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Disparities in oral health-related quality of life in a population of Canadian children

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Abstract – *Objectives:* To assess socioeconomic disparities in the oral health-related quality of life in a group of Canadian children. *Methods:* Data were obtained as part of a study designed to assess the functional and psychosocial impact of traumatic dental injury. Clinical data were collected on a random sample of children during a school-based dental screening program that included measures of dental decay experience, treatment needs, dental trauma, fluorosis, and malocclusion. Children with dental trauma and a comparison group of trauma-free children were selected for follow-up. Their parents were mailed a questionnaire concerning the child's personal and family characteristics. Also enclosed was a questionnaire for the child that contained a short form of the Child Perceptions Questionnaire (CPQ) 11–14. Bivariate and multivariate analyses were undertaken to determine whether there were disparities in oral health-related quality of life according to household income. *Results:* Complete data were collected from 370 children. Mean CPQ11–14 scores showed a gradient across income categories with children from low income households having poorer oral health-related quality of life. Children from households containing only one adult also had higher scores than children living with two or more adults. In both linear and logistic regression analyses household income and family structure remained significant predictors of CPQ11–14 scores after controlling for oral disease variables. Further analyses suggested that oral disorders had little impact on the health-related quality of life of higher income children but a marked impact on lower income children. The highest mean CPQ11–14 scores were observed among low income children with the more severe levels of oral disease. *Conclusion:* The data indicate that in this group of children there were socioeconomic disparities in oral health-related quality of life. A potential explanation may be differences in psychological assets and psychosocial resources.

Key words: children; disparities; oral health-related quality of life; socioeconomic status

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In the UK, there is a long tradition of examining inequalities in health based on socioeconomic status (1). The occupationally based Registrar General's classification of social class was developed in 1911 and has been used on numerous occasions to document inequalities in mortality and morbidity. Social class gradients have been observed across a wide range of health measures including, but not confined to, acute and chronic illness rates, days of restricted activity, low birth weight and self-perceived health (2, 3). The lower social classes are markedly disadvantaged when compared with individuals from the upper end of the occupational hierarchy. Oral health surveys have also revealed such gradients with respect to indicators of dental health such as edentulism, decay experience, periodontal disease, and trauma (4).

Socioeconomic differentials or disparities have also been observed in North America where income and education, rather than social class, are used as indicators of socioeconomic position.

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Routinely collected health data and data from national and local health surveys show that those from low income households have poorer general and oral health than those from high income households (5–8).

Although Canada is one of the few developed countries not to have undertaken national oral health surveys, national and provincial health interview surveys and studies of local populations provide evidence of disparities in oral health on the basis of household income. For example, the National Population Health Survey of 1996 (9) and the Canadian Community Health Survey of 2003 (10) found substantial differences in the prevalence of edentulism across income groups. Studies of specific populations have provided more comprehensive data on the extent of income disparities in oral health. A study of older adults living in four Ontario communities found income gradients with respect to a wide range of clinical and subjective oral health indicators (11). These were: percent edentulous, number of missing teeth, number of functional units, number of decayed crown and root surfaces, mean periodontal attachment loss, percent with problems chewing, impact on quality of life and satisfaction with oral health status. In all instances, low income subjects had the worst oral health outcomes. Moreover, income remained a significant predictor of Oral Health Impact Profile (OHIP) (12) scores after controlling for missing teeth, suggesting that tooth loss had a greater negative effect on the quality of life of low than high income subjects (13). Among high income subjects, the OHIP scores of the edentulous were 68% higher than the scores of the dentate. For low income subjects the difference in scores was 85%. These findings are consistent with contemporary models of disease and its consequences which suggest that the relationship between clinical indicators of disease and health-related quality of life outcomes is mediated by personal and environmental variables (14).

A more recent study of children aged 5–14 years, also conducted in four Ontario communities, found socioeconomic gradients with respect to dental caries experience, missing teeth, and the percent with urgent dental care needs (15). Moreover, parents from low income households were more likely than parents from high income households to report that their children had experienced dental pain in the last 6 months and to rate their child's dental health as being poor. Similar socioeconomic disparities have been observed in other Canadian provinces (16).

At the time the Ontario study was conducted measures of oral health-related quality of life suitable for children did not exist so that no information was available on whether or not there were socioeconomic disparities with respect to the impact of oral disorders on physical and psychosocial functioning, and whether or not low income children experienced more impacts after controlling for levels of oral disease.

Consequently, when undertaking a study to assess the oral health-related quality of life outcomes of traumatic dental injuries on the quality of life of children, data on the socioeconomic status of the household in which the children lived were collected. The primary hypotheses to be tested were: (i) children from low income households would have poorer oral health-related quality of life than children from high income households, and (ii) based on our previous study with older adults, consistent with contemporary models of disease and its consequences, household income would remain as a significant predictor of oral health-related quality of life outcomes after controlling for the presence and severity of a number of oral diseases and disorders that are common in child populations.

Methods

The study was conducted in two phases: a clinical examination phase of a large sample of children and a follow-up phase in which selected children and their parents were asked to complete questionnaires concerning oral health and its psychosocial impacts.

Clinical examination phase

The target population for the clinical examination phase was all grade 6 (aged 11/12 years) and grade 8 (aged 13/14 years) children attending schools in geographic areas served by two of Ontario's Public Health Departments, namely York Region and Brant County. A stratified random sample of 15 schools was drawn in each location; five designated low caries risk, five medium risk, and five high risk. These caries risk designations are made by the Public Health Departments using data on caries prevalence collected during their annual school dental screening programs. All grade 6 and 8 students in sampled schools were included in the

study if they were present on the day of screening and had not been excluded from the screening process at parental request.

Clinical data were collected during the dental screening program conducted by the two participating Public Health Departments between October 2004 and May 2005. The screening examinations were undertaken by experienced dental hygienists who were trained and calibrated in the use of a common screening protocol and diagnostic criteria. The diagnostic classifications and procedures used were derived from the protocols developed by the Public Health Branch of the Ontario Ministry of Health for use in the screening programs and Dental Indices Surveys conducted by all Public Health Departments in Ontario.

Each child's caries experience was recorded using the DMFT index with the D, M and F components scored separately. Caries was scored at the D3 level. Each child was also assessed for the following treatment needs – urgent restorative need, non-urgent restorative need, need for sealants, need for topical fluoride, and need for scaling.

The appearance of the anterior teeth of each child was scored by the examining hygienist using the Aesthetic Component of the Index of Orthodontic Treatment Need (AC-IOTN) (17). This is a 10-point scale based on photographs that are ranked according to the arrangement of the anterior dentition, where 1 is the most and 10 the least attractive.

The Dental Trauma Index (DTI) (18) was used to record evidence of injury to the upper and lower incisors. Prior to the examination each child was asked whether they had had an injury to the teeth at the front of the mouth. A score of 0 indicates a tooth that is present and sound, while a score of 1 indicates unrestored enamel fractures, and scores of 2–5 indicate more severe levels of trauma, such as a fracture involving the dentin, pulp involvement or tooth loss, either treated or untreated.

The upper incisors and canines were examined for fluorosis using the Tooth Surface Index of Fluorosis (19). Based on the examination each child was assigned to one of the following fluorosis categories – none, very mild, mild, moderate, and severe.

Questionnaire phase

The target population for this phase of the study was all children reporting a history of traumatic dental injury and showing clinical evidence of injury, along with a comparison group consisting of the next two non-injured children of the same gender to be clinically examined. The parents of these children were sent a letter informing them of the study and asking them to complete a short questionnaire concerning the child's dental history and family characteristics. Also included was a questionnaire to be completed by the child. Two mailings were used along with telephone follow-ups of non-responders to these mailings.

The parental questionnaire asked whether or not the child had a regular source of dental care and at least one dental visit in the last year. Parents were also asked to rate the child's dental health on a scale ranging from 'excellent' to 'poor'. Questions were asked on the child's place of birth (Canada/elsewhere), whether or not the family had dental insurance, number of adults in the household, number of children in the household, total annual household income, receipt of government income support, 'an indicator of poverty,' and mother's educational attainment. Household income was measured using seven categories that ranged from 'less than $10 000' to '$60 000 or more'. These were reduced to four categories for the purposes of analysis.

The child questionnaire contained a 10-item short form of the Child Perceptions Questionnaire11–14 (CPQ11–14) (20) which was specifically designed to assess the oral health-related quality of life of children. Each item asked about the frequency of functional and psychosocial problems experienced over the previous 3 months as a result of the condition of the teeth and mouth. The response format was Likert-type with the following categories and codes: Never = 1, Once or twice = 2, Sometimes = 3, Often = 4, Everyday or almost everyday = 5. The validity of this short form was previously demonstrated in a study of 141 children with malocclusions just starting orthodontic treatment. There was a significant association between scores derived from the short form and children's self-ratings of oral health ($P < 0.05$) and ratings of the extent to which the condition of the teeth affected life overall ($P < 0.001$). There were also significant correlations ($r = 0.31$; $P < 0.01$) between questionnaire scores and two commonly used indexes of malocclusion and/or orthodontic treatment need: the Dental Aesthetic Index (21) and the Peer Assessment Rating index (22). The internal consistency reliability of the short form was indicated by a Cronbach's alpha of 0.85.

Data analysis

The data for children with and without evidence of dental injury was pooled. CPQ11–14 short form scores were calculated by summing the response codes to the 10 items comprising the measure. Prior to all analyses, data were weighted to adjust for non-response.

Simple descriptive statistics were generated and bivariate analyses undertaken to assess the associations between oral health-related quality of life scores, the clinical measures of oral diseases/disorders and the personal and sociodemographic variables derived from the parental questionnaire. *t*-Tests and one-way analysis of variance were used to assess the significance of these associations. Multiple linear and binary logistic regression models using 'forward stepwise' entry procedures were used to assess the independent effects of variables on CPQ11–14 scores. For the logistic regression analysis CPQ11–14 scores were dichotomized at the 80th percentile.

All variables derived from the clinical examination and parental questionnaire were used in the regression analyses irrespective of whether or not they showed significant associations at the bivariate level with CPQ11–14 scores. This approach was used to manage confounding. Confounding can result in an overestimation or underestimation of the strength of the association between exposure and outcome variables and can change the direction of the relationship. Consequently, variables that are not significant at the bivariate level can emerge as being significant in multivariate analysis. Previous research on similar child populations has shown that there is an association between dental trauma and dental caries (23) and between dental trauma and malocclusion (24). The association between caries and fluorosis has been well documented (25). As all four oral conditions are likely to be associated with oral health-related quality of life outcomes we included all variables in the regression models to control for potential confounding effects.

Finally, GLM univariate procedures were used to test the interaction effects between oral disease states and household income with CPQ 11–14 scores as the dependent variable.

Results

Complete data were collected for 370 children (208 boys and 162 girls). One hundred and fifty two were in grade 6 and 218 in grade 8. The majority (81.6%) were born in Canada, had a regular source of dental care (87.8%) and at least one dental visit in the last year (85.3%). Just over two-thirds (68.9%) were from families with dental insurance. Few (3.6%) came from families receiving government income support.

Caries rates were relatively low. Although 43.7% had a DMFT of one or more the mean was 0.79 (SD = 1.21). Just over a tenth, 13.3%, had one or more decayed teeth and 7.1% had a tooth missing due to caries. No child had two or more missing teeth. Approximately a quarter, 23.2%, was classified as having very mild fluorosis and 4.1% mild fluorosis. No children had moderate or severe fluorosis. According to the AC-IOTN ratings, 19.1% had moderate/borderline need for orthodontic treatment and 9.8% a definite need for treatment. Because of the way the subjects were selected, dental injury rates were high. Just over one third, 37.5%, showed evidence of injury to the anterior dentition (DTI codes of 1–5) with 15.3% having one or more teeth with severe injury (DTI codes of 2–5).

Cronbach's alpha for the 10-item CPQ11–14 was 0.80 and scores showed a significant association in the expected direction with parental ratings of their child's dental health ($P < 0.01$). CPQ11–14 short form scores ranged from 10 to 32 with a mean of 12.9 (SD = 4.2). The percentage of children reporting that they had experienced the problem described by the items during the previous 3 months ranged from 5.5% for 'Not wanting to spend time with other children' to 43.1% for 'Pain in the teeth or mouth'. Other commonly reported items were 'Difficulty biting or chewing foods' (29.2%), 'Being concerned with what other people think about your teeth' (27.9%), and 'Feeling shy or embarrassed' (18.3%).

Table 1 shows the associations between the clinical indicators derived from the dental screening and oral health-related quality of life scores. Although gradients in the expected direction were observed for several variables, the association was significant for the number of incisors with severe injury only. Table 2 shows the association between variables derived from the parental questionnaire and CPQ11–14 short form scores. Associations were significant for all variables except school grade and mother's educational attainment. Both variables denoting the socioeconomic status of the household in which the child participants lived (annual household income, receipt of government

Table 1. Association between clinical indicators and CPQ11–14 scores

Clinical indicator	Mean CPQ11–14 score	*P*-value
Missing teeth		
None	12.8	NS
One	13.5	
Decayed teeth		
None	12.8	NS
One	12.9	
Two or more	14.6	
AC-IOTN rating		
1–4	12.7	NS
5–7	13.1	
8–10	13.8	
Fluorosis		
None	12.7	NS
Very mild	13.5	
Mild	11.9	
Incisors with DTI codes 1–5		
None	12.7	NS
One	13.4	
Two or more	13.7	
Incisors with DTI codes 2–5		
None	12.7	<0.001
One	13.6	
Two or more	16.4	

CPQ, Child Perceptions Questionnaire; AC-IOTN, Aesthetic Component of the Index of Orthodontic Treatment Need; DTI, Dental Trauma Index; NS, not significant.

Table 2. Association between personal/family characteristics and CPQ11–14 scores

Characteristic	Mean CPQ 11–14 score	*P*-value
Gender		
Male	12.5	<0.01
Female	13.4	
School grade		
6	12.8	NS
8	12.9	
Regular source of dental care		
Yes	12.6	<0.001
No	14.6	
Dental visit in last year		
Yes	12.7	<0.05
No	13.8	
Place of birth		
Canada	12.7	<0.05
Elsewhere	13.7	
Dental insurance coverage		
Yes	12.5	<0.01
No	13.8	
Household income		
<$20 000	15.0	<0.001
$20–39 000	14.7	
$40–59 000	12.9	
$60 000+	12.1	
Government income support		
Yes	17.8	<0.001
No	12.8	
Mother's education		
Less than high school	12.4	NS
High school	13.2	
Some post secondary	13.5	
College/university	12.5	
Number of adults in household		
One	14.6	<0.001
Two or more	12.7	

CPQ, Child Perceptions Questionnaire; NS, not significant.

income support) indicated that children from lower income households had the highest CPQ11–14 short form scores. The largest mean scores observed were those of children living in households receiving welfare or disability support payments. Children living in households with only one adult had higher scores than children from multi-adult households.

The results of the stepwise linear regression analysis are shown in Table 3. Seven variables were entered into the model. In order of entry these were – household income, number of incisors with severe injury, gender, AC-IOTN score, number of decayed teeth, regular source of dental care, and number of adults in the household. The model was significant ($F = 14.1$; $P < 0.001$) and the associated R^2 was 0.135. Five variables were entered into the forward logistic regression model (Table 4). In order of entry these were – income, number of incisors with severe injury, AC-IOTN score, gender, and number of adults in the household (model chi-square = 58.8; $P < 0.01$). The Nagelkerke R^2 for the model was 0.146. In both models, the regression coefficient for income was negative, indicating that children from lower income households had higher CPQ11–14 scores after controlling for the other variables. When receipt of government income support was substituted for household income it entered both models as the first variable. In the logistic regression model the exponential of the regression coefficient was 5.4.

In order to eliminate the confounding effects of severe dental injury, the bivariate and multivariate analyses were repeated excluding those children with DTI codes of 2–5 for one or more teeth. In the bivariate analyses there was a significant association between the number of decayed teeth and CPQ11–14 scores ($P < 0.05$) and the AC-IOTN rating and these scores ($P < 0.05$). Five variables were entered into the linear regression model. These were household income, gender, AC-IOTN score, number of decayed teeth, and regular source of dental care. The associated R^2 was 0.10. The logistic regression model contained three variables,

Table 3. Results of the forward stepwise linear regression analysis

Dependent variable: CPQ11–14 score			
Independent variables in order of entry	β	P-value	R^2 at each step
Constant		<0.001	
Income (7-category variable)	−0.183	<0.001	0.053
Number of incisors with severe trauma	0.198	<0.001	0.077
Gender (male = 0; female = 1)	0.183	<0.001	0.103
AC-IOTN rating	0.128	<0.01	0.115
Number of decayed teeth	0.101	<0.01	0.124
Regular source of dental care (yes = 0; no = 1)	0.105	<0.05	0.130
Number of adults in household (two or more = 0; one = 1)	−0.182	<0.05	0.135

CPQ, Child Perceptions Questionnaire; AC-IOTN, Aesthetic Component of the Index of Orthodontic Treatment Need. $F = 14.1$; $P < 0.001$.

Table 4. Results of the forward stepwise logistic regression analysis

Dependent variable: CPQ11–14 score dichotomized at 80th percentile			
Independent variables in order of entry	Exp(β)	P-value	R^2 at each step
Constant	0.446	NS	
Income (7-category variable)	0.83	<0.01	0.034
Number of incisors with severe trauma	2.48	<0.001	0.061
Gender (male = 0; female = 1)	2.44	<0.001	0.094
AC-IOTN rating	1.22	<0.01	0.134
Number of adults in household	0.64	<0.05	0.146

CPQ, Child Perceptions Questionnaire; AC-IOTN, Aesthetic Component of the Index of Orthodontic Treatment Need; NS, not significant. Model chi-square = 58.8; $P < 0.001$.

gender, AC-IOTN score, and income with a Nagelkerke R^2 of 0.13.

The associations between income, oral disease, and oral health-related quality of life were explored further by comparing mean CPQ11–14 scores across the categories of the clinical variables in two income groups – children from households with an annual income of $39 000 or less and those from households with an annual income of $40 000 or more. The analysis in Fig. 1 included all children and shows that in the higher income group there were no differences in CPQ11–14 scores for children with and without severe injury to the anterior dentition. However, the differences were significant for children in the lower income group. The analyses in Figs 2 and 3 were limited to children without evidence of severe injury and confirm that neither dental decay nor malocclusions had an impact on the oral health-related quality of life of

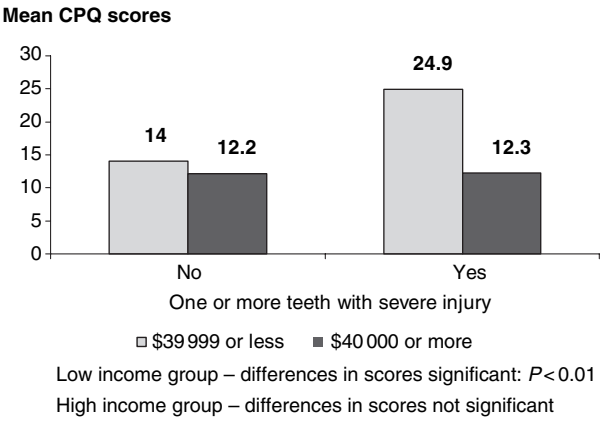

Fig. 1. Mean Child Perceptions Questionnaire (CPQ) scores for those with and without severe injury by income category.

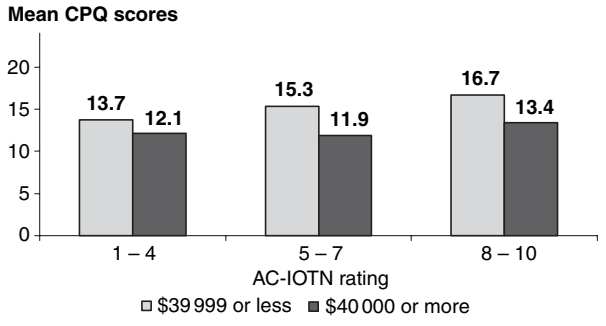

Fig. 2. Mean Child Perceptions Questionnaire (CPQ) scores by Aesthetic Component of the Index of Orthodontic Treatment Need (AC-IOTN) rating by income category.

children from the higher income group. By contrast the scores of children in the lower income group show an increasing gradient across the categories of these two clinical measures. GLM univariate procedures indicated a significant interaction effect between each of the three disease states and

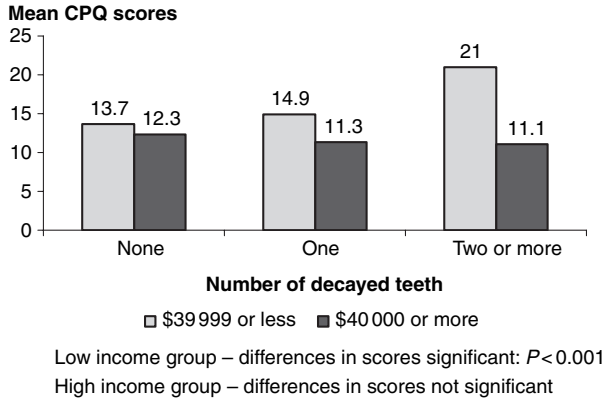

Fig. 3. Mean Child Perceptions Questionnaire (CPQ) scores by number of decayed teeth by income category.

household income ($P < 0.001$). The results were also confirmed in separate linear regression analyses undertaken for each of the two income groups. For the higher income group the only variable to enter the model was gender. For the lower income group the three clinical variables also entered the model. The R^2 for this model was 0.42.

Discussion

This preliminary study examined disparities in the oral health-related quality of life of a group of Canadian children originally recruited for a study of the prevalence, causes and consequences of traumatic dental injury. Socioeconomic data were collected from parents in order to allow income inequalities in oral health-related quality of life to be examined. Both of the hypotheses tested were confirmed. That is, children from low income households had higher scores on a short form of the CPQ11–14 than children from high income households, indicating poorer oral health-related quality of life. Further, household income remained a predictor of oral-health related quality of life scores after controlling for the potential confounding effects of oral diseases and disorders such as dental caries, dental injury, and malocclusion. In both linear and logistic regression analyses using forward selection procedures, household income was the first variable to enter the model. This was also the case when another indicator of socioeconomic status, receipt of government income support, 'an indicator of poverty,' was used in the analyses. In the logistic regression analysis, the associated odds ratio indicated that children from families receiving income support were five times at risk of having CPQ11–14 scores in the upper 20th percentile of the distribution than children whose families did not receive such support. These results confirm earlier work on older adults indicating that income disparities in oral health-related quality of life outcomes remain after accounting for differences in levels of oral disease.

Given the independent effects of three oral diseases/conditions, i.e. dental caries, malocclusion, and severe dental trauma, separate analyses of the associations between these oral disease variables and CPQ11–14 scores in higher and lower income groups were undertaken. For children from higher income backgrounds mean CPQ11–14 scores were small, that is close to the minimum score of 10, irrespective of the presence or severity of oral diseases and disorders. For children from lower income backgrounds those free of oral diseases and disorders also had relatively low scores. However, scores increased significantly in the presence of oral disease. This suggests that oral health problems have little impact on high income children but a more marked impact on children from low income environments. These results mirror previous findings from our study of older adults (12).

The links between socioeconomic status and health outcomes have been explained in three ways (26). First, income has a direct effect on the ability to access goods, services, and other resources that promote health. Second, there is an indirect mechanism in terms of differential exposure to risk factors and health behaviors. Third, the relationship between socioeconomic status and health outcomes may be the outcome of differences in psychological assets and psychosocial resources. Taylor and Seeman (27) suggested that traits and factors such as optimism, coping styles, social support, and personal control are related to health outcomes and appear to vary across socioeconomic groups. Sanders and Spencer (26) found evidence to support this hypothesis in a study that indicated that childhood circumstances as indicated by socioeconomic position, family structure and parenting quality influenced adult psychological and psychosocial attributes, such as sense of control, social support and stress, and these in turn influenced oral health outcomes in terms of the social impact of dental disease. It is not unreasonable to suggest that childhood circumstances influence children's psychological assets and psychosocial resources and their experience of oral diseases and disorders. Preliminary evidence of a link between psychological assets and the oral health-related quality of life

of children has been provided by Humphris et al. (28). They used a version of the CPQ developed for 8- to 10-year olds (29) and found significant associations between CPQ scores and a measure of self-esteem.

Consequently, further studies should be undertaken of childhood socioeconomic and family environments and oral health-related quality of life outcomes that include measures of psychological assets and psychosocial resources such as social support. If the hypothesized mechanism has any merit, the associations between income and oral health-related quality of life should be eliminated or reduced and the explanatory power of regression models increased. Whether or not this mechanism also explains the consistent link between gender and the impact of oral disease found in the study reported here remains to be seen.

Because of the way children were selected for the questionnaire phase of the study, they had higher rates of oral diseases/disorders than the larger group that took part in the clinical examination phase of the study. Not only did they have higher rates of dental trauma, they were less likely to be caries free (56.3% versus 65.8%) and more likely to have one or more decayed teeth (13.3% versus 7.8%). Moreover, 28.9% versus 19.8% had AC-IOTN scores indicating orthodontic treatment need. This is consistent with an earlier study of ours that found higher rates of decay among children with evidence of dental trauma (23) and the results of other studies indicating that an increased overjet is a risk factor for traumatic dental injury (24). Consequently, the subjects who completed the questionnaire phase of the study were not representative of the children taking part in the clinical phase of the study nor the target population. This means the study needs to be repeated using larger and more representative samples of children to confirm our findings with respect to socioeconomic disparities in oral health-related quality of life. Prospective studies also need to be undertaken to allow theoretical models to be explored without the limitations of cross-sectional study designs.

A further source of potential bias is that some parents were informed of their child's oral health status. Under the terms of the screening program delivered by the participating Public Health Departments, the parents of children who have urgent dental needs are informed of their child's oral health status. The parents of other children are not informed of the results of the screening examination. As only 5% of the children included in the second phase of the study had urgent dental care needs, and the association between household income and urgent treatment needs was not significant ($P = 0.06$), it is unlikely that informing parents resulted in substantial bias. For example, the mean CPQ score of those with urgent needs was 13.2 compared with 12.9 for those without such needs. The mean of all children included in the second phase was 12.88 and the mean after excluding children with urgent needs was 12.86. Nevertheless, in future studies it would be best to collect the questionnaire data prior to parents being informed of their child's oral health needs.

A final issue that deserves comment is the magnitude of the differences in CPQ 11–14 scores between groups. These are often small at 3–5 scale points, raising the question as to whether or not the differences are 'clinically' as well as statistically significant. As with most other oral health-related quality of life measures, the minimal clinically important difference (30) with respect to the CPQ 11–14 has not yet been established. This difference is defined as 'the smallest difference in score which patients perceive as beneficial and which would mandate, in the absence of troublesome side effects and excessive cost, a change in the patient's management' (30). However, in the study to develop and evaluate the CPQ11–14 the mean difference in short form scores between children who reported that their oral health was excellent and those who reported that it was fair or poor was 3.3. The mean difference between children who reported that their oral condition did not affect their lives and those who reported that it affected their lives a lot was 5.3. Moreover, in a study of older adults undertaken to establish the minimum clinically important difference for the OHIP-14, a scale with a range of 0–56, this was 5 scale points (31). This suggests that seemingly small differences in scale scores can be important in the real world, although this remains to be established for the measure used here. Once the minimally important difference is known then the magnitude of disparities in oral health-related quality of life according to socioeconomic status can be better appreciated.

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