International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Cleft Lip and Palate in Adolescence Identifying Variables Relating to Psychosocial Concerns

Satish Bhatele[1], Sneha Sanwal[2], Saqib Hussain[3], Sakshi Rai[4]

[1]Associate Professor, Department of Oral and Maxillofacial Surgery, MPCD& RC Gwalior
[2]Graduate Student, Institute of Dental Sciences, Bareilly
[3,4]Graduate, Institute of Dental Sciences, Bareilly

Abstract

Background-It is postulated that individuals with cleft lip and palate may be at risk to experience psychosocial problem based upon their congenital malformation. Since cleft is one of the more common congenital malformations it is of importance to address this postulation. **Purpose:** To investigate if adolescents with cleft lip and palate have an altered self-concept, and to assess their degree of introversion. **Materials and Methods:** The cleft lip and/or palate group consisted of 55 adolescents (17 to 20 years) while the control group consisted of 31 adolescents (16 to 19 years). And **Results:** In this study, TSCS indicated the individuals with cleft did not experience low self- concept in comparison with the control group, in actuality the overall score indicated a significant higher self-esteem 356.60 +/- 30.22 ($t(80) = 2.41$; $p<.05$) as well in sub-scale; identity, behaviour and family self. When comparing the individuals with cleft lip and palate, cleft lip or cleft palate, they did not differ from one another ($F(2,47)=1,79$; $p>.05$). **Conclusion:** Adolescents with cleft seem to have a normal to high self-concept without an accentuated degree of introversion and also Academic achievement of adolescents with cleft is significantly reduced, particularly in the group with cleft palate.

INTRODUCTION

It is postulated that individuals with cleft lip and palate may be at risk to experience psychosocial problem based upon their congenital malformation. Since cleft is one of the more common congenital malformations it is of importance to address this postulation. The incidence rate in Sweden is about 1.8/1000 newborns [1, 2], however the global distribution of cleft varies with geographic location, ethnic group and socioeconomic conditions [3, 4]. In 2005 in Sweden, 96 children were born with cleft lip with or without cleft palate and 58 children with isolated cleft palate [5]. All of them will be followed up into late adolescence and receive habilitation by a multidisciplinary team comprising representatives from plastic surgery, orthodontics, oto-rhino-laryngology, phoniatrics, speech therapy and social work.

The issue of psychosocial aspects in relation to cleft is though not addressed to the same extent as results regarding maxillofacial growth, speech, hearing and facial appearance. It is internationally recognized that more focus needs to be addressed to psychological and quality-of-life measures [4]. The psychological aspects in relation to cleft have been examined for decades with an assortment of outcomes and conclusions with various methodological approaches. Hunt and coworkers (2005) conducted a systematic review of the psychosocial effects of cleft lip and palate. They looked at 652 abstract from which they determined that 64 articles met the criteria to be included in their review. However it was not possible to conduct a meta-analysis of the studies included secondary due to the large variations in study design and outcome measures

[5]. Hence it becomes intricate to formulate conclusions based upon the methodological limitations, their review indicate that there are some limited evidence of psychosocial problems in certain areas, but the overall functioning appears to be adequate for individuals with cleft [5].

This raises a fundamental question that is worth considering; is it right to assume that an individual with cleft will have an increased risk of psychosocial problems completely based upon the cleft *per se*. Many psychosocial studies follow this notion, including the first article in this thesis, which basically compare how individuals with cleft function in relation to the general population in a specified area or concept. This arbitrary notion needs to be questioned since it does not take into account other variables or determinants that has a crucial influence on the psychosocial wellbeing [6]. It is then imperative to identify what kind of variables are influenced by cleft, if any, so they can be added into the equation when analyzing the psychosocial aspects for individuals with cleft. The other articles in this thesis focus upon identifying potential variables that could have an impact on the psychological or quality-of-life measure.

Self concept and introversion

When it comes to self-concept, individuals with cleft lip and palate seem to perceive themselves differently depending on age. Studies on children have shown diverging results with both a lowered self-concept [7, 8] and a medium to high self-concept [9]. Compared with children, adolescents with cleft lip and palate more consistently show an average to high self-concept [9, 10].

The degree of inhibition is significantly correlated to the degree of psychological maladjustment, and may thus depend on the individuals with cleft lip and palate behaviour and social skill [10]. These qualities are at least partly determined by the acceptance an individual with cleft lip and palate will experience in the environment. However, people in general may be hesitant or even negative towards individuals who do not display normal human features or behaviours. Regarding the operated individual with cleft lip and palate, the appearance is actually considered less friendly and popular and not so intelligent and attractive compared with the normalised appearance achieved by retouched photographs [11]. It is therefore not surprising that an individual with cleft lip and palate often is concerned about facial appearance. In childhood and adolescence, this correlates with an increased social inversion and may also be accompanied by poor self-concept and anxiety [12, 13].

Physical characteristics

It has been thought that cleft lip and palate and cleft palate with their attendant structural malformations and related functional problems may affect general physical development. Possible explanations for such physical development are ontogenetic conditions [14], inadequate nutrition [15, 16] or deleterious effects of reconstructive surgery [17]. A genetic disposition to a cleft may therefore be associated with genes that code for general physical development individually.

Studies have been conducted on patients with cleft lip and palate and cleft palate to find out if the structural malformation contributes to significantly lower body weight than the normal population. A number of studies indicates that there is no appreciable impact on body weight [18-19], but some research has indicated that if a patient has unilateral cleft lip and palate, or isolated cleft palate, and is male, then there is a possibility of lower body weight [20]. In support of the last notion, some studies indicate that there is a significant influence on birth weight [21, 22]. As far as stature is concerned some researchers think that cleft lip and palate and cleft palate may be associated with an increased risk of impeded growth though other reports do not.[22]

There is therefore no consensus whether weight and stature are affected by thepresence of a cleft. Weight and stature are themselves important variables but altered body dimensions could also influence other physical characteristics, such as muscular strength.
These aspects are particularly important in regards to psychosocial issues, as under development of the physical characteristics can cause a psychosocial burden andaffect wellbeing [23, 24].

To investigate if adolescents with cleft lip and palate have an altered self- concept, and to assess their degree of introversion and to determine if there is a difference in academic achievement of adolescentswith cleft lip and palate in comparison with the general population.

METHODOLOGY

The purpose of this study was to investigate if cleft lip and/or palate adolescents have an altered self-concept, and to assess their degree of introversion, in comparison with a control group. The cleft lip and/or palate group consisted of 55 adolescents (17 to 20 years) while the control group consisted of 31 adolescents (16 to 19 years).
This data were retrieved from the patient registers of the Department of Oral and Maxillofacial Surgery and Rohilkhand Hospital, Bareilly Uttar Pradesh . The patients all had a cleft lip, a cleft lip and palate, or a cleft palate, and their age ranged from 17 to 20 years.
Patients with any additional significant disability were excluded. One-hundred-and- twenty-five patients qualified for participation in the study. By mail they received the questionnaires, instructions for the tests, and a letter signed by members of the cleft team. Fifty-five patients, 27 males and 28 females with a mean age of 18.5 years, responded by completing the tests in their home environment, and mailing them back to us. Twenty-one of them had had a cleft lip and palate, 16 an isolated cleft lip, and 16 an isolated cleft palate. In two cases of anonymous reply, the cleft type was not clearly given, and consequently their scores were only used for the entire cleft lip and palate group. The control group consisted of 31 adolescents, 11 males and 20 females, attending a local high school. Their ages ranged from 16 to 19 years with a mean of 17.5. The controls answered the questionnaires in a classroom setting during a psychology lesson. They got both written and verbal instructions by the teacher. Test-forms were collected by the researchers.

Eysenck Personality Questionnaire Inventory

Eysenck Personality Questionnaire Inventory (EPQ-I) was used to measure the degree of introversion . The test consists of all together 114 items, but only three scales are used for introversion-extroversion. Impulsiveness, sociability, and "unclassified" were combined to a total extroversion score.
Consequently, a low score suggests introversion, and a high extroversion. The internal consistency reliability is .85 for males and .84 for females. The test-retest reliability is.90 and .87, respectively.

Statistical analysis

The differences between groups were analysed using the t-test and one-way analysis of variance (ANOVA). Self-concept and introversion were compared using linear correlation. In simple terms, the *t*-test compares the actual difference between two means in relation to the variation in the data, while the one-way analysis of variance is used when there are two or more independent groups to be analyzed. The linear correlation (Pearson's correlation coefficient [*r*]) was applied to measure the relation between to continuous variables in two methods.

RESULTS

Self-Concept and Introversion

In this study, TSCS indicated the individuals with cleft did not experience low self- concept in comparison with the control group, in actuality the overall score indicated a significant higher self-esteem 356.60 +/- 30.22 ($t(80) = 2.41$; $p<.05$) as well in sub-scale; identity, behaviour and family self. When comparing the individuals with cleft lip and palate, cleft lip or cleft palate, they did not differ from one another ($F(2,47)=1,79$; $p>.05$).

EPQ-I scores were 13.29 +/- 4.90 in the control group, and 13.62 +/- 4.04 inthe group with cleft ($t(84) = -0.33$; $p>.05$). Both scores are compatible with the introversion-extroversion normative group; 14.46 for males, and 13.31 for females. Scores of subgroups; CLP, CL and CP did not differ from one another ($F(2,50)=0.79$; $p>.05$).

Scores in TSCS and EPQ-I showed no correlation ($r=0.030$), neither in any ofthe subgroups.

Physical Characteristics

The findings are described in the following sections; body weight, height, body mass index and muscular strength for the groups with cleft lip with/without palate and cleft palate in relation to the control group.

Body weight

The OR for weighing less than 60 kg for the group with cleft lip with/without palate (*n*=321) was significantly increased: 1.74 (95% CI 1.28 to 2.37) p=0,0002, x^2=13,55. The same phenomenon was observed in the group with cleft palate (*n*=80), the corresponding OR was 2.13 (95% CI 1.18 to 3.83) p=0,007, x^2=7,29.

Height

The group with cleft lip with/without palate (n=321) showed no significant deviation inheight, the OR for being less than 170 cm was 1.21 (95% CI 0.77 to 1.89) p=0,22, x^2=0,80. In the group with cleft palate (n=80) there was a significant difference compared with the control group, the corresponding OR being 2.25 (95% CI 1.09 to 4.50) p=0,014, x^2=6,05.

Body Mass Index

There was a significant difference between the group with cleft lip with/without palate (n=321) and the controls. The OR for having a BMI <19 was 1.55 (95% CI 1.12 to 2.12) p=0,005, x^2=7,90, in the group with cleft palate (n=80) there was no significant difference, the OR being 1.71 (95% CI 0.90 to 3.18) p=0,07,x^2=3,19, compared with the control group.

Muscular strength

Muscular strength was categorised in five levels and there was no significant reduction in muscular strength in the group with cleft lip with/without palate (n=316), the OR for muscular strength below the 1959 N being 1.22 (95% CI 0.97 to 1.53) p=0,08, x^2=3,07. In the group with cleft palate (n=88) there was an obvious reduction in muscular strength. The OR for muscular strength below the 1959 N was 1.59 (95% CI 1.00 to 2.55) p=0,04, x^2=4,25.

General Intellectual Capacity

The group with cleft lip with/without palate (n=307) showed no significant deviation ingeneral intellectual capacity (GIC) in comparison to the control group. The OR for having a GIC score below 4 was 1.11 (95% CI 0.84-1.45) p=0,45, x^2=0,57. In the group with cleft palate (n=81) there was a significant reduced general intellectual capacity compared with the control group, the corresponding OR was 1.98 (95% CI 1.22-3.19) p=0,003, x^2=8,85.

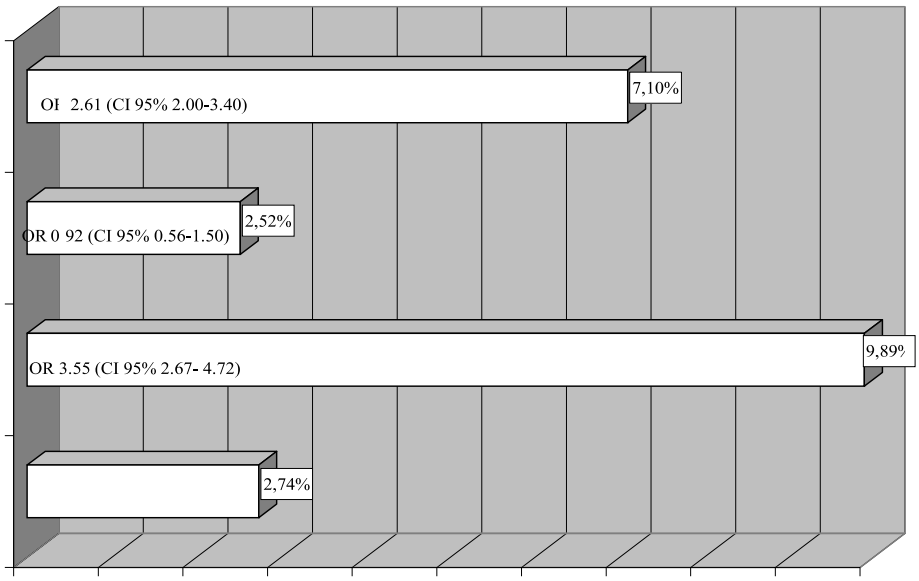
Academic Achievement

The adolescents with cleft lip experience the least negative consequence, they have a significantly lower grade point average (Table I) and significantly higher odds of receiving lowest grade in math based upon the relative system OR 1.65 (95% CI 1.02-2.68), while they have significantly reduced odds of receiving the highest grades in Swedish based upon the knowledge based system OR 0.72 (95% CI 0.53-0.96). Nevertheless, they finish compulsory school and receive their leaving certificates to thesame extent as the general population (Figure I).

Table I. Grade point average (based only upon the numerical grades 1988 – 1997)

Cleft type	N	Cleft	Population	Mean t	z-test	P
CP	274	3.06±0.04	3.24±0.001	-0.25±0.09	-2.87	**0.002**
CL	428	3.12±0.03	3.25±0.001	-0.19±0.07	-2.78	**0.003**
CLP	**471**	**3.12±0.03**	**3.24±0.001**	**-0.17±0.06**	**-2.71**	**0.003**

CLP



CL

DISCUSSION

In study, on self-concept and introversion, fifty-five out of 125 individuals of the CLP group responded to

our inquiry. This response rate of 44 percent is surprisingly good considering the sensitive subject of psychological testing [25]. An average return rate in initial surveys actually is 20 to 30 percent [26]. Considering the study design and the fact that primary surgery was done roughly 15 years earlier, it was decided not to contact the subjects a second time. The patients filled out the forms on their own in their various home environments. Obviously this did not involve any major problems, as only three forms were incomplete. Whenever possible from a practical point of view, like for our control group, the structured classroom setting is preferred where also supplementary oral instructions can be given. The cleft lip and palate group and the control group were compatible in regard to age and gender.

Self-concept and Introversion

This study indicate that adolescents with cleft lip and palate have a good self-concept which is congruent with other comparable research [13]. Compared with the control group, the cleft lip and palate group had in fact a higher mean value on all the TSCS scales, and there was a significant difference in three sub-scales and the overall self-concept score. The distribution of the scores was similar in the two groups, which go against that some cleft lip and palate individuals would be at particular risk for psychosocial problems. Such a risk has been postulated in younger adolescents with cleft lip and palate [8].

Neither were there signs of introversion in the cleft lip and palate group. This finding differs partly from previous reports demonstrating social introversion sometimes accompanied by poor self-concept and anxiety [10, 11]. The discrepancy can at least to some degree be explained by differences in methodology and subjects. The EPQ-I is based on the theory that biological factors are involved in personality dimensions like introversion/extraversion [27] whereas Richman's study for example [11] was based on the subjective view about the facial appearance rather than the primary cleft morphology. Pertschuk and Whitaker [10] studied children with craniofacial deformities such as craniofacial dysostosis, hemifacial microsomia, orbital hypertelorism, and mandibulofacial dysostosis, rather than adolescents with cleft lip and palate.

It is peculiar, though, that adolescents with cleft lip and palate manage to maintain their healthy self-concept in a society where beautiful is considered equal to good [28] and attractive people thought to possess other positive qualities as well [29]. The fact that a face with a repaired cleft is judged significantly less friendly and attractive and that the person is viewed less popular and unlikely to be picked as a friend [11] makes the situation still harder. However, individuals with cleft lip and palate may actively use their stigmatised status to maintain a healthy self-concept . In other words, the stigma becomes a protective shield against negative feedback for the self-concept [30]. Individuals with cleft lip and palate may also, or alternatively, use benign defense mechanisms to protect their self-concept from negative feed back, stigmatism, and social rejection [9, 12].

No data were obtained aimed at elucidating for instance socioeconomic status, general competence, school achievement, and confidence with the reconstructive result. This may be considered a shortcoming since it does not take into account other variables or determinants that has a crucial influence on the psychosocial wellbeing [6]. The following studies in this thesis therefore focus upon identifying other potential variables that could have an impact on the psychological or quality-of-life measure.

CONCLUSION

Adolescents with cleft seem to have a normal to high self-concept without an accentuated degree of introversion.

References

1. Henriksson T-G. Cleft lip and palate in Sweden: a genetic and clinical investigation. Uppsala: Uppsala; 1971.43(1):45-9.
2. Robert E, Kallen B, Harris J. The epidemiology of orofacial clefts. 1. Some general epidemiological characteristics. J Craniofac Genet Dev Biol 1996;16(4):234-41.
3. Schutte BC, Murray JC. The many faces and factors of orofacial clefts. Hum Mol Genet 1999;8(10):1853-9.
4. Mossey P, Castilla E. Global registry and database on craniofacial anomalies: Report of a WHO Registry Meeting on Craniofacial Anomalies. Bauru, Brazil, 4–5 December 2001. Geneva, Switzerland: World Health Organization; 2003.
5. Hunt O, Burden D, Hepper P, Johnston C. The psychosocial effects of cleft lip and palate: a systematic review. Eur J Orthod 2005;27(3):274- 85.
6. Herrman H, Saxena S, Moodie R, editors. Promoting mental health: concepts, emerging evidence, practice : report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and the University of Melbourne. Geneva: WHO Press; 2005.
7. Broder H, Strauss RP. Self-concept of early primary school age children with visible or invisible defects. Cleft Palate J 1989;26(2):114-7; discussion 117-8.
8. Kapp-Simon K. Self-concept of primary-school-age children with cleft lip, cleft palate, or both. Cleft Palate J 1986;23(1):24-7.
9. Leonard BJ, Brust JD, Abrahams G, Sielaff B. Self-concept of children and adolescents with cleft lip and/or palate. Cleft Palate Craniofac J 1991;28(4):347-53.
10. Kapp-Simon KA, Simon DJ, Kristovich S. Self-perception, social skills, adjustment, and inhibition in young adolescents with craniofacial anomalies. Cleft Palate Craniofac J 1992;29(4):352-6.
11. Tobiasen JM. Social judgments of facial deformity. Cleft Palate J1987;24(4):323-7.
12. Pertschuk MJ, Whitaker LA. Psychosocial adjustment and craniofacial malformations in childhood. Plast Reconstr Surg 1985;75(2):177-84.
13. Richman LC. Self-reported social, speech, and facial concerns and personality adjustment of adolescents with cleft lip and palate. CleftPalate J 1983;20(2):108-1
14. Rudman D, Davis T, Priest JH, Patterson JH, Kutner MH, HeymsfieldSB, et al. Prevalence of growth hormone deficiency in children with cleft lip or palate. J Pediatr 1978;93(3):378-82.
15. Day DW. Accurate diagnosis and assessment of growth in patients withorofacial clefting. Birth Defects Orig Artic Ser 1985;21(2):1-14.
16. Seth AK, McWilliams BJ. Weight gain in children with cleft palatefrom birth to two years. Cleft Palate J 1988;25(2):146-50.
17. Mars M. Facial Growth. In: Watson A, Sell D, Grunwell P, editors. Management of Cleft Lip and Palate. Edingburgh: Whurr Pub Ltd; 2001. p. 44-67.
18. Ranalli DN, Mazaheri M. Height-weight growth of cleft children, birth to six years. Cleft Palate J 1975;12:400-4.
19. Lee J, Nunn J, Wright C. Height and weight achievement in cleft lip and palate. Arch Dis Child 1997;76(1):70-2.
20. Bowers EJ, Mayro RF, Whitaker LA, Pasquariello PS, LaRossa D, Randall P. General body growth in

children with clefts of the lip, palate,and craniofacial structure. Scand J Plast Reconstr Surg Hand Surg 1987;21(1):7-14.
21. Becker M, Svensson H, Kallen B. Birth weight, body length, and cranial circumference in newborns with cleft lip or palate. Cleft Palate Craniofac J 1998;35(3):255-61.
22. Wyszynski DF, Sarkozi A, Vargha P, Czeizel AE. Birth weight and gestational age of newborns with cleft lip with or without cleft palate and with isolated cleft palate. J Clin Pediatr Dent 2003;27(2):185-90.
23. Sandberg DE, Brook AE, Campos SP. Short stature: a psychosocial burden requiring growth hormone therapy? Pediatrics 1994;94(6 Pt 1):832-40.
24. Corson P, Andersen A. Body image issues among boys and men. In: Cash T, Pruzinsky T, editors. Body Image: A Handbook of Theory, Research and Clinical Practice. New York: The Guilford Press; 2002. p.192-199.
25. Fife-Schaw C. Surveys and sampling issues. In: Breakwell GM, Hammond S, editors. Research methods in psychology (2nd ed.).London, England: Sage Publications Ltd; 2000. p. 88-104.
26. Fife-Schaw C. Surveys and sampling issues. In: Breakwell GM, Hammond S, editors. Research methods in psychology (2nd ed.).London, England: Sage Publications Ltd; 2000. p. 88-104.
27. Eysenck H. Genetic and environmental contributions to individual differences. The three major dimensions of personality. J Pers 1990;58:245-261.
28. Dion K, Berscheid E, Walster E. What is beautiful is good. J Pers SocPsychol 1972;24(3):285-90.
29. Calvert J. Physical attractiveness: a review and reevaluation of its role in social skill research. Behav Assess 1988;10(1):29-42.
30. Hillman S. Externalization as a self-protective mechanism in stigmatized group. Psychol Rev 1992;70:641-642.