultation from experts in treating craniofacial conditions and collaborators from the Iowa Registry for Congenital and Inherited Disorders, the New York State Department of Health Congenital Malformations Registry, and the National Foundation for Facial Reconstruction. Items included questions about the support and information parents received

at diagnosis, surgical care, health conditions to classify a child as one with special health care needs (Bethell et al., 2002), and overall health and functional health status of the child. Additionally, because access to ancillary services is particularly important to the well-being of children with orofacial clefts, information was collected about care the child received, including speech therapy, hearing tests, dental care, genetic consultation, psychological and social services, and primary care.

Each mother who agreed to participate was asked whether she believed that her child was currently being cared for by a cleft team, which was described in the interview as “an organized cleft care team made up of at least a surgeon, a dental professional, and a speech professional.” The mother’s response was used to define the primary independent variable for all analyses reported: not receiving team care versus receiving team care.

Maternal responses to interview items (Appendix 1) for global rating of cleft care, rating of overall health, satisfaction with the child’s appearance, and assessment of the child’s speech constituted the study outcomes. Prior to analysis, dichotomous measures were created for each outcome. Maternal ratings of quality of all cleft care that their children received ranged from 0 (worst care possible) to 10 (best care possible); scores from 0 to 7 were assigned a *lower* rating of cleft care and scores of 8 to 10 was assigned a *higher* rating. A dichotomous measure of the children’s overall health was created that grouped maternal responses of poor, fair, or good responses as *less than very good* and responses of very good or excellent as *very good or excellent*. Similarly, maternal responses for satisfaction with their children’s facial appearance were dichotomized as *less than very happy* (not at all happy, somewhat happy, or moderately happy) or *very happy*. To evaluate speech, mothers were asked to respond to a series of five questions relating to how often their children had difficulties being understood when they spoke. The responses to the five questions were found to be statistically correlated (Cronbach α ; p value = .90). Speech assessment, for children aged 3 to 7, was defined as *ever* having trouble being understood (response to at least one question was sometimes, usually, or always) versus *never* having trouble being understood (response to each question was never).

Statistical Analysis

Descriptive analysis was performed to examine the demographic characteristics of children and mothers and to evaluate differences in use of ancillary services between children receiving and not receiving team care. The Pearson chi-square or, where appropriate, the Fisher exact test, was calculated to test for statistically significant differences between the two groups at $\alpha = .05$. Bivariate analyses were performed to assess covariates for potential effect modification and confounding prior to conducting multivariate analysis. Log binomial multivariate regression was used to examine the association of team care with global rating of cleft care, rating of overall health, satisfaction with the child’s appearance, and assessment of the child’s speech. Potential confounders, identified with a 10% or more change in the point estimate of the primary independent variable (no team care) using backward-stepwise model building, remained in the adjusted model. Crude and adjusted prevalence ratios (PR) with corresponding 95% confidence intervals (CI) were reported. The

variable describing type of cleft (CL, CP, or CLP) was forced to remain in all models. All statistical analyses were performed using SAS version 9.1 (SAS Institute Inc., Cary, NC).

Results

Of the 582 children identified in the three states, 519 (89.2%) were eligible for inclusion and 253 (48.7%) mothers completed telephone interviews. Analyses of NBDPS data gathered at the time of each child's birth showed that respondents tended to have more years of education beyond high school and were slightly older than nonrespondents were. No meaningful differences were noted with regard to maternal race/ethnicity or child sex (data not shown).

Overall, nearly one quarter (24%) of mothers indicated that their child was not receiving team care at the time of the interview. Comparisons of selected characteristics stratified by team care status showed no statistically significant differences except for type of cleft; almost one half of those who received team care had CLP; whereas, only one quarter of those without team care had CLP (Table 1). Furthermore, of 109 children with CLP, 94 (86%) were receiving team care. When asked about severity of the cleft condition, 58% of mothers whose children received team care rated the cleft as moderate or very severe, compared with 33% of mothers whose children did not receive team care ($p = .003$, $df = 2$; data not shown).

Services and treatments received tended to differ by use of team care (Table 2). Compared with children with team care, those without team care had fewer surgeries (excluding myringotomies). However, no differences among those with or without team care were found when controlling for type of cleft. Children without team care were less likely to have received noncleft-related medical care in the previous year, particularly those classified as having special health care needs. In addition, these children were less likely to have had a hearing test in the 12 months prior to the interview, to have ever visited a dentist, and to have received any genetic counseling since the orofacial cleft was diagnosed. Overall, the number of mothers who reported that their child had unmet health care needs in the 12 months prior to the interview was small, and differences between mothers of children with and without team care were imprecise due to the small number of responses. However, a marginal difference ($p = .06$, $df = 1$) was found for speech therapy; 18% of children without team care compared with 9% receiving team care reported unmet need (data not shown).

The distributions of maternal perception for selected outcomes by team care status are presented in Table 3. Overall, more than three quarters of all mothers rated cleft care, child's health, and happiness with facial appearance positively, regardless of team care status. The effect that lacking team care had on negative maternal ratings is displayed in Table 4, where crude and adjusted PR of maternal responses (with 95% CI) were calculated for the outcomes comparing children without team care with children receiving team care. Mothers of children without team care were twice as likely to rate the overall cleft care received with lower scores (0 through 7), and the PR was marginally statistically nonsignificant (PR = 2.25; 95% CI: 0.99–5.12) after controlling for type of cleft, severity of condition, state of residence, and child age, dental care, and unmet need for speech therapy. Lacking team care

appeared to have little effect on maternal perception of a child's global health, maternal satisfaction with a child's appearance, or the child's ability to be understood when speaking as determined by weakly elevated, nonsignificant adjusted PRs (Table 4).

Discussion

The ACPA and others have advocated that children with orofacial clefts are best managed by interdisciplinary or multidisciplinary teams that oversee and coordinate medical care (Kaufman, 1991; ACPA, 1993; Mitchell and Wood, 2000; Thomas, 2000; Nackashi et al., 2002). Little is known regarding whether team care provides the most comprehensive medical services or the best outcomes. Incidentally, at the time the current data were being collected, experts acknowledged a gap in our understanding of the quality and consistency of medical care of these children and listed this as a priority topic for future public health research related to orofacial clefts (Yazdy et al., 2007). This current study begins to address these gaps and provides some insight into this priority topic.

Much of the literature suggests that team care provides the best approach to treatment of children with orofacial clefts, so it is somewhat surprising that nearly one quarter of the current study population, aged 2 to 7 years, were not enrolled in team care. Those who received team care were more likely to have had CLP; this parallels findings in Florida for children with contact with state-affiliated craniofacial centers (Williams et al., 2003).

The ACPA, among others, recommends age-specific care for children with orofacial clefts. Specifically, ACPA recommends otolaryngologic care within the first 6 months of life through adolescence and audiologic care within the first 3 months of life with continued evaluation as determined by the child's history of ear disease and hearing loss (ACPA, 1993). Others stress that audiologic and otolaryngologic care should not lose priority (Kaufman, 1991; Mitchell and Wood, 2000), and hearing should be evaluated annually due to the important interplay with speech and language development during childhood (Thomas, 2000). In this study, children without team care were less likely to have had a hearing test in the 12 months prior to the interview; however, only four mothers, all in the team care group, reported an unmet need for hearing tests. It was difficult to determine whether these children did not need the hearing tests or the families were not aware of recommendations.

Recommendations for timing of speech-language evaluations depend largely on the type of cleft, a child's development, surgeries, and dental involvement. The ACPA recommends speech-language evaluations for children with CP or CLP annually until age 4 and, where problems are detected, continual assessments. Referral to speech-language therapy should be made for any child when speech and language skills are not age-appropriate or if speech patterns are deviant (ACPA, 1993). In the current study, no differences were noted for speech therapy between children with and without team care; although, those without team care were slightly more likely to report speech therapy as an unmet need.

Inclusion of a dental professional was part of the definition of team care for the current study. The ACPA (1993) stresses that dental services are important for primary care of the

orofacial cleft patient. Others recognize the importance of regular dental appointments (Kaufman, 1991; Mitchell and Wood, 2000; Nackashi et al., 2002) and recommend semiannual dental visits beginning at age 2 or 3 years (Thomas, 2000). Consistent with the recommendations, this study showed that dental visits were more likely for children with team care.

Genetic counseling is considered important to advise the families of the diagnosis, prognosis, possibilities of associated anomalies, and recurrence prevention (Kaufman, 1991; ACPA, 1993). Although those without team care were at a distinct disadvantage regarding genetic counseling services and several reported unmet need, fewer than one half of all mothers reported any genetic counseling since the orofacial diagnosis. It is unknown whether families did not receive genetic counseling because they were not referred or because they were offered services but declined to meet with a counselor.

Psychological and social services are also an important component of the care of children with clefts and their families. Support of the family may begin at diagnosis or birth, and the need for psychological services for the patient or family might exist throughout the child's life (ACPA, 1993; Mitchell and Wood, 2000; Thomas, 2000). No differences by team care status were found for maternal satisfaction with information and support received at the time of diagnosis (not shown); however, team care status was determined at the time of interview and did not necessarily reflect team intervention at the time of diagnosis. Also, very few children in this study received emotional or behavioral care or help with learning problems, yet only a few mothers reported unmet need. Most of these reports were for children under 5 years of age; future inquiries as these children grow, develop, and interact with other children might yield different results.

Several limitations need to be considered in interpreting these study findings. First, team care defined as the child's current status might have produced some misclassification. For example, a child who was not receiving team care at the time of the interview but had received such care in the past was classified as having no team care. Given the age of the children in the study (2 to 7 years), current team care status would be very important due to several age-specific care recommendations for these children. Additionally, the question that defined team care may be less inclusive than proponents of interdisciplinary teams would like; however, the definition is consistent with the core disciplines suggested in the ACPA Parameters of Care (ACPA, 1993).

Although combining data for three states may provide greater power to detect overall differences by team care status, important team characteristics such as patient volume and staff experience that may affect quality of care and services provided were not measured. The ideal is that the children with clefts are treated the same without regard to the state of residence or the team attended. Team care status did not differ statistically by state of residence. However, in AR, one team provided care for 94% of that state's children in this study; in IA, two teams cared for 86% of the children; and in NY, three teams cared for 68% of the children in the study. More teams do not necessarily translate to more children receiving team care, as seen in NY where more teams were available and attended but also where the highest percentage of children among those without team care lived.

The dichotomous outcomes created for analysis were based on distribution of maternal response and considered best to meaningfully describe the responses, but it is possible that categorization of the outcomes as defined masked results. After these reported estimates were found, analyses using alternative cut points were considered; for example, for global health, ratings of *poor*, *fair*, *good*, and *very good* were compared with *excellent*. However, alternative classifications did not yield different results. Maternal response to qualitative measures may not be ideal for measuring team care effects on these outcomes. Frequently, parental perception is used to predict potential for self-perception and psychological issues for these children due to facial appearance or speech problems (Strauss et al., 1988; Hunt et al., 2007; Noor and Musa, 2007). Furthermore, a simple question about a parent's level of satisfaction in a specific outcome may not be enough to allow inferences about quality of care or whether the type of care received resulted in particular outcomes. Ammentorp et al. (2006) have reported on potential determinants of parental satisfaction in pediatric care that include, but are not limited to, expectations and fulfillment of expectations, confidence in doctors, behavior of health care providers, information received, and quality of communication. Although the current study did control for some potential confounders, the factors described by Ammentorp et al. (2006) were not included in the data collected, with the exception of satisfaction of information received at the time of diagnosis. Future studies using standardized tools for measuring parental satisfaction and standardized clinical measures that include medical record review may better describe the differences between those with and without team care.

Mothers who had education beyond high school were more likely to participate in the study. Those with a high school education or less made up the largest percentage of the no team group and the smallest percentage of the team care group. It is plausible that many of the nonrespondents who may be less educated would fall into the no team care group, which could alter these findings. Additionally, participants were primarily non-Hispanic white; therefore, information about team care enrollment among other racial and ethnic groups is lacking.

Among the strengths of the current study is that this three-state collaboration provided sufficient power to perform analyses that a single state might not have. Children were identified by state surveillance systems and recruited for the NBDPS based on eligibility criteria that included clinical classification. Additionally, assessing services and treatments received for the 12 months prior to interview minimized potential for maternal recall bias.

Although some studies have examined outcomes among multidisciplinary team patient populations (Richman, 1997; Thomas et al., 1997; Millard and Richman, 2001), and others have compared their patient population with orofacial clefts with children without orofacial clefts (Chapman et al., 1998; Damiano et al., 2006; Hunt et al., 2007), very little is known about whether team care is successful in achieving positive results. To the authors' knowledge, the current study is the first to allow a comprehensive examination of services and treatments received by children with orofacial clefts, both overall, and stratified by team care status.

Overall, receipt of recommended age-appropriate care tended to be higher among those with team care versus those without team care, and several of those differences were statistically significant. Such differences could explain the finding that mothers of children without team care were twice as likely to give a lower rating for the overall cleft care. In contrast, lack of team care did not have an effect on maternal perceptions of their child's overall health, satisfaction of the child's facial appearance, or assessment of the child's difficulties with speech. Due to potential changes in residence, parental employment, and health insurance coverage, compliance with specific medical regimes and participation in team care also may change for families over time. A longitudinal study that captures such life changes and how they affect participation in team care and outcomes for children could answer many questions regarding whether team care improves outcomes or whether some of the ACPA-recommended parameters are more important than others for positive outcomes. In addition to parental perceptions, such studies may benefit from inclusion of targeted and detailed medical record abstraction to provide more objective measures of outcomes that are not biased by maternal recall. Finally, a larger study that includes more children from numerous geographic regions may allow for determination of the role that type of cleft, racial and ethnic differences, and childhood developmental stages play in the services received and outcomes experienced by these children.

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Appendix 1

Questions for study outcomes:

Global Rating of Care

Q. Overall, on a scale of 0 to 10, where 0 is the worst care possible and 10 is the best care possible, how would you rate the quality of all the care [CHILD] has received for [his/her] cleft?

___ ___ Rating

Overall Health and Functional Health Status

Q. In general, how would you rate [CHILD]'s overall health now? Would you say...

1. Excellent
2. Very Good
3. Good
4. Fair
5. Poor

Facial Appearance

Q. Overall, how happy would you say you are with [CHILD]'s facial appearance? Would you say you are...

1. Not at all happy
2. Somewhat happy
3. Moderately happy
4. Very happy

Speech Assessment

Q. How often does [CHILD] appear to get frustrated when [he/she] speaks because of trouble being understood? Would you say...

Q. How often does [CHILD] appear to avoid talking because of trouble being understood? Would you say...

Q. How often does [CHILD] appear to have difficulty being understood by the people who are with [him/her] every day? Would you say...

Q. How often does [CHILD] appear to have difficulty being understood by the people who don't interact or see [him/her] very much? Would you say...

Q. Overall, how often does [CHILD] appear to have difficulty being understood? Would you say...

1. Never
2. Sometimes
3. Usually
4. Always

TABLE 1

Descriptive Characteristics of Children With Orofacial Clefts by Team Care Status

Characteristic	No Team Care* (n = 61)	Team Care* (n = 192)	p Value [†]
	n (%)	n (%)	
State of residence			
Arkansas	18 (29.5)	52 (27.1)	NS
Iowa	14 (23.0)	72 (37.5)	
New York	29 (47.5)	68 (35.4)	
Type of cleft			
Cleft lip (CL)	23 (37.7)	43 (22.4)	.003, <i>df</i> = 2
Cleft palate (CP)	23 (37.7)	55 (28.6)	
Cleft lip + palate (CLP)	15 (24.6)	94 (49.0)	
Child's age			
2–4 y	29 (47.5)	93 (48.4)	NS
5–7 y	32 (52.5)	99 (51.6)	
Child's sex			
Female	23 (37.7)	79 (41.2)	NS
Male	38 (62.3)	113 (58.8)	
Mother's age at interview			
19–29 y	18 (29.5)	56 (29.2)	NS
30–39 y	34 (55.7)	106 (55.2)	
40–49 y	9 (14.8)	30 (15.6)	
Maternal race/ethnicity			
White	55 (90.2)	178 (92.7)	NS
Other [‡]	6 (9.8)	14 (7.3)	
Maternal education attainment			
High school or less	24 (39.3)	49 (25.5)	NS
Some college/associate degree	14 (23.0)	64 (33.3)	
College graduate/advanced degree	23 (37.7)	79 (41.2)	
Yearly household income			
<\$20,000	11 (20.4)	22 (12.9)	NS
\$20,001–\$50,000	14 (25.9)	58 (33.9)	
>\$50,000	29 (53.7)	91 (53.2)	
Type of child's health care coverage			
Employer/someone else's employer	38 (62.3)	120 (62.5)	NS
Medicaid/SCHIP [§]	16 (26.2)	51 (26.5)	
Privately purchased	2 (3.3)	3 (1.6)	
Another source	4 (6.6)	11 (5.7)	
None	1 (1.6)	7 (3.7)	

* Percentages are based on total responses.

[†] *p* value calculated using chi-square test;

NS = nonsignificance at $p < .05$; df = degrees of freedom.

[‡]Other includes black (n = 11), Hispanic (n = 4), Asian (n = 4), other (n = 1).

[§]SCHIP = State Child Health Insurance Program.

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TABLE 2

Services and Care Received by Children With Orofacial Clefts by Team Care Status

Medical Services	No Team Care* (n = 61)	Team Care* (n = 192)	p Value [†]
	n (%)	n (%)	
Number of cleft-related surgeries			
None	3 (4.9)	2 (1.1)	
1	35 (57.4)	82 (42.9)	.03, <i>df</i> = 3
2	12 (19.7)	59 (30.9)	
3–10	11 (18.0)	48 (25.1)	
Hearing tests in the past 12 mo	36 (60.0)	149 (78.0)	.006, <i>df</i> = 1
Speech therapy in past 12 mo, aged 3–7 y	22 (40.0)	85 (53.1)	NS
Emotional or behavioral care in past 12 mo	5 (8.2)	12 (6.3)	NS
Help with learning problems in past 12 mo	9 (14.8)	25 (13.0)	NS
Genetic counseling since diagnosis	16 (26.2)	92 (47.9)	.003, <i>df</i> = 1
Noncleft medical care in past 12 mo	37 (62.7)	140 (77.4)	.03, <i>df</i> = 1
Noncleft specialty care in past 12 mo	19 (31.7)	71 (37.0)	NS
Last visit for preventive care			
< =12 mo	51 (85.0)	174 (90.6)	
> 12 mo	7 (11.7)	18 (9.4)	NS
Never	2 (3.3)	0 (0.0)	
Last dental care visit			
< =12 mo	37 (61.7)	158 (82.3)	
> 12 mo	4 (6.7)	15 (7.8)	.001, <i>df</i> = 2
Never	19 (31.7)	19 (9.9)	

* Percentages are based on total responses.

[†] *p* value calculated using chi-square test;NS = nonsignificance at *p*.05; *df* = degrees of freedom.

TABLE 3

Distribution of Maternal Perception of Outcomes of Children With Orofacial Clefts by Team Care Status

	No Team Care* (n = 61)	Team Care* (n = 192)	Total* (n = 253)
Outcomes Measured by Maternal Response	n (%)	n (%)	n (%)
Overall rating of cleft care			
<i>Lower</i> (rating of 0–7)	14 (23.0)	16 (8.4)	30 (11.9)
<i>Higher</i> (rating of 8–10)	47 (77.0)	175 (91.6)	222 (88.1)
Global health rating			
Less than <i>very good</i>	9 (14.8)	21 (10.9)	30 (11.9)
<i>Very good/excellent</i>	52 (85.2)	171 (89.1)	223 (88.1)
Happiness with facial appearance			
Less than <i>very happy</i>	9 (15.5)	31 (16.2)	40 (16.0)
<i>Very happy</i>	50 (84.8)	160 (83.8)	210 (84.0)
Assessment of speech, aged 3–7 y			
<i>Ever</i> had difficulties being understood	31 (58.5)	99 (63.1)	130 (61.9)
<i>Never</i> had difficulties being understood	22 (41.5)	58 (36.9)	80 (38.1)

* Percentages are based on total responses.

TABLE 4

Crude and Adjusted Prevalence Ratios (PR) of Maternal Perception of Outcomes Comparing Those Without Team Care With Those With Team Care

Outcomes Measured by Maternal Response	Prevalence Ratio	
	cPR (95% CI) [*]	aPR (95% CI) [†]
Lower overall rating of cleft care	2.74 (1.34–5.61)	2.25 (0.99–5.12) [‡]
Less than <i>very good/excellent</i> global health rating	1.35 (0.65–2.79)	1.18 (0.51–2.70) [§]
Less than <i>very happy</i> with facial appearance	0.94 (0.48–1.86)	1.13 (0.56–2.26) ^{//}
Speech assessment (<i>ever</i> had difficulties being understood), aged 3–7 y	0.93 (0.72–1.20)	1.16 (0.81–1.68) [¶]

^{*} Crude prevalence ratio with 95% confidence interval.

[†] Adjusted prevalence ratio with 95% confidence interval.

[‡] Adjusted for type of cleft, severity of cleft, state of residence, child age, received dental care in last 12 months, and unmet need for speech therapy.

[§] Adjusted for type of cleft, severity of cleft, state of residence, other cleft surgery, physical and mental delays, type of health care coverage, and income.

^{//} Adjusted for type of cleft.

[¶] Adjusted for type of cleft, state of residence, child age, and income.