# Danish dentists' knowledge, attitudes and management of procedural dental pain in children: association with demographic characteristics, structural factors, perceived stress during the administration of local analgesia and their tolerance towards pain

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Summary. Objective. The aim of the present study was to describe Danish dentists' knowledge of, attitudes towards and management of procedural pain during paediatric dental care, and to assess the importance of demographic characteristics, structural factors, perceived stress during administration of local analgesia and the dentists' own tolerance towards procedural dental pain. Design. A cross-sectional questionnaire study was conducted in Denmark in May 2001. Subjects and methods. The subjects were a random sample of 30% of Danish dentists treating children. Usable information was obtained from 327 (80.3%) of the dentists in the sample. Results. One-quarter of the respondents answered that a 3-5-year-old child could report pain only with uncertainty. More than 80% of the dentists stated that they never compromised on painlessness. Very few agreed to the statement that children forget pain faster than adults. One-third agreed to, or were neutral to, the statement that all restorative care in primary teeth could be performed painlessly using N2O-O2 sedation alone. The majority of the respondents reported using three or more methods to assess the effect of their pain control methods. Almost 90% reported using local analgesia for restorative work 'always' or 'often'. A similar proportion reported using topical analgesia before injection 'always' or 'often'. Administering a mandibular block to preschool children was the procedure perceived as the most stressful (33.6%) pain control method. Demographic factors (gender), structural factors (always working alone and treating 3-5-yearold children daily), perceived stress during the administration of a mandibular block in preschool children and the dentists' own willingness to accept potentially painful dental treatment without local analgesia were associated with knowledge of, attitudes towards and management of procedural dental pain in children. Conclusions. Danish dentists treating children demonstrate concern about procedural dental pain in children. Factors amenable to change via training and reorganization into larger clinical units seem to determine their knowledge of, attitudes towards and management of procedural dental pain in children.

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## Introduction

Effective control of procedural pain is essential for successful paediatric dental care. In spite of this, relatively few studies have been conducted on the role of the dentist in the provision of painless dental care to children, and only a few have described dentists' knowledge of and attitudes towards procedural pain in children. An American study found that approximately 10% of the dentists denied children's reports of pain [1], while another study showed that Finnish dentists attach more credibility to children's reports of pain during dental treatment [2]. Lack of trust in children's ability to report pain may result in pain control during dental treatment being less than optimal [3]. It is also commonly assumed that factors related to the dentist, such as perceived stress when administering local analgesia and the dentist's own need for pain control when receiving dental care, might influence their pain management methods. Other factors which may influence dentists' knowledge of, attitudes towards and practice of pain control could be structural, such as the frequency with which young children are treated in the clinic and the interaction with colleagues that is possible in larger clinical settings. However, few empirical data are available to support this.

A 1972 Danish law mandates free dental care to all children [4]. The majority of Danish children are treated in municipal dental clinics by dentists who are employed by the municipality and almost exclusively treat children and adolescents up to the age of 18 years. Private general practitioners treat approximately 10% of Danish children. The utilization rate is high (> 95% in all municipalities). In spite of this well-established service, no studies have investigated the knowledge of, attitudes to and management of pain by Danish dentists who treat children. Such potential studies would be important for the assessment of needs for the continuing education of Danish dentists in delivery of painless paediatric dental care, for example.

The first purpose of the present study was to describe Danish dentists' knowledge of, attitudes towards and management of pain during the treatment of paediatric dental patients. Secondly, the authors wanted to determine which factors may determine Danish dentists' knowledge of, attitudes towards and management of pain by examining the association between: (1) demographic characteristics, structural characteristics, perceived stress during the administration of local analgesia and the dentists' tolerance towards pain; and (2) knowledge of, attitudes towards and management of procedural pain during dental care of children.

## Materials and methods

## Design of the sample

The sampling frame for the present study was based on membership lists from two dental associations in Denmark. Only dentists employed in a municipal dental service for children and adolescents, or dentists in private practice who treated 50 or more children per year were included, totalling 1392 dentists. A simple random sample of 30% was drawn from this population, yielding a sample of 407 dentists.

## Questionnaire

A questionnaire was developed on the basis of extensive discussions between the members of the Danish Society of Paediatric Dentistry's working group on pain and pain control\*, of whom six work in the municipal dental service, one in private practice and two have university affiliation. A first draft of the questionnaire was tested in a small pilot study that resulted in modifications leading to the final questionnaire, which was mailed to all the dentists in the sample in May 2001. They were given 2 weeks to answer and return the questionnaire in an envelope with prepaid postage. The questionnaire was number coded in order to secure the respondents' anonymity. In cases where there was no response, a new questionnaire was mailed. The questionnaire contained questions on the following items:

- 1 Demographic characteristics:
  - a gender; and
  - **b** age.
- 2 Structural characteristics:

**a** the number of dentists working in the same clinic as the respondent;

**b** the number of children served by the respondent; and **c** how often the respondent treated children in different age groups.

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**3** Stress perceived by the dentist in a number of situations relating to pain, pain control and behaviour management during paediatric dental care.

- 4 The dentist's own tolerance towards pain.
- 5 Knowledge and attitudes to pain in children:
  a knowledge of the competency of children aged 3-5 years in reporting pain relating to dental treatment; and

**b** the importance that the respondent placed on the painless dental treatment of children and adolescents, measured by their reaction to five statements.

6 Pain management practice:

**a** methods used to assess the child's pain during dental treatment; and

**b** use of topical analgesia, local analgesia,  $N_2O-O_2$  sedation, and relaxation and distraction during restorative work in children.

Most of the questions had closed answers, but the questionnaire had ample space for comments.\*

Out of the 407 dentists, 327 (80.3%) returned a questionnaire with usable information. Of the remaining 80 dentists, 76 did not answer, two were not clinically active, one practised orthodontics exclusively and one no longer treated children. The response rate was slightly higher among women than men (83.2% vs 74.2\%).

#### Statistical methods

The findings of the present study are presented first as descriptive data. Secondly, the authors calculated  $2 \times 2$  tables to assess associations between: (1) demographic characteristics, structural characteristics, perceived stress during the administration of local analgesia and the dentists' tolerance towards pain; and (2) knowledge of, attitudes towards and practice relating to pain and pain control during dental care for children. Finally, the authors performed logistic regression analyses [5].

# Results

#### Descriptive data

The majority of respondents (n = 258, 78.9%) were females, and almost half (n = 149, 45.6%) were over

Table 1. Distribution of respondents according to age and gender.

	Gende			
Age (years)	Females $(n = 258)$	Males $(n = 69)$	Total [% (n)]	
≤ 30	2.3	0.0	1.8 (6)	
31-40	20.9	7.2	18.0 (59)	
41-50	34.5	34.8	34.6 (113)	
51-60	39.1	55.1	42.5 (139)	
> 60	3.1	2.9	3.1 (10)	
Total	100	100	100 (327)	

 Table 2. Distribution of the respondents according to the clinic structure they worked in, and the clientele they treated.

Variable	Percentage
Clinic structure $(n = 321)$	
Always alone	21.2
Usually with one or two colleagues	25.9
Usually with three or four colleagues	22.4
Always with colleagues	30.5
Number of children $(n = 317)$	
< 200	6.3
201-500	11.7
501-1000	45.1
> 1000	36.9
Treating 3–5-year-old children ( $n = 320$ )	
Daily	63.8
Weekly	29.4
Every second to fourth week	3.1
Rarer than every fourth week	3.8

50 years of age (Table 1). Most (85.7%) worked in municipal dental clinics, while only 14.3% worked in general private practice.

Only one in five worked alone (Table 2). More than 80% of the respondents cared for more than 500 children, while 90% treated 3–5-year-old children weekly or more frequently.

One-quarter of the respondents answered that a 3– 5-year-old child could only report pain with 'some' or 'great' uncertainty, while the remaining threequarters thought that they could report pain with 'some' or 'great' certainty (Table 3). More than 80% stated that they never compromised on painlessness (Table 4). Approximately one-third thought that learning to cope with slight pain was part of life, while a similar proportion thought that complete painlessness during dental treatment of children and adolescents was a Utopian concept. Very few agreed to the statement that children forget pain faster than adults. Almost one-fifth agreed that all restorative care in primary teeth could be performed without pain using only N<sub>2</sub>O-O<sub>2</sub> sedation.

<sup>\*</sup>The questionnaire is in Danish, and copies can be obtained from the corresponding author (S.P.).

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Degree of certainty	Percentage
Great uncertainty	8.1
Some uncertainty	17.2
Some certainty	34.4
Great certainty	40.3
Total	100

**Table 3.** Distribution of 320 respondents according to their answer on the question, 'With what degree of certainty can 3–5-year-old children report pain relating to dental treatment?'

The respondents' pain-control assessment methods included a variety of approaches, with almost all reporting observing the child's eyes, face or body movements, while less emphasis was placed on the child's verbal report (Table 5). The majority of respondents (70.6%) reported using three or more methods to assess the effect of their pain-control. Almost 90% reported using local analgesia for restorative work 'always' or 'often', and a similar proportion reported using topical analgesia before injection 'always' or 'often'. N<sub>2</sub>O-O<sub>2</sub> sedation and distraction were both used 'always' or 'often' by approximately 60% of the respondents, while onefifth reported using relaxation (Table 6).

Giving a mandibular block to preschool children was the procedure that was perceived as the most stressful by one-third of respondents, while having to perform the same procedure in older children was perceived as stressful by very few (1.6%) of the sample. Managing preschool children in pain was also perceived as stressful by many (30.4%).

The respondents' own need for efficient pain control varied considerably with procedure. The more invasive procedures were acceptable to only one in three when performed without local analgesia (Table 7).

#### Analyses of associations

Table 8 shows that dentists working alone attached less credibility to the child's ability to report pain than those working in clinics with other colleagues [adjusted odds ratio (OR) = 0.31; 95% confidence interval (CI) = 0.20, 0.69]. Dentists reporting stress during the administration of a mandibular block in preschool children attached more credibility to the child's ability to report pain than those who did not (adjusted OR = 2.97; 95% CI = 1.57, 5.54).

Table 9 shows that the attitude that 'learning to cope with slight pain is part of life' was found less frequently in dentists who always worked alone (adjusted OR = 0.52; 95% CI = 0.27, 1.00), but more frequently in dentists who would accept the painful experience of having a hypersensitive tooth filled without local analgesia (adjusted OR = 2.11; 95% CI = 1.28, 3.82).

Finally, Table 10 shows that the frequent use (i.e. 'always' or 'often') of topical analgesia prior to injection was reported less often by male than female dentists (adjusted OR = 0.40; 95% CI = 0.22, 0.74), less often by those who would accept having a hypersensitive tooth filled without local analgesia (adjusted OR = 0.53; 95% CI = 0.29, 0.94) and more often by those who treated 3–5-year-old

 Table 5. Use of pain control assessment methods reported by 324 respondents.

Method of pain assessment	Percentage
Asking the parents	4.6
Asking the child	72.8
Observing the child's eyes and face	99.4
Observing the child's body movements	95.1
Other methods	12.7

**Table 4.** Distribution of respondents according to their answer on five different statements about the importance of pain and pain control during dental treatment of children and adolescents. Total numbers are given in parenthesis.

Statement	Agree completely	Agree almost completely	Neutral	Disagree almost completely	Disagree completely	Total [% (n)]
'I never compromise on painlessness'	16.0	65.4	9.7	5.0	3.8	100 (318)
'Learning to cope with slight pain is part of life'	11.9	20.6	16.5	24.2	26.8	100 (310)
'Complete painlessness is a Utopia'	15.1	21.0	9.8	28.5	25.6	100 (305)
'Children forget painful experiences faster that adults'	2.2	2.9	7.7	11.9	75.3	100 (312)
'All restorative care in primary teeth can be done without pain using $N_2O-O_2$ sedation'	1.0	15.3	14.1	14.4	55.3	100 (313)

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Method	Always	Often	Now and then	Rarely	Never	Total [% (n)]
Preoperative sedation	0.0	0.6	12.9	65.9	20.6	100 (311)
Premedication with analgesics	0.3	1.7	4.7	43.1	50.2	100 (297)
Topical analgesia prior to injection	67.9	17.0	8.0	5.6	1.5	100 (324)
Local analgesia	10.8	77.1	10.8	1.2	0.0	100 (323)
N <sub>2</sub> O-O <sub>2</sub> sedation	3.4	56.9	23.8	11.6	4.4	100 (320)
Relaxation	2.3	18.8	23.4	9.2	46.4	100 (304)
Distraction	6.2	56.0	22.1	8.1	7.5	100 (307)

Table 6. Respondents' distribution according to how often they reported to use different pain control methods during restorative work in children and adolescents. Total numbers are given in parenthesis.

**Table 7.** Distribution of 318 respondents according to specific procedures which they would willing to have performed on them selves without local analgesia.

Procedure	Percentage
Scaling of deep pockets	29.7
Filling of a hypersensitive tooth	26.8
Filling of a superficial cavity in 36	57.5
Drainage of an abscess	31.0
Cementation of a crown after a period with a provisional crown	60.4
Filling of a deep cavity in 21	8.2

children daily (adjusted OR = 1.70; 95% CI = 0.99, 2.91).

In none of the three analyses did adjustment for the other factors in the model influence the measures of association to any large extent.

# Discussion

The present study is the first to examine Danish dentists' knowledge of, attitudes towards and management

**Table 8.** Logistic regression analysis of the association between demographic factors, structural factors, perceived stress during the administration of a mandibular block, and dentists' tolerance of, knowledge of and attitudes towards pain, measured as their response to the question, 'With what certainty can 3–5-year-old children report pain during dental treatment?' (Hosmer-Lemeshow statistic:  $\chi^2 = 6.82$ ; d.f. = 8; P = 0.56): (OR) odds ratio; and (95% CI) 95% confidence interval.

		Three- to 5-year-old children can report pain during dental treatment with 'great' or 'some' certainty				
Variable	Total number	Yes (n)	Percentage	Crude OR (95% C.I.)	Adjusted OR* (95% C.I.)	
Demographic	characteristics					
Gender						
Female	254	187	73.6	_	_	
Male	66	52	78.8	1.33 (0.69, 2.56)	1.22 (0.61, 2.42)	
Age (years)						
≤ 50	173	126	72.8	_	_	
> 50	147	113	76.9	1.25 (0.75, 2.06)	1.20 (0.69, 2.07)	
Structural cha	aracteristics					
Always worki	ing alone					
No	251	197	78.5	_	_	
Yes	67	41	61.2	0.42 (0.24, 0.77)	0.31 (0.20, 0.69)	
Treating 3-5-	year-old children daily					
No	113	83	73.5	_	_	
Yes	204	154	75.5	1.11 (0.66, 1.88)	1.29 (0.74, 2.25)	
Perceived stre	ess during					
administration	n of mandibular					
block to prese	chool children					
No	209	145	69.4	_	_	
Yes	108	91	84.3	2.36 (1.30, 4.29)	2.97 (1.57, 5.54)	
Willing to ac	cept filling of a					
hypersensitive	e tooth					
without local	analgesia					
No	228	172	75.4	_	_	
Yes	85	60	70.6	0.78 (0.45, 1.36)	0.72 (0.40, 1.30)	

\*Adjusted for the effect of the other factors in the model.

**Table 9.** Logistic regression analysis of the association between demographic factors, structural factors, perceived stress during the administration of a mandibular block, and dentists' tolerance of, knowledge of and attitudes towards pain, measured as their response to the statement: 'Learning to cope with slight pain is part of life' (Hosmer-Lemeshow statistic:  $\chi^2 = 9.34$ ; d.f. = 8; P = 0.32): (OR) odds ratio; and (95% CI) 95% confidence interval.

		Agree completely or almost completely with the statement 'Learning to cope with slight pain is part of life'				
Variable	Total number	Yes (n)	Percentage	Crude OR (95% C.I.)	Adjusted OR* (95% C.I.)	
Demographic	characteristics					
Gender						
Female	245	79	32.2	_	_	
Male	65	22	33.8	1.08 (0.60, 1.92)	1.04 (0.56, 1.92)	
Age (years)						
≤ 50	170	54	31.8	_	_	
> 50	140	47	33.6	1.09 (0.67, 1.75)	1.19 (0.71, 1.97)	
Structural cha	aracteristics					
Always worki	ng alone					
No	243	67	35.8	_	_	
Yes	64	14	21.9	0.50 (0.26, 0.96)	0.52 (0.27, 1.00)	
Treating 3-5-	year-old children daily					
No	112	39	34.8	_	_	
Yes	194	62	32.0	0.88 (0.54, 1.44)	0.86 (0.52, 1.43)	
Perceived stre	ess during					
administration	of mandibular					
block to press	chool children					
No	207	69	33.3	_	_	
Yes	100	32	32.0	0.94 (0.57, 1.57)	0.97 (0.57, 1.65)	
Willing to acc	cept filling					
of a hypersen	sitive tooth					
without local	analgesia					
No	202	56	27.7	_	_	
Yes	108	45	41.7	1.86 (1.14, 3.04)	2.21 (1.28, 3.81)	

\*Adjusted for the effect of the other factors in the model.

of procedural dental pain in children. It is based on a random sample of Danish dentists treating children, and had a response rate of 80.3%. Since the response rate was slightly higher in females than in males, the nonresponse rate might have biased the descriptive results slightly.

The major limitation of the present study is that it is a questionnaire study with inherent problems relating to the validity and reliability of the questions. Studies conducted using personal interviews or observations, as performed by Nakai *et al.* [3], might have given more in-depth and detailed information. However, more resources would be needed to use these methods, which would have resulted in a smaller sample size. Since the present study was the first of its kind to be conducted in Danish dentists, the authors decided to aim for the larger sample size possible using a questionnaire.

The distribution of the sample according to age and gender shows that the typical dentist treating children in Denmark is a woman who is aged 40 years or older and employed in a municipal dental service.

The descriptive part of the present study resulted in a number of interesting findings. First, one in four of the respondents were not sure that children could report pain with any degree of certainty. This is contradictory to the concept that children can report pain using different scales [6]. Internationally, pain is defined as 'an unpleasant sensory or emotional experience associated with actual or potential tissue damage, or described in terms of such' [7]. This definition implies that emphasis should be placed on the child's report of pain. In light of this, the finding that one in four Danish dentists are uncertain about the ability of a child to report pain might be problematic. On the other hand, almost all stated that they observed the child's eyes, face and body movements to assess the effectiveness of their pain control. Secondly, it was found that more than 80% agreed 'completely' or 'almost completely' with a statement of never compromising on painlessness. At the same time, a large proportion indicated that 'learning to cope with slight pain is part of life' and that 'complete painlessness is a Utopia'. This might also explain why more than 15%

**Table 10.** Logistic regression analysis of the association between demographic factors, structural factors, perceived stress during the administration of a mandibular block, and dentists' tolerance of, knowledge of and attitudes towards pain, measured as their response to the question: 'How often do you use topical analgesia prior to injection?' (Hosmer-Lemeshow statistic:  $\chi^2 = 3.24$ ; d.f. = 8; P = 0.92): (OR) odds ratio; and (95% CI) 95% confidence interval.

	Total number	Uses topical analgesia prior to injection 'always' or 'often'				
Variable		Yes (n)	Percentage	Crude OR (95% C.I.)	Adjusted OR* (95% C.I.)	
Demographic characteristics						
Gender						
Female	258	203	78.7	_	_	
Male	69	42	60.9	0.42 (0.24, 0.74)	0.40 (0.22, 0.74)	
Age (years)						
$\leq 50$	178	133	74.7	_	_	
> 50	149	112	75.2	1.02 (0.62, 1.69)	1.03 (0.61, 1.76)	
Structural characteristics						
Always working alone						
No	253	188	74.3	_	_	
Yes	68	54	79.4	1.33 (0.70, 2.56)	1.20 (0.61, 2.36)	
Treating 3-5-year-old children	daily					
No	116	79	68.1	_	_	
Yes	204	162	79.4	1.81 (1.08, 3.03)	1.70 (0.99, 2.91)	
Perceived stress during						
administration of mandibular						
block to preschool children						
No	213	161	75.6	_	_	
Yes	108	80	74.1	0.93 (0.54, 1.57)	0.96 (0.55, 1.66)	
Willing to accept filling of						
a hypersensitive tooth						
without local analgesia						
No	232	179	77.2	-	_	
Yes	85	58	62.2	0.64 (0.37, 1.10)	0.53 (0.29, 0.94)	

\*Adjusted for the effect of the other factors in the model.

felt that all restorative care in primary teeth could be performed without pain using only  $N_2O-O_2$  sedation, even though studies have shown that the analgesic effect of  $N_2O-O_2$  during operative work in children is not complete [8–10] and has to be combined with local analgesia in 60% of cases requiring restorative work [11]. The frequent use of  $N_2O-O_2$  sedation by Danish dentists treating children can also be explained by the fact that Danish dentists have been licensed to use  $N_2O-O_2$  since 1955 and that the use of  $N_2O-O_2$  has been taught in the undergraduate curriculum since 1965.

Thirdly, the present authors found that Danish dentists did not typically use preoperative medication with sedatives and analgesics prior to restorative work in children and adolescents, while local analgesia with topical analgesia prior to injection was commonly used. Distraction was also often used.

Taken together, the descriptive data indicate a concern and interest on the part of Danish dentists in providing painless dental care to children and adolescents. However, the present results also reflect some uncertainty about issues relating to procedural dental pain in children. One such issue may be that pain is defined not only as a sensory, but also as an emotional experience. This definition leaves it to the patient to decide whether a procedure is painful or not, which may be difficult to fully perceive when treating small children.

Analysis of the results shows that dentists who work alone attach less credibility to a child's ability to report pain than those who never work alone. This could be explained by the potential for feedback and exchange of clinical experience that is possible in larger clinical settings. In contrast, dentists working alone less frequently agreed to the statement 'learning to cope with pain is part of life'. Dentists who experience stress during administration of mandibular blocks attach greater credibility to the child's report of pain, possibly stemming from a greater value placed upon self-reports.

It seems natural that dentists who themselves would accept potentially painful treatment without local analgesia would see slight pain as a part of life. However, this was also related to less frequent use of topical analgesia prior to injection, and thus, indicates that the care providers' own preferences may be reflected in their practice.

The finding that female dentists more frequently use topical analgesia prior to injection is in agreement with the general view that female caregivers are more empathetic. Finally, it could be argued that the association between the frequent use of topical analgesia and having to treat preschool children daily could be bi-directional: either it could be explained as being a result of a selection of dentists frequently using topical analgesia to treat young children, or by the fact that painless injections are especially important in young children.

Several questions arise from the present study, such as the influence of child anxiety and child behaviour during treatment on the dentists' pain control methods, the effect of parental attitudes, and the effect of continuing education or postgraduate training. These questions should be addressed in future studies, which preferably should have a longitudinal design in order to investigate the temporal relationship between explanatory factors and response correct.

In conclusion, the present study has shown that dentists treating children demonstrate concern about procedural dental pain in children, and that factors amenable to change via training and reorganization into larger clinical units determine their knowledge of, attitudes towards and management of procedural dental pain in children.

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**Résumé.** *Objectif.* Décrire les connaissances, attitudes et prises en charge par les dentistes danois de la douleur engendrée par les soins chez l'enfant, et évaluer l'importance des caractéristiques démographiques, des facteurs structuraux, du stress perçu durant l'administration d'une anesthésie locale, ainsi que la propre tolérance des dentistes envers la douleur liée aux procédures dentaires.

*Protocole.* Etude transversale par questionnaire menée au Danemark en mai 2001.

*Echantillon et questionnaire*. Un échantillon randomise de 30% des dentistes danois soignant des enfants. Les informations ont été obtenues de 327 (80,3%) des dentistes de l'échantillon. Résultats. Un quart des répondants ont répondu qu'un enfant de 3 à 5 ans pouvait évoquer sa douleur sans certitude. Plus de 80% des dentistes ont déclaré qu'ils ne transigeaient pas sur le silence opératoire. Très peu ont adhéré à l'idée que l'enfant oublie la douleur plus vite que les adultes. Un tiers étaient d'accord, ou restaient neutres, avec l'idée que les soins restauratifs en denture primaire pouvaient être faits sans douleurs sous sédation au protoxyde d'azote seul. La majorité des répondants ont rapporté utiliser au moins 3 méthodes pour évaluer l'effet de leurs moyens de contrôle de la douleur. Environ 90% ont déclaré employer «toujours» ou «souvent» une analgésie locale pour des soins de restauration. Une proportion similaire a rapporté utiliser «toujours» ou «souvent» un analgésique topique avant injection. Administrer une anesthésie tronculaire mandibulaire à des enfants préscolaires était la procédure perçue comme étant la plus stressante (33,6%). Les facteurs démographiques (genre), les facteurs structuraux (travailler toujours seul et traiter des enfants de 3 à 5 ans chaque jour), le stress perçu durant une anesthésie tronculaire mandibulaire chez des enfants pré-scolaires, et la propre volonté d'accepter un traitement dentaire potentiellement douloureux sans anesthésie locale ont été associés avec les connaissances, les attitudes et la prise en charge de la douleur liée aux soins chez l'enfant.

*Conclusions.* Les dentistes danois soignant les enfants sont sensibilisés à la douleur occasionnée lors des soins chez l'enfant. Les facteurs susceptibles de changer à travers une formation et une réorganisation en des unités cliniques plus grandes semblent déterminer leurs connaissances, attitudes et leur prise en charge de la douleur liée aux soins dentaires chez l'enfant.

**Zusammenfassung.** *Ziele.* Beschreibung der Kentnisse, Einstellungen und Vorgehensweise dänischer Zahnärzte im Hinblick auf Behandlungsschmerzen in der Kinderzahnmedizin, weiterhin sollten untersucht werden die Rolle demographischer Faktoren, struktureller Komponenten, empfundener Stress während der Lokalanästhesie und die eigene Toleranz der Zahnärzte gegen Behandlungsschmerz. *Design.* Querschnittstudie, durchgeführt in Dänemark im Mai 2001.

Stichprobe und Fragebogen. Eine Zufallsstichprobe von 30% aller dänischen Zahnärzte, welche Kinder behandeln. Auswertbare Informationen wurden von 327 (80.3%) der befragten Zahnärzte erhalten. Ergebnisse. Ein Viertel der Antwortenden gab an, ein 3-5 Jahre altes Kind könne Schmerz nur ungenau angeben. Mehr als 80% stellten fest, sie gingen bei der Schmerzausschaltung keine Kompromisse ein. Nur wenige stimmten der Aussage zu, dass Kinder Schmerz schneller vergessen als Erwachsene. Ein Drittel stimmte zu oder war neutral zu der Aussage, alle restaurative Therapie im Milchgebiss könne schmerzfrei unter Lachgasanwendung alleiniger erfolgen. Die Mehrzahl der Antwortenden gab an, drei oder mehr Methoden zur Erfolgskontrolle schmerzaussschaltender Maßnahmen zu verwenden. Fast 90% gaben an, die Lokalanästhesie für restaurative Behandlungen wirke 'immer' oder 'oft'. Eine ähnliche Prozentzahl berichtete die Nutzung von Oberflächenanästhesie 'immer' oder 'oft'. Die Leitungsanästhesie bei Vorschulkindern wurde als belastendste schmerzausschaltende Maßnahme bezeichnet (33.6%). Demographische Faktoren (Geschlecht), strukturelle Faktoren (immer alleine behandeln, tägliche Behandlung von 3-5 jährigen Kindern), die Stresswahrnehmung bei der Verabreichung von Mandibularis-Leitungsanästhesien und die Neigung, eigene potentiell schmerzhafte Zahnbehandlungen ohne Lokalanästhesie zu akzeptieren waren mit Kenntnissen, Einstellungen und Vorgehensweisen im Hinblick auf Behandlungsschmerzen bei Kindern assoziiert.

**Resumen.** *Objetivo*. Describir el conocimiento, actitudes y tratamiento del dolor durante el cuidado dental pediátrico por parte de los dentistas daneses y valorar la importancia de las características demográficas, factores estructurales, estrés percibido durante la administración de analgesia local y la propia tolerancia del dentista hacia el dolor en el tratamiento dental.

*Diseño*. Cuestionario transversal realizado en Dinamarca en mayo de 2001.

*Muestra y cuestionario*. Una muestra aleatoria de dentistas daneses que tratan niños. La información utilizada se obtuvo en 327 (80,3%) de los dentistas de la muestra.

*Resultados*. Un cuarto de los encuestados respondieron que los niños de 3–5 años podían indicar dolor de forma incierta. Más del 80% señaló que ellos nunca se comprometían con la ausencia de dolor. Muy pocos estaban de acuerdo con lo establecido que los niños olvidaban el dolor más rápido que los adultos. Un tercio estaban de acuerdo a o eran neutrales a la aseveración de que todos los

tratamientos restauradores en los dientes primarios podían ser realizados sin dolor usando sólo sedación con N<sub>2</sub>O-O<sub>2</sub>. La mayoría de los encuestados indicaron usar 3 o más métodos para valorar el efecto de sus sistemas de control del dolor. Casi el 90% respondieron usar analgesia local para trabajos restauradores 'siempre' o 'a menudo'. Una proporción similar señaló usar analgesia tópica antes de la inyección 'siempre' o 'a menudo'. La administración de bloqueo mandibular a los niños preescolares era el procedimiento percibido como el más estresante (33,6%) como método de control del dolor. Factores demográficos (género), factores estructurales (trabajar siempre solo y tratar diariamente niños de 3-5 años), estrés percibido durante la administración de bloqueo mandibular en niños preescolares y el propio deseo de aceptar en potencia el tratamiento dental doloroso sin analgesia local se asociaron con el conocimiento, actitudes y tratamiento del dolor en la práctica dental en los niños.

*Conclusiones*. Los dentistas daneses que tratan niños muestran preocupación sobre el dolor en la práctica dental en niños. Factores que conducen al cambio vía entrenamiento y reorganización en unidades clínicas más grandes parecen determinar el conocimiento de, actitudes hacia y el tratamiento del dolor en la práctica dental en niños.

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