

A sociodental approach to assessing children's oral health needs: integrating an oral health-related quality of life (OHRQoL) measure into oral health service planning

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Objectives We adopted a sociodental approach to assess the real dental needs of Thai primary school children, and integrated an oral health-related quality of life measure (OHRQoL) into oral health service planning. We then compared the results of this sociodental assessment with standard estimates of a child's oral health needs.

Methods We developed a new model of sociodental needs assessment and used it to assess the level of impact that various oral health conditions have on the everyday lives of school children. We then carried out a cross-sectional study of all grade-6 children (11–12 years old) in Suphan-buri Province, Thailand. We examined the sample ($n = 1034$) to assess the children's oral health and then we interviewed each child individually to assess what impact any dental conditions he or she may have on their quality of life. This assessment was done using an OHRQoL indicator, the Child Oral Impacts on Daily Performances index (child-OIDP). We integrated the results obtained using this indicator with those estimates obtained using more traditional, standard clinical methods, in order to generate a clearer picture of exactly which non-progressive dental conditions really needed treatment. These results take into account the impact those conditions have on the overall well-being of children and their ability to function normally and unimpeded. We were then able to prioritize their dental needs according to the severity of disruption caused in their daily lives.

Findings Using standard or "normative" estimates of dental health care needs, the children's need was 98.8%. This level of need decreased significantly to 39.5% when adopting the sociodental approach ($P < 0.001$). Overall, per 100 children with a standard or normative need for dental treatment, only 40 had a sociodental need for treatment when taking into account the impact their condition has on their everyday lives. Children thus identified as requiring treatment were further categorized according to the severity of impact their condition had: 7.2% had severe, 10.3% moderate and 22.0% had minor impacts on OHRQoL.

Conclusions There was a marked difference between the standard normative and the sociodental needs assessment approach, with the latter approach showing a 60% lower assessment of dental health care needs in Thai 11–12-year-old children. Different levels of "impacts" on daily life can be used to prioritize children with needs.

Keywords Oral health/in infancy and childhood; Dental health services; Needs assessment; Quality of life; Child; Cohort studies; Thailand (source: MeSH, NLM).

Mots clés Hygiène buccale/chez le nourrisson et l'enfant; Service hygiène dentaire; Evaluation besoins; Qualité vie; Enfant; Etude cohorte; Thaïlande (source: MeSH, INSERM).

Palabras clave Salud bucal/en la infancia y la niñez; Servicios de salud dental; Evaluación de necesidades; Calidad de vida; Niño; Estudios de cohortes; Tailandia (fuente: DeCS, BIREME).

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Voir page 41 le résumé en français. En la página 41 figura un resumen en español.

Introduction

Traditional methods of measuring dental health are unable to create a living picture of how people's lives are daily affected by oral health issues. They only give a superficial overview of actual need. The sole use of the traditional approach has considerable limitations.¹ Apart from conceptual shortcomings, the approach

usually results in high and unrealistic estimates of workforce needs and resources.^{2, 3, W4, 5, W6} A major shortcoming of this standard normative approach is that it fails to take into account the way people really feel and therefore does not correspond to broader concepts of health and needs.^{1, 7} To overcome this shortcoming, research has focused on developing

broader sociodental concepts of oral health, and numerous sociodental or oral health-related quality of life (OHRQoL) indicators are now available.^{W8–W11} These measures have mainly been used to assess the impact of oral health on daily life^{W11, 12–14} and the relationship between subjective and clinical measures, while at the same time exploring their use as a

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screening tool for clinical measures.¹⁵⁻¹⁹ However, subjective measures should be used as a supplement, not a replacement, for clinical measures in order to broaden concepts of oral health and needs.^{20, 21}

Despite research on subjective measures and incorporation of OHRQoL measures into some national oral health surveys,^{W11, 12-14, 19} data on OHRQoL have seldom been used in dental service planning as they have not been integrated with traditionally collected normative data, thus leaving clinical estimates as the sole determinant of population needs estimates. Adulyanon,^{W22} Srisilapanan et al.^{W23, 24} and Sheiham & Tsakos¹ developed a method of estimating dental needs integrating OHRQoL with traditional, standard needs estimates. This sociodental approach to needs estimation has only previously been used on adult populations. There is no study on integrating OHRQoL measures into needs assessment for all types of dental treatment in schoolchildren, who are frequently the main target group of dental services and the main information source on dental needs assessment. In this study, we used a sociodental approach to assess the dental needs of Thai primary-school children, and integrated an OHRQoL measure into oral health service planning. We then compared the results of this sociodental assessment with standard normative estimates of a child's oral health needs.

Methods

Developing the theoretical framework and algorithm of dental needs assessment

The sociodental system of assessing oral health needs represents a gradual integration process with three levels of assessment (Table 1 (web version only, available at: <http://www.who.int/bulletin>), Fig.1)^{W25, 26};

Level 1) standard normative estimate of need — assessed solely through clinical measures.

Level 2) impact-related (sociodental) estimate of need — assessed by integrating traditional estimates of need with OHRQoL. This level we used to identify and prioritize children in terms of their need for oral health care based on the level of impact their condition had on their daily lives. So, a child assessed in this way has met both criteria; he or she has a traditionally identified need for the treatment, but also a specific condition deemed to have a negative impact

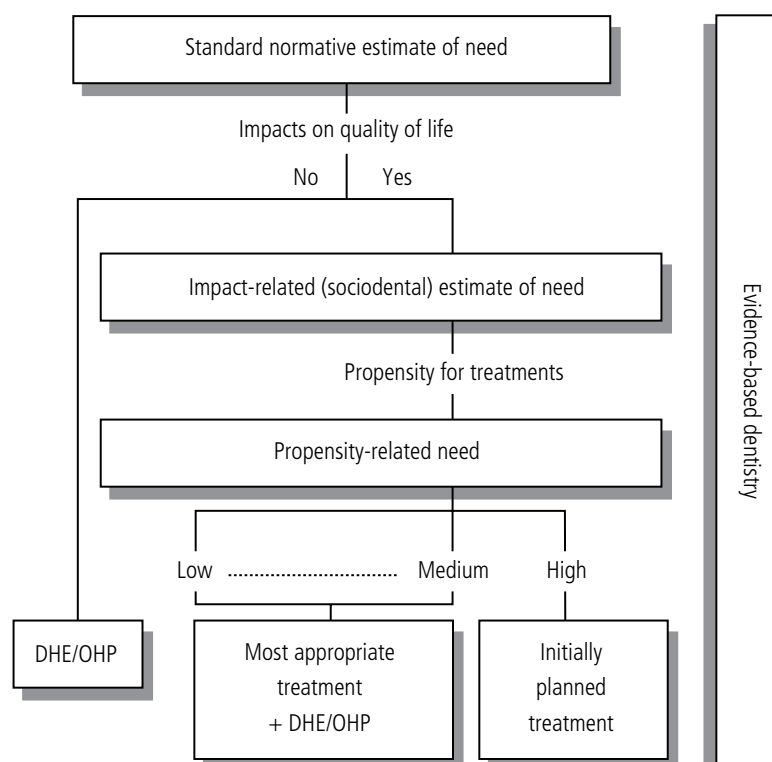
on their everyday life. The integration of OHRQoL into the needs system requires sound concepts of the life history of diseases. Integration should *not* be performed, and impact-related need should *not* be assessed for dental diseases that are highly likely to progress or conditions that need emergency treatment, according to evidence-based guidelines, such as precancerous lesions, abscesses, caries and traumatic injuries involving dentine/pulp. For them, professional judgement (standard, traditional estimates of required treatments) is dominant and the need for intervention is indicated irrespective of a child's perceived need or OHRQoL.

Impact-related (sociodental) estimates of needs are assessed for conditions that are unlikely to progress or cause important adverse health consequences in the absence of treatment. They include traumatic dental injuries involving only the enamel, enamel defects, discoloration or dental anomalies, gingival inflammation, malocclusions^{W27, W28} and missing teeth.^{W29} Gingival inflammation is included, because its progression to severe periodontitis is equivocal; gingivitis seldom progresses and current treatments do

not significantly alter the life history for the better, so health gain from treatment by current methods is unlikely.^{W30-W32} For these five dental conditions, treatment needs based on their impact on an individual's daily life are assessed for each condition separately. Children with a traditionally identified need but where the condition has no negative impact on their everyday life are not considered to need treatment. However, they should receive dental health education and/or oral health promotion (DHE/OHP) to improve oral health behaviours.

Level 3) propensity-related need — calculated by integrating standard estimates with OHRQoL and behavioural propensity. At this level, treatment is prescribed in the light of probability of success, using the best available evidence on effectiveness of treatments and the individual's behavioural propensity. Children are classified into groups, from high- to low-propensity levels, and interventions are based upon the propensity of each group or individual. However, this paper covers only the standard and sociodental levels. Methods of assessing propensity-related need are reported elsewhere.^{W25}

Fig. 1. Basic model of dental needs in children (BMDN)



DHE/OHP = dental health education and/or oral health promotion.

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Main survey

We conducted a cross-sectional survey on children aged 11–12 years in a municipal area of Suphanburi Province, Thailand. The study was based on a 55% hypothesized standard need prevalence with 10% clinically important difference, 80% power, 0.05 significance level and 10% attrition rate; the minimum sample size was 850 children. However, we included 1126 children in the sample because the heads of schools requested that all children be examined. We collected data using both clinical examination and questionnaires.

The clinical examinations, undertaken by four calibrated dentists, included measures of oral status and standard treatment needs for five non-progressive oral conditions: traumatic dental injuries, enamel defects/dental anomalies, periodontal diseases, malocclusion and prosthodontic conditions. Clinical assessments were based on standard guidelines, where available. We used the community periodontal index (CPI), recommended by WHO³⁴ and Thailand Clinical Practice Guidelines,^{W35} for periodontal assessments (standard need: CPI score of 1 or above). We used the index of orthodontic treatment need (IOTN),^{W36} the most commonly used orthodontic index in the United Kingdom,^{W37} for orthodontic assessment (standard need: IOTN grades 4 or 5). For traumatic dental injuries, enamel defects/dental anomalies and prosthodontic conditions, we developed criteria based on previously used criteria or recommendations from national oral health surveys, international dental associations and expert opinions. We independently reviewed and accepted the developed criteria after minor modifications by 30 public health or academic Thai dentists.^{W25}

Two comprehensive OHRQoL measures have been developed specifically for pre-adolescents and validated; the Child Perceptions Questionnaire^{W10} and the previously mentioned child oral impacts on daily performances index (child-OIDP).³⁸ The child-OIDP index, unlike the Child Perceptions Questionnaire, was designed to assist dental service planning. It looks at how specific oral conditions disrupt normal everyday physical, social and psychological functioning, and therefore can be incorporated into needs assessment systems where treatment needs are assessed for different dental conditions. Therefore we chose the child-

OIDP index and it was administered by one trained interviewer. The child-OIDP is a subjective composite indicator that assesses, in 0–3 Likert-type scales, the frequency and severity of impact various oral conditions have on eight basic daily life performances (activities and behaviours). To calculate the child-OIDP score, the frequency and severity scores for each impact are multiplied resulting in a performance score. Then, the sum of all eight performances' scores is the total impact score, which is further converted into a percentage score by dividing it by the maximum score and multiplying by 100. Additionally, the frequency and severity scores can also be used to calculate the "intensity" of impacts, categorized into five levels: very little, little, moderate, severe and very severe (Table 2 (web version only, available at: <http://www.who.int/bulletin>)). The scoring system and impact intensity levels are fully explained elsewhere.³⁹ In addition, child-OIDP allows for analysis of condition-specific impacts on daily performance (CS-OIDP), thus attributing impacts to specific oral conditions or diseases (e.g. malocclusions, fractured tooth, calculus or discoloured teeth) according to the respondent's perception. This special feature of the child-OIDP facilitates its use in needs assessment and planning oral health services. In this study, we used the CS-OIDP score in dichotomous format (zero, non-zero) for determining a sociodental need for treatment, while we used the intensity of impacts for categorizing those children who were assessed to have a need based on the sociodental approach. Finally, we collected demographic data using self-administered questionnaires.

Pilot studies were done to validate all questionnaires and forms (child-OIDP, clinical assessment form and demographic questionnaire) and to improve their application in the field. We also used the back-translation method to check the validity of translation from English into Thai. We conducted a 10% random duplication for reliability testing. The weighted kappa score for child-OIDP was 0.91; kappa scores for intra- and inter-examiner variability in the clinical examination were 0.7–1.0 and 0.6–1.0 respectively, indicating good-to-excellent agreement. Full validation process and psychometric properties of the child-OIDP are reported elsewhere.³⁸

The Ethics Committee of Thailand Ministry of Public Health approved the study. Primary education, local health authorities and all primary schools in study areas gave permission. We sent positive consent forms and information letters to all parents.

We carried out an assessment of need, guided by an algorithm (Fig. 1), for each non-progressive dental condition. We then calculated condition-specific impact scores relating to each dental condition and integrated those scores with the standard estimate of treatment need for that condition, resulting in a clearer picture of need for dental treatment. For example, a child with a traditionally assessed need for periodontal treatment (CPI = 1) and whose gum inflammation affected or "impacted" in some way upon their everyday life (CS-OIDP score > 0) would be considered as having an "impact-related need" for periodontal treatment. Another child with a CPI score of 1, but where the gum inflammation is deemed to have no discernible affect on their daily life activity, is assessed as having no 'impact-related need'. For traumatic dental injuries, integration was performed for fractures of the enamel only, as fractures involving the dentine or pulp were considered as progressive lesions. We compared standard estimates of need and the respective sociodental estimates using the McNemar's test. Furthermore, we prioritized children with an impact-related need for care according to the intensity of their impacts.

Results

Of the 1126 children we contacted, 1101 gave positive consent and 1034 (91.8%) completed all of the survey. Of those we surveyed 52.4% were males and 47.6% females. The mean age was 11.3 years.

Overall, we found the prevalence of the standard assessment for treating the five aforementioned non-progressive dental conditions was 98.8%. When the assessment took into account the child-OIDP index, according to our sociodental approach, the level of overall needs was 39.5%, significantly different from the standard estimate ($P < 0.001$). For specific conditions, we found a significant difference in prevalence of needs assessed between the two approaches for every specific treatment ($P < 0.001$). The prevalences of standard and sociodental estimates of need for treatment of enamel-involved dental injuries were 20.9%

and 2.1%, respectively. The respective prevalences for enamel defects/dental anomalies were 24.9% and 6.6%; for periodontal diseases 97.0% and 26.6%; for malocclusions 35.0% and 10.5%; and for prosthodontic conditions 3.2% and 0.4% (Table 3). We categorized children in the second group with a sociodental need for any type of treatment (39.5% of the sample) by the level of severity of the impact the condition had on their everyday life into those with very little (10.3%), little (11.7%), moderate (10.3%), severe (6.5%) and very severe (0.7%).

To get a clearer picture of differences between the two approaches to assessing oral health needs, we presented the sociodental assessment prevalence (that which integrates the child-OIDP index) per 100 children with standard estimates, thus expressing sociodental assessment as a percentage of standard, normative estimates (Table 3). We found that per 100 children with a standard assessed need, the estimates of need based on the sociodental approach for the five dental conditions ranged from 12.1 (prosthodontic condition) to 30.2 (malocclusion). For every 100 children with a standard need for periodontal treatment, we found only 27.4 children had a need based on the impact the condition had on their daily lives. Similarly, 26.5 children per 100 with enamel defects had impact-related need. Taking all conditions together, we discovered that only 40 children per 100

with a standard need for treatment had a need for treatment taking into account the child-OIDP index.

The aforementioned assessments refer to the presence of sociodental treatment needs but without taking into account the levels of intensity of these various dental conditions. We found that by using different impact intensity cut-off points for determining an impact-related need, even bigger gaps in the results between the two approaches to dental care assessment emerged. For example, if those needs identified by the sociodental approach are considered present only in children with moderate or higher intensity of impacts, 17.7 children per 100 with standard needs would fall into the sociodental assessed group. There was little change in estimates of sociodental need for prosthodontics, because most of the impacts were severe or very severe. On the other hand, for dental conditions with low prevalence of severe or very severe impacts, such as periodontal disease and enamel defects with only 2.9 and 5.1 children reporting that level of intensity, respectively, the gap between the two approaches increased markedly by changing the cut-off point for determining the sociodental assessed need. The gap ranged from 27.4 and 26.5 per 100 with standard needs, when all levels of impacts were included, to 8.9 and 14.8 children respectively for including only moderate or severe impacts (Table 3).

Discussion

When we used a sociodental approach to estimate the oral health needs of Thai primary school children we saw substantially decreased estimates of need. Instead of the very high level (98.8%) of needs in the sample assessed in the standard way, our study revealed that dental care should be provided for only 39.5% whose quality of life was adversely affected by non-progressive oral conditions. The estimate of overall needs decreased by 60%, but for specific types of treatment needs the decrease was larger; from a 70% need for treating malocclusion to 88% for prosthodontic needs. This was because some children had treatment needs for more than one dental condition.

The substantial reduction of oral health needs of children when using the sociodental, instead of the standard approach, is consistent with the results of previous studies on adults.^{W22, W23, 24} Other studies also showed that using subjective measures resulted in lower amounts of needs than professional assessments.¹⁵⁻¹⁷

These marked differences have implications for dental service planning. The very high number of children identified as needing dental treatment when assessed using the standard approach had non-progressive conditions that are unlikely to affect their health. Satisfying their needs is beyond the abilities and resources of most dental services.^{3, W4, 5, W6} Conversely, our estimates of sociodental

Table 3. Standard normative and impact-related (sociodental) need estimates of Thai primary-school children

Dental condition	Prevalence		Standard normative estimate of need	Impact-related (sociodental) estimate of need ^a			
	Standard normative estimate of need	Impact-related (sociodental) estimate of need (%) ^c		All levels of impacts ^b	Little or higher	Moderate or higher	Severe or very severe
Dental injuries enamel-involved only	22.4%	3.6	100.0	16.0	13.8	11.7	7.8
Enamel defects/dental anomalies	20.9%	2.1 ^c	93.5	9.5	7.3	5.2	1.3
Enamel defects/dental anomalies	24.9%	6.6 ^c	100.0	26.5	19.9	14.8	5.1
Periodontal diseases (gingivitis, calculus)	97.0%	26.6 ^c	100.0	27.4	18.9	8.9	2.9
Malocclusions	35.0%	10.5 ^c	100.0	30.2	23.8	16.6	8.6
Prosthodontic conditions	3.2%	0.4 ^c	100.0	12.1	6.1	6.1	6.1
Any of the five dental conditions	98.8%	39.5 ^c	100.0	40.0	29.6	17.7	7.3

^a Per 100 standard needs.

^b Including all 5 levels of condition-specific impacts: very little, little, moderate, severe and very severe.

^c $P < 0.001$, comparison between impact-related (sociodental) assessed needs and standard normative assessment of needs (McNemar's test).

need were modest and they identified children with dental problems that affected their quality of life. These children therefore, are more likely to benefit from evidence-based dental care.¹⁷

Children with a sociodental need can be prioritized for treatment by the level of daily impact their condition causes; those with more severe impacts may be given a higher priority.⁴⁰ However, care needs to be taken when using this approach, so that this prioritization does not lead to social bias favouring wealthier groups who may report more severe impacts.

We found that not many Thai children experienced severe or very severe impacts. For every 100 children with standard, normative need, only 40 reported a sociodental need at all levels and only 7.3 children perceived severe or very severe disruption in their daily life. Therefore, we concluded that the overall gap in the difference between standard need and sociodental need was 60%, when considering all levels of impacts, and would be greater if higher thresholds of severity of impacts were used (e.g. 93% reduction for severe impact threshold). Different thresholds of impacts could be considered for prioritizing people according to their needs assessment level, and children with moderate or severe impacts could be of highest priority.

We have demonstrated the usefulness of integrating an OHRQoL measure into a sociodental method of needs assessment and thereby into oral health policy. When using this integration process in planning there are two important considerations. First, the application of subjective or OHRQoL measures in needs assessment should be guided by sound knowledge of natural history of diseases, in order to know whether it is progressive and whether current treatments change the life history of the disease for the better. For progressive conditions, it is inappropriate and unethical to use OHRQoL measures to identify treatment need for early stages of symptomless lesions which have not impacted on a person's quality of life.

They may do so in the absence of early intervention. Therefore, the assessment of impact-related need does not cover needs for treating progressive conditions (e.g. dental caries) and OHRQoL outcomes should not be used for them. On the other hand, it is also inappropriate to treat conditions that are unlikely to progress and do not impact on people's quality of life. In non-progressive oral conditions, like those examined in this study, the aim of dental care is to improve OHRQoL.⁴¹ Consequently, the application of an OHRQoL measure facilitates the assessment of a sociodental need, thus playing an important role in planning oral health services.

Secondly, the use of OHRQoL measures in needs assessment involves combining them with clinical measures of standard treatment needs. The link between the two assessments (standard and sociodental) is very important. Frequently, OHRQoL is measured in terms of the overall impact that various perceived problems, such as pain, functional limitation or dissatisfaction with dental appearance^{W8-W11} have on daily life. However, we found that combining this overall assessment of impact with any specific clinical treatment need is inappropriate, particularly in a high-disease population where numerous dental problems contribute to overall oral impacts. This explains the relatively limited application of OHRQoL measures to dental service planning, despite their inclusion in some national oral health surveys.^{W11, 12-14, 19}

The child-OIDP indicator is particularly useful in overcoming this limitation, as it uses condition-specific impacts, thus attributing oral impacts to specific oral conditions, and allowing their integration with needs for specific conditions assessed in the standard way. We performed the integration process for each condition at an individual level; each dental condition in a person and the impact related to it in the same individual were combined to derive a treatment need estimate for the condition for that specific person. We then summed individual assessments to

provide a population estimate. This approach makes the OHRQoL and clinical data more meaningful as integrated results reflect a more coherent picture of oral health and needs of individuals in a population.

Traditionally, oral health needs assessment incorrectly depends almost entirely on professional opinion. The omission of measures of psychosocial health or OHRQoL is a serious shortcoming of standard assessments.¹ Although perceived need often affects clinicians' decisions, this may or may not be explicit within their decision-making processes. The results of the sociodental needs assessment method are closer to those needs identified in clinical settings (patient/dentist), and therefore we conclude that the method is useful in service planning as it identifies and quantifies needs more explicitly and in line with clinical decision-making dental service needs at the population level. The new sociodental approach combines standard and OHRQoL measures on a scientific basis. With this approach, dental services should correspond more closely to health needs and focus more on improving the quality of life of populations. Moreover, it also allows for prioritization of needs according to individual's levels of daily disruption. This should contribute to more rational planning, resource allocation and service utilization.

In conclusion, the sociodental approach combining OHRQoL with standard clinical measures comes closer to current concepts of health than the traditional standard approach. We found that there was a marked difference between the standard and the sociodental needs assessment approaches, with sociodental needs being 60% lower than those identified by the standard, traditional approach. ■

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Résumé

Approche socio-dentaire visant à évaluer les besoins dans le domaine bucco-dentaire des enfants : prise en compte d'une mesure de la qualité de vie relative à la santé bucco-dentaire (OHRQoL) dans la planification des services dans ce domaine

Objectif Évaluer les besoins dentaires réels des élèves thaïlandais du primaire à partir d'une approche socio-dentaire et prendre en compte une mesure de la qualité de vie relative à la santé bucco-dentaire (OHRQoL) dans la planification des services de santé dentaire. Les résultats de cette évaluation socio-dentaire ont ensuite été comparés à des estimations standards des besoins en matière de santé bucco-dentaire des enfants.

Méthodes Un nouveau modèle d'évaluation des besoins sur le plan socio-dentaire a été mis au point et utilisé pour estimer quantitativement l'impact des diverses pathologies bucco-dentaires sur la vie quotidienne des écoliers. Une étude transversale portant sur l'ensemble des enfants de niveau 6 (11-12 ans) de la Province thaïlandaise de Suphan Buri a été réalisée. Les enfants ($n = 1034$) ont été soumis à un examen d'évaluation de leur santé bucco-dentaire, ainsi qu'à un entretien individuel visant à estimer l'impact de toute atteinte dentaire éventuelle sur leur qualité de vie. Cette évaluation a été réalisée au moyen d'un indicateur OHRQoL, le Child Oral Impacts on Daily Performances Index (child-OIDP). Les résultats obtenus à l'aide de cet indicateur ont été confrontés aux estimations fournies par des méthodes cliniques standards plus classiques, afin de générer une image plus exacte des atteintes dentaires non évolutives nécessitant réellement un traitement. Ces résultats prennent en compte l'impact de ces atteintes sur le bien-être général des enfants et sur leur capacité à avoir un fonctionnement normal et sans handicap. Il a ensuite été possible

de fixer des priorités aux besoins dentaires en fonction de la gravité des perturbations affectant leur vie quotidienne.

Résultats D'après des estimations standards ou « normatives » des besoins en matière de santé bucco-dentaire, 98,8 % des enfants auraient eu besoin de soins. En revanche, l'évaluation de ces besoins selon une approche socio-dentaire ($p < 0,001$) aboutissait à une diminution notable de la proportion d'enfants à soigner, soit un chiffre de 39,5 % seulement. Globalement, sur 100 enfants nécessitant des soins dentaires selon des critères standards ou normatifs, 40 seulement avait besoin d'un tel traitement selon des critères socio-dentaires si l'on prenait en considération l'impact de la pathologie dentaire sur leur vie de tous les jours. Les enfants ainsi identifiés comme nécessitant un traitement ont ensuite été classés selon la gravité de l'impact de leur atteinte dentaire : 7,2 % subissaient un impact lourd, 10,3 % un impact modéré et 22,0 % un impact mineur sur la qualité de vie relative à la santé bucco-dentaire.

Conclusions L'étude a relevé une différence marquée entre les besoins en matière de santé bucco-dentaire standards et ceux évalués en suivant une approche socio-dentaire, cette dernière donnant un chiffre inférieur de 60 % à l'estimation standard pour les enfants thaïlandais de 11 à 12 ans. Les niveaux d'impact sur la vie quotidienne ainsi déterminés peuvent être utilisés pour classer par priorité les besoins en matière de santé bucco-dentaire des enfants.

Resumen

Evaluación de las necesidades de atención bucodental de los niños mediante un enfoque sociodental: integración de un indicador de la calidad de vida relacionada con la salud bucodental en la planificación de los servicios correspondientes

Objetivo Decidimos determinar las necesidades de atención dental de los escolares de primaria de Tailandia. Adoptamos para ello un enfoque sociodental, incorporando un indicador de Calidad de Vida relacionado con la Salud Bucodental a la planificación de los servicios de salud bucodental. Por último, comparamos los resultados de esa evaluación sociodental con las estimaciones estándar de las necesidades de los niños en ese sentido.

Métodos Desarrollamos un nuevo modelo de evaluación sociodental de las necesidades para evaluar el grado de repercusión de diversos problemas bucodentales en la vida diaria de los escolares. Realizamos un estudio transversal de todos los niños de nivel 6 (11-12 años de edad) de la provincia de Suphan-buri, Tailandia. Examinamos a los niños ($n=1034$) para evaluar su salud bucodental y luego los entrevistamos individualmente para evaluar las repercusiones de cualquier afección dental en su calidad de vida. La evaluación se llevó a cabo utilizando el llamado índice de Impacto de la Salud Bucodental del Niño en su Vida Diaria. Integramos los resultados obtenidos mediante ese indicador con las estimaciones obtenidas usando otros métodos clínicos más tradicionales, a fin de conocer con más precisión qué afecciones dentales no progresivas requerían realmente tratamiento. Estos resultados tienen en cuenta el impacto de esos problemas en el

bienestar general de los niños y en su capacidad para desenvolverse normalmente y sin limitaciones. Pudimos así priorizar sus necesidades de atención dental en función de la gravedad de los trastornos sufridos en la vida cotidiana.

Resultados Según los métodos habituales de estimación de las necesidades de atención dental, el 98,8% de los niños requerían atención, pero el porcentaje se reducía a sólo un 39,5% cuando se empleaba el enfoque sociodental ($P < 0,001$). Globalmente, por cada 100 niños con necesidad de tratamiento dental según los criterios estándar o normativos, sólo 40 lo necesitaban según el criterio sociodental, teniendo en cuenta el impacto de su problema en la vida diaria. Los niños identificados como necesitados de tratamiento fueron clasificados además en función de la gravedad de las repercusiones del estado de su dentadura en el citado indicador: 7,2%, graves; 10,3%, moderadas; y 22,0%, leves.

Conclusión Se observó una marcada diferencia entre el enfoque habitual y el enfoque sociodental de la evaluación de las necesidades; este último arrojó unas necesidades de atención dental inferiores en un 60% entre los niños tailandeses de 11 a 12 años. El grado de impacto en la vida cotidiana puede utilizarse para priorizar las necesidades de salud bucodental de los niños.

Arabic

References

1. Sheiham A, Tsakos G. Health needs assessment. In: Pine CM, Harris R, editors. *Community oral health*. Edinburgh: Elsevier Science Limited. In press.
2. Bronkhorst EM, Truin GJ, Batchelor P, Sheiham. Health through oral health; guidelines for planning and monitoring for oral health care: a critical comment on the WHO model. *J Public Health Dent* 1991;51:223-7.
3. Murray JJ. Whither paediatric dentistry? *Int J Paediatr Dent* 1998;8:235-42.
5. Newacheck PW, Hughes DC, Hung YY, Wong S, Stoddard JJ. The unmet health needs of America's children. *Pediatrics* 2000;105:989-97.
7. Locker D. Measuring oral health: a conceptual framework. *Community Dent Health* 1988;5:3-18.
12. Chen MS, Hunter P: Oral health and quality of life in New Zealand: a social perspective. *Soc Sci Med* 1996;43:1213-22.
13. Sheiham A, Steele JG, Marcenes W, Tsakos G, Finch S, Walls AWG. Prevalence of impacts of dental and oral disorders and their effects on eating among older people; a national survey in Great Britain. *Community Dent Oral Epidemiol* 2001;29:195-203.
14. Steele JG, Sanders AE, Slade GD, Allen PF, Lahti S, Nuttall N, et al. How do age and tooth loss affect oral health impacts and quality of life? A study comparing two national samples. *Community Dent Oral Epidemiol* 2004;32:107-14.
15. Tervonen T, Knuuttilla M. Awareness of dental disorders and discrepancy between "objective" and "subjective" dental treatment needs. *Community Dent Oral Epidemiol* 1988;16:345-8.
16. Cautley AJ, Rodda JC, Treasure ET, Spears GF. The oral health and attitudes to dental treatment of a dentate elderly population in Mosgiel, Dunedin. *N Z Dent J* 1992;88:138-43.
17. Locker D, Jokovic A. Using subjective oral health status indicators to screen for dental care needs in older adults. *Community Dent Oral Epidemiol* 1996;24:398-402.
18. Robinson PG, Nadanovsky P, Sheiham A. Can questionnaires replace clinical surveys to assess dental treatment needs of adults? *J Public Health Dent* 1998;58:250-3.
19. Jamieson LM, Thomson WM, McGee R. An assessment of the validity and reliability of dental self-report items used in a National Child Nutrition Survey. *Community Dent Oral Epidemiol* 2004;32:49-54.
20. Maizels J, Maizels A, Sheiham A. Sociodental approach to the identification of dental treatment need in groups. *Community Dent Oral Epidemiol* 1993;21:340-6.
21. Allen PF. Assessment of oral health-related quality of life. *Health Qual Life Outcomes* 2003;1:40.
24. Srisilapanan P, Korwanich N, Sheiham A. Assessing prosthodontic dental treatment needs in older adults in Thailand: normative vs sociodental approaches. *Spec Care Dentist* 2003;23:131-4.
26. Gherunpong S, Tsakos G, Sheiham A. A sociodental approach to assessing dental needs of children: concept and models. *Int J Paed Dent*. In press.
33. Gherunpong S, Tsakos G, Sheiham A. A sociodental approach to assessing children's orthodontic needs. *Eur J Orthod*. In press.
34. *Oral health surveys — basic methods*. 4th ed. Geneva: World Health Organization;1997.
38. Gherunpong S, Tsakos G, Sheiham A. Developing and evaluating an oral health-related quality of life index for children. *Community Dent Health* 2004;21:161-9.
39. Gherunpong S, Tsakos G, Sheiham A. The prevalence and severity of oral impacts on daily performances in Thai primary school children. *Health Qual Life Outcomes* 2004;2:57.
40. Drotar D, Levi R, Palermo TM, Riekert KA, Robinson JR, Walders N. Recommendations for research concerning the measurement of pediatric health-related quality of life. In: Drotar D, ed. *Measuring health-related quality of life in children and adolescents*. Implications for research and practice. Mahwah, NJ: Lawrence Erlbaum Associates; 1998. p. 341-9.
41. Cohen K, Jago JD. Toward the formulation of sociodental indicators. *Int J Health Serv* 1976;6:681-7.

Table 1. Levels of dental needs and factors^a under consideration

Dental need level	Factors under consideration
Standard normative estimate of need	Clinical impairment
Impact-related (sociodental) estimate of need	Clinical impairment Oral health-related quality of life (OHRQoL)
Propensity-related need	Clinical impairment OHRQoL Behavioural propensity for treatment

^a Evidence-based treatment is a factor considered throughout the model.

Table 2. Classification of the intensity of oral impacts for each performance

Intensity of Impacts	Severity score	Frequency score	Performance score
Very severe	Severe (3) ^a	Severe (3)	9
Severe	Severe (3)	Moderate (2)	6
	Moderate (2)	Severe (3)	6
Moderate	Moderate (2)	Moderate (2)	4
	Severe (3)	Little (1)	3
	Little (1)	Severe (3)	3
Little	Moderate (2)	Little (1)	2
	Little (1)	Moderate (2)	2
Very little	Little (1)	Little (1)	1
No impact	None (0)	None (0)	0

^a Figures in parentheses are Likert-type scores.

References

1. Sheiham A, Tsakos G. Health needs assessment. In: Pine CM, Harris R, editors. *Community oral health*. Edinburgh: Elsevier Science Limited. In press.
2. Bronkhorst EM, Truin GJ, Batchelor P, Sheiham. Health through oral health; guidelines for planning and monitoring for oral health care: a critical comment on the WHO model. *J Public Health Dent* 1991;51:223-7.
3. Murray JJ. Whither paediatric dentistry? *Int J Paediatr Dent* 1998;8:235-42.
- W4. Ugur T, Ciger S, Aksoy A, Telli A. An epidemiological survey using the Treatment Priority Index (TPI). *Eur J Orthod* 1998;20:189-93.
5. Newacheck PW, Hughes DC, Hung YY, Wong S, Stoddard JJ. The unmet health needs of America's children. *Pediatrics* 2000;105:989-97.
- W6. Dental Health Division of Thailand. *National oral health survey of Thailand report*. Nonthaburi: Ministry of Public Health; 2002.
7. Locker D. Measuring oral health: a conceptual framework. *Community Dent Health* 1988;5:3-18.
- W8. Atchison KA, Dolan TA. Development of the geriatric oral health assessment index. *J Dent Educ* 1990;54:680-7.
- W9. Slade GD, Spencer AJ. Development and evaluation of the Oral Health Impact Profile. *Community Dent Health* 1994;11:3-11.
- W10. Jokovic A, Locker D, Stephens D, Kenny D, Tompson B, Guyatt G. Validity and reliability of a questionnaire for measuring child oral health-related quality of life. *J Dent Res* 2002;81:459-63.
- W11. McGrath C, Bedi R. Population-based norming of the UK oral health-related quality of life measure (OHRQoL-UK). *Br Dent J* 2002;193:521-4.
12. Chen MS, Hunter P: Oral health and quality of life in New Zealand: a social perspective. *Soc Sci Med* 1996;43:1213-22.
13. Sheiham A, Steele JG, Marcenis W, Tsakos G, Finch S, Walls AWG. Prevalence of impacts of dental and oral disorders and their effects on eating among older people; a national survey in Great Britain. *Community Dent Oral Epidemiol* 2001;29:195-203.
14. Steele JG, Sanders AE, Slade GD, Allen PF, Lahti S, Nuttall N, et al. How do age and tooth loss affect oral health impacts and quality of life? A study comparing two national samples. *Community Dent Oral Epidemiol* 2004; 32:107-14.
15. Tervonen T, Knuuttila M. Awareness of dental disorders and discrepancy between "objective" and "subjective" dental treatment needs. *Community Dent Oral Epidemiol* 1988;16:345-8.
16. Cautley AJ, Rodda JC, Treasure ET, Spears GF. The oral health and attitudes to dental treatment of a dentate elderly population in Mosgiel, Dunedin. *N Z Dent J* 1992;88:138-43.
17. Locker D, Jokovic A. Using subjective oral health status indicators to screen for dental care needs in older adults. *Community Dent Oral Epidemiol* 1996; 24:398-402.
18. Robinson PG, Nadanovsky P, Sheiham A. Can questionnaires replace clinical surveys to assess dental treatment needs of adults? *J Public Health Dent* 1998;58:250-3.
19. Jamieson LM, Thomson WM, McGee R. An assessment of the validity and reliability of dental self-report items used in a National Child Nutrition Survey. *Community Dent Oral Epidemiol* 2004;32:49-54.
20. Maizels J, Maizels A, Sheiham A. Sociodental approach to the identification of dental treatment need in groups. *Community Dent Oral Epidemiol* 1993; 21:340-6.
21. Allen PF. Assessment of oral health-related quality of life. *Health Qual Life Outcomes* 2003;1:40.
- W22. Adulyanon S. *An integrated sociodental approach to dental treatment need estimation* [thesis]. London: University College London Medical School; 1996.
- W23. Srisilapanan P, Sheiham A. Assessing the difference between sociodental and normative approaches to assessing prosthetic dental treatment needs in dentate older people. *Gerodontology* 2001;18:26-33.
24. Srisilapanan P, Korwanich N, Sheiham A. Assessing prosthodontic dental treatment needs in older adults in Thailand: normative vs sociodental approaches. *Spec Care Dentist* 2003;23:131-4.
- W25. Gherunpong S. *Developing a sociodental system of dental needs assessment in children* [thesis]. London: University College London Medical School; 2004.
26. Gherunpong S, Tsakos G, Sheiham A. A sociodental approach to assessing dental needs of children: concept and models. *Int J Paed Dent*. In press.
- W27. Shaw WC, O'Brien KD, Richmond S, Brook P. Quality control in orthodontics: risk/benefit considerations. *Br Dent J* 1991;170:33-7.
- W28. Sandy J, Roberts-Harry D. A clinical guideline to orthodontics. London: *British Dental Association* 2003.
- W29. Witter DJ, deHaan AF, Kayser AF, van Rossum GM. A 6-year follow-up study of oral function in shortened dental arches. Part II: Craniomandibular dysfunction and oral comfort. *J Oral Rehabil* 1994;21:353-366.
- W30. Socransky SS, Haffajee AD, Goodson JM, Lindhe, J. New concepts of destructive periodontal disease. *J Clin Periodontol* 1984;11:21-32.
- W31. Sheiham A. Is the chemical prevention of gingivitis necessary to prevent severe periodontitis? *Periodontol* 2000 1997;15:15-24.
- W32. Beirne P, Fergie A, Worthington HV, Clarkson JE. Routine scale and polish for periodontal health in adults. In: *The Cochrane Library*, Issue 1, Chichester, UK: John Wiley & Sons Ltd; 2005:CD004625.
33. Gherunpong S, Tsakos G, Sheiham A. A sociodental approach to assessing children's orthodontic needs. *Eur J Orthod*. In press.
34. *Oral health surveys — basic methods*. 4th ed. Geneva: World Health Organization;1997.
- W35. *Clinical practice guideline in dentistry*. Thailand: Thailand Dental Council; 2000. Available from: URL:<http://www.dentalcouncil.or.th/CPGDentistry.zip>
- W36. Brook PH, Shaw WC. The development of an index of orthodontic treatment priority. *Eur J Orthod* 1989;11:309-20.
- W37. de Oliveira CM, Sheiham A. Orthodontic treatment and its impact on oral health-related quality of life in Brazilian adolescents. *J Orthod* 2004;31:20-7.
38. Gherunpong S, Tsakos G, Sheiham A. Developing and evaluating an oral health-related quality of life index for children. *Community Dent Health* 2004;21:161-9.
39. Gherunpong S, Tsakos G, Sheiham A. The prevalence and severity of oral impacts on daily performances in Thai primary school children. *Health Qual Life Outcomes* 2004;2:57.
40. Drotar D, Levi R, Palermo TM, Riekert KA, Robinson JR, Walders N. Recommendations for research concerning the measurement of pediatric health-related quality of life. In: Drotar D, ed. *Measuring health-related quality of life in children and adolescents. Implications for research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates; 1998. p. 341-9.
41. Cohen K, Jago JD. Toward the formulation of sociodental indicators. *Int J Health Serv* 1976;6:681-7.