The self-concept of adolescents with cleft lip and palate: a pilot study using a multidimensional/hierarchical measurement instrument

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Summary. *Objective*. To pilot the use of a multidimensional/hierarchical measurement instrument called the self-description questionnaire II to determine whether specific areas of self-concept in a group of adolescents with cleft lip and palate would be affected by their condition when compared with a normative sample.

Participants and design. The self-concept of 23 adolescents with a cleft of the lip and palate was compared to an Australian normative sample.

Setting. Adolescents attending the dental department of a paediatric hospital in Australia.

Main outcome measure. The main outcome measure was a self-report questionnaire (102 items) with 10 domain-specific scales and a global measure of general self-concept.

Results. When compared to the normative data the study group showed significant differences in 4 of the 11 domainspecific scales: Parent Relations (P < 0.001), Physical Abilities (P < 0.001), Opposite-Sex Relations (P < 0.01) and Physical Appearance (P < 0.01) self-concepts. These differences were in a positive direction. Global self-concept as measured by the General Self scale was not significantly different from the normative sample.

Conclusion. These results suggest that adolescents with clefts of the lip and palate have normative if not better selfconcept than their peers. The study also suggests that having a cleft of the lip and palate has specific rather than broad associations with psychosocial adjustment. This justifies the use of instruments designed to assess specific areas of selfconcept rather than more global measures.

Introduction

Advances in surgical technique and a better understanding of the sequence of surgical and orthodontic procedures mean that excellent repair of clefts of the lip and/or palate is now possible. Parallel to these advances has been an increase in the attention paid to psychological adjustment of children and adolescents with craniofacial conditions. The importance of this aspect of the habilitation of individuals with cleft lip and palate (CLP) has been particularly acknowledged in the last three decades [1–7]. There has been a shift from the purely surgical treatment of these anomalies to a more holistic approach

Correspondence: Associate Professor Nicky Kilpatrick, Department of Dentistry, Royal Children's Hospital, Flemington Road, Parkville, Victoria 3052 Australia. E-mail: nicky@bassdata.com.au including paediatricians, psychologists, and others interested in child and adolescent development. As a result, there has been an increase in research examining the impact of CLP on social and psychological functioning and academic achievement.

Despite this, the question of whether an individual born with a cleft of the lip and palate is more likely to experience psychosocial problems remains largely unanswered. On the one hand, studies show that children and adolescents with CLP are unhappy with their appearance [3,8,9], have lowered self-esteem, poor self-confidence [9–11], and lower-quality social interactions [12]. On the other hand, research also suggests that children and adolescents with CLP appear to have normal or above-normal selfconceptions [2,4,13,14].

One factor contributing to these mixed findings is that of defining the construct 'self-concept'. It has been suggested that researchers do not feel compelled to provide any theoretical definition of self-concept or self-esteem because they assume everybody knows what it means [15]. As a result, the terms self-esteem and self-concept are often used interchangeably [16–18]. It has been suggested, however, that the two terms differ with self-concept being descriptive information cognized about one's self, particularly with reference to others (such as height, hair colour, ability in school, and attractiveness), whereas self-esteem relates to the emotional or evaluative response to this descriptive information [17-19]. Despite this theoretical separation, most authors accept that the descriptive aspects of the self cannot be separated from the evaluative aspects [20-22]. It appears as though even spontaneously generated self-description includes elements of self-evaluation [23].

Self-concept may therefore be defined as:

'the image or concept people have of themselves, particularly their abilities (physical, mental and social) and the value (positive or negative) they place on these self evaluations' [24].

It is well recognized that self-esteem and selfconcept are important in the adoption of healthy behaviour by young people [17]. Many studies investigating self-esteem and its impact on behaviour have used global measures. The sensitivity of such measures has been questioned by a growing body of empirical literature that suggests value in exploring specific facets. This is illustrated by Emery et al. [25] who identified three specific areas of self-esteem that influence substance use in adolescents: social or peer self-esteem, school selfesteem, and intrafamilial or home self-esteem. Although there is widespread acceptance of these multidimensional models of self-concept, the value of a global self-concept domain cannot be ignored. A multidimensional/hierarchical model takes account of this by hypothesizing a super-ordinate global self-concept at the apex of a hierarchy. By theoretically and empirically separating domainspecific judgements from more global judgements of self, it is easier to establish the significance of specific domains in determining a person's global self-worth.

It has been suggested that individuals with CLP may have differences in self-conceptions organized around appearance and social relations that are both important for optimal psycho-social development [6,13]. Dissatisfaction with facial appearance in adolescents with CLP may also be related to greater

behavioural inhibition, loneliness, and fewer close friends [10,20].

The aim of this study was to establish the feasibility and appropriateness of using a hierarchical multidimensional instrument, the Self-Description Questionnaire II (SDQII) [27] to evaluate the selfconcept of a group of adolescents with CLP.

Methods

Ethical approval for this study was gained from the Royal Children's Hospital Ethics in Human Research Committee. Patients attending orthodontic clinics in the Department of Dentistry at a large paediatric hospital over a period of 8 months were assessed for suitability for inclusion in the study.

Inclusion criteria were:

- young adolescents (age range 12–16);
- uni- or bilateral cleft of the lip and palate but with no other significant medical condition or associated syndrome;
- absence of developmental delay, learning difficulty, or intellectual disability;
- received all aspects of treatment for their cleft condition to date through the one cleft service; and
- completion of the first phase of orthodontic treatment (expansion of the maxilla) and the alveolar bone graft to the defect area but had yet to enter the second definitive phase of orthodontic treatment.

Thirty-three adolescents met the inclusion criteria and their parents were approached by one researcher (MG) following their routine clinic appointment and invited to participate in the study. Nine declined to participate, mostly citing shortage of time or further appointments elsewhere in the hospital. One other participant was excluded after demonstrating that he could not read the instructions for the questionnaire. The group included nine girls and 14 boys. The mean age was $14 \cdot 1$ with a range of $12 \cdot 0 - 16 \cdot 75$. Table 1 summarizes the distribution of cleft types.

Table 1. Cleft type and gender.

	Males	Females	Total
Bilateral cleft	5	2	7
Unilateral cleft	9	7	16
Total	14	9	23

Instrument

The instrument employed to collect data in this study was the Self-Description Questionnaire II (SDQII). The SDQII is one of a series of three instruments designed to measure self-concept at three distinct developmental stages: preadolescence (SDQI), young adolescence (SDQII), and late adolescence (SDQIII). The SDQII is designed to measure self-concept in young adolescents aged 12–16.

The normative sample for the SDQII is made up of 5494 students (2658 male and 2836 female students) from schools in Sydney, Australia. The sample includes schools from geographically diverse regions of Sydney. In addition, it includes schools in working-class, middle-class, and affluent areas, state and independent schools, and single- and mixed-sex schools. This questionnaire has subsequently been used widely in the Australian context [28,29].

The questionnaire consists of 102 items and assesses three areas of academic self-concept, seven areas of non-academic self-concept, as well as a general self-concept scale. Thus, there are 11 scales: Physical Abilities, Physical Appearance, Opposite-Sex Relations, Same-Sex Relations, Parent Relations, Honesty-Trustworthiness, Emotional Stability, Math, Verbal, General School, and General Self.

To complete the questionnaire, the participant must respond to a simple declarative statement (e.g., 'I get along well with my parents', 'I don't get upset easily', 'most of my friends are better looking than I am.'). The participant must indicate their level of agreement along a Likert-type scale with one of six responses: False; Mostly False; More False than True; More True than False; Mostly True; or True. A mean score is calculated for each scale. The responses to the items in each of the self-concept scales are scored on a scale of one to six. Each of the scales has high face validity and so in general a high scale score in a particular area would indicate that the respondent has a positive self-perspective in that area and a low scale score would indicate a negative self-perspective. There are either 8 or 10 items in each scale, half of which are negatively worded to overcome positive response bias. A mean score for each of the scales is then derived.

The manual for the SDQII presents alpha reliability coefficients that were computed from the total normative sample. Internal consistencies for each of the 11 scales vary from 0.83 for emotional stability to 0.91 for physical appearance (median 0.86). These coefficients meet the accepted criteria for assessment instruments in research [30]. Good construct and content validity of the instrument has also been demonstrated through factor-analytic studies. These results show strong evidence to support the contention that self-concept is a multifaceted hierarchical construct [30].

Following consent, each participant was asked to complete the SDQII in a room removed from their parents and other patients and staff. The researcher clarified the instructions and the participant was then asked to complete the example items provided and was given the opportunity to discuss any misunderstandings. Participants were instructed not to put their names on the questionnaire (codes were assigned by the investigator) and assured that all responses would be seen by the investigator only and would not be made public. Following this assurance of confidentiality, participants were reminded that the questionnaire was not a test, that each individual would have different responses and that they were to answer as honestly as possible. Finally, they were informed that, although there was no time limit, they were to work through the questionnaire quickly and carefully. Any questions that they did not understand were to be left to the end where they would be given the opportunity to clarify the meaning with the investigator.

All questionnaires were checked as the participant completed them to ensure that each item had a response. If missing items were identified the participant was asked to re-read and respond to the item.

Data analyses

Data were analysed using the scoring program provided in the SDQII manual and the Statistical Package for the Social Sciences [33]. Student's *t*-test was employed to assess the significance of observed differences both within the group and in comparison with the normative sample. Group means and standard deviations were calculated for each self-concept scale of the SDQII for male and female participants and for the total group. Male participants did not differ from female participants on any subscale either in mean or in variance; because of this all further analysis was performed using the total group scores. The internal consistency of each of the scales was determined using Cronbach's alpha.

Results

The highest mean scores in the study group were in parent relations self-concept (m = $5 \cdot 12$, SD = $0 \cdot 82$), general self self-concept (m = $5 \cdot 01$, SD = $0 \cdot 72$), and physical ability self-concept (m = $4 \cdot 84$, SD = $1 \cdot 22$). The lowest scores were in math self-concept (m = $3 \cdot 72$, SD = $1 \cdot 46$), verbal self-concept (m = $3 \cdot 97$, SD = $0 \cdot 98$), and physical appearance self-concept (m = $3 \cdot 98$, SD = $1 \cdot 14$). Cronbach's alpha values ranged from $0 \cdot 95$ (Math) to $0 \cdot 77$ (Opposite-Sex Relations) with a mean of $0 \cdot 85$.

Table 2 describes the mean scores for the study group as compared to the Normative Sample. The results indicate that the study group does not differ from the general adolescent population in their global or total self-concept, as measured by the general-self scale. For six of the self-concept scales (same-sex relations, honesty/trustworthiness, emotional stability, math, verbal, and general school) the study group did not differ from the normative sample. The study group did, however, differ in four of the self-concept scales – physical ability (P < 0.001), physical appearance (P < 0.01), opposite-sex relations (P < 0.001), and parent relations (P < 0.001). In each of these four scales the study group had more positive self-concepts.

Discussion

This paper presents the findings of a pilot study investigating the self-concept of a group of adolescents with CLP utilizing a reliable and widely used tool, the SDQII. To date, this instrument has not been used with individuals with CLP. The hierarchical multidimensional structure of the SDQ II allows for the comparison between specific domains of self-concept and between these domains and a superordinate global self-concept score. The SDQ II is reliable and widely used, possesses high theoretical construct and psychometric characteristics [32,33], and has been recognized as a valid and reliable instrument for use in research and clinical settings [30].

The present study group comprised of 23 individuals with cleft lip and palate. Although essentially a convenience sample, the composition of the group is, however, broadly representative of the cleft population as a whole. The gender imbalance reflects the sex differences in prevalence of cleft lip and palate with a greater percentage of children born with CLP being boys [34-36]. Cleft type prevalence within the group is also consistent with reported norms for greater prevalence of unilateral clefting compared with bilateral [34,36]. Adolescents with clefts of the lip or palate alone were excluded following suggestions that there are significant differences in some self-concept domains between these children and those with a cleft of both the lip and palate [37]. Other confounding variables such as age, significant medical conditions, and syndromes were also carefully controlled for. Furthermore, all participants had received their care through one centralized service. Although participants may have been exposed, over the course of their care, to variations in treating clinicians across the surgical, speech, and dental specialties, the protocols applied would be essentially very similar. Given that the effects of fixed orthodontic appliance therapy on

Table 2.	Comparison	of	study	group	with	normative	sample.
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	Study group		Normativ	<i>t</i> -test allowing for unequal variances	
	m	SD	m	SD	t
General self	5.01	0.72	4.83	0.16	1.19
Physical ability	4.84	1.22	3.64	0.50	4.71***
Physical appearance	3.98	1.14	3.11	0.37	3.65**
Opposite-sex relations	4.44	1.05	3.43	0.36	4.61***
Same-sex relations	4.48	1.06	4.84	0.41	-1.62
Honesty/trustworthiness	4.74	1.09	4.38	0.52	1.58
Parent relations	5.12	0.84	3.86	0.08	7.19***
Emotional stability	4.35	1.27	3.98	0.42	1.39
Math	3.72	1.46	3.59	0.48	0.42
Verbal	3.97	0.98	4.133	0.39	-0.78
General school	4.39	1.00	4.31	0.44	0.38

*P < 0.05, **P < 0.01, ***P < 0.001.

self-concept are unknown, all participants were at the same stage of orthodontic care (i.e., between active phases) with none of them currently wearing any form of intraoral appliance. Although adopting these tight inclusion criteria certainly ensured a more homogenous sample, it also limited the size of the group and this should be considered when interpreting the results.

The results of this study suggest that having a cleft of the lip and/or palate may not affect general or global self-concept when compared with the normative sample. It should be noted, however, that all 'self-reports' carry the inherent risk of individuals responding in socially acceptable ways. It is possible that, because the research was conducted in the hospital that has provided most of their care, respondents have felt unable to express feelings of disappointment or dissatisfaction. In order to minimize this effect, the researcher administering the questionnaire was identified as not being a member of the hospital staff and was unknown to the adolescent or parents. In addition, before the questionnaire was completed the researcher assured the respondent that all responses were confidential and would not be made public. Future studies may be better conducted in an alternative setting such as the school.

The strength of the SDQII lies in its ability to measure specific areas of self-concept as well as general self-concept. Examination of each of the domain-specific scales suggests that, as hypothesized, the study group differ in some, but not all, domains when compared with the norm. The areas of deviation are considered below.

Physical appearance

Despite their obvious facial differences, the study group felt strongly that they were attractive when compared with their peers and that others around them shared this view. Given the high scores in other scales, particularly those related to general self, it is unlikely that this self-appraisal is a defence mechanism to preserve self-esteem. This phenomenon may be a result of supportive strategies employed by significant others, most likely parents. These strategies may include providing positive feedback on appearance, encouraging positive self-talk, or highlighting other areas of competence. Additionally, this group has entered a stage of treatment that has a significant impact on their appearance. This satisfaction with changes because of surgery may offset the normal adolescent trend of increased disappointment with physical appearance.

Parent relations

Extremely positive parent relations self-concepts suggest that the study group could talk with their parents regarding personal problems and that they felt loved and supported by them. It may be that parents of adolescents with CLP act to avoid potential social problems by increasing their levels of support in order to assist or encourage their child in social interactions. It is also possible that adolescents who have difficulty in forming new relationships outside the family invest more time in developing the relationships that they already have with significant others compared with their non-CLP peers. Reliance on parents rather than peers for advice, guidance, and information may lead to an enhanced relationship between parent and child. A continuing strong relationship with parents at a time of active interactions with peers has been shown to be a beneficial pattern in adolescence [38]. The extraordinarily high parent relations self-concept in this group of adolescents may provide the key to positive self-concepts in other domains particularly those where one might intuitively expect to see deficits in this group (i.e., physical appearance and peer relationships). Such a result, however, may indicate an over-close or over-protective relationship that could have implications for the future development of emotional independence from parents and other adults.

There may, however, be an element of sample bias in these findings in that the study relied on both the adolescents and their parents agreeing to participate. It is possible therefore that this may have caused a double bias, i.e., confident adolescents and highly supportive parents. Over-protective parents and/or less-confident adolescents may not have consented. Of the 33 adolescents approached, nine declined to participate. In seven instances, parents actively made the decision citing shortage of time or further appointments elsewhere in the hospital. In the other two cases, the adolescents themselves actively made the decision but gave no reason.

Peer relations

The study also showed that adolescents in the CLP group thought that they were liked by peers,

had good friends, and felt confident making friends with both men and women. This disagrees with many observational and self-report studies that use quantity of peer interactions as a measure of peer relation success. It may be that although the study group had less close friends, the quality of those friendships was high.

The literature related to self-concept in individuals with CLP shows a wide selection of measurement instruments. The most common are the self-report type [8,37], although the reports of 'significant others' are also examined [5,39]. New methodologies are also emerging such as studies that directly observe and code behaviours in a naturalistic setting [13]. A meta-analysis of self-report measures conducted by Hattie [33] revealed 62 different tests of self-concept from 128 different studies with various populations. Many tests are used only once and so lack any basis for confident use by others. Wylie [40] advised that researchers should use and refine a small number of instruments to develop high levels of reliability and construct validity. In a review of major self-concept instruments published by the American Psychological Association, Byrne [41] described the SDQs as one of the most validated selfconcept measures available. The self-description questionnaires have the potential to allow the investigation of the salient dimensions of the self-concept of individuals with CLP and other craniofacial anomalies over several distinct developmental stages and for this information to be compared to a large normative sample.

Most studies of the self-concept of children and adolescents with CLP utilizing self-reports have been cross-sectional [12]. A further understanding of the intraindividual changes in self-concept over time requires the use of longitudinal or sequential studies. The self-description questionnaires (I, II, and III) provide a set of instruments that are based on a strong empirical foundation and good theoretical model for the examination of the self-concept within individuals across three developmental stages. Additionally, many studies lack a comparator group and so the extent of difference in CLP sample groups from non-CLP groups remains unanswered. The normative data produced for the SDQs allows the comparison of cleft sample groups with the noncleft same-age populations.

What this paper adds

- This paper defines the terms 'self esteem' and 'self concept'.
- Suggests that facial clefting may impact on specific aspects of psychosocial adjustment.
- Supports the theory that individuals with clefts of lip/ palate have at least as good and in some respects better self-concept than their unaffected peers.

Why this paper is important to paediatric dentists

• As an important member of the interdisciplinary cleft team, paediatric dentist should understand the potential psychosocial impacts experienced by some children and their families.

Conclusion

The results of this pilot study provide support for the idea that clefting has a specific rather than a broad association with psychosocial adjustment. This justifies the use of instruments designed to assess specific areas of self-concept rather than more global measures. By theoretically and empirically separating domain-specific judgements from more global judgements of self it is easier to establish the significance of specific domains in determining a person's global self-worth [42]. This is particularly important when testing the effects of interventions designed to enhance the self-concept of individuals. The SDQ may provide a viable addition to the tools available for auditing clinical outcomes that is becoming a contemporary clinical service delivery [43].

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