Adult dental anxiety and related dentist beliefs in Danish private practices

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The aim of this qualitative study was to understand the kinds of problems that persons with dental anxiety present to private dentists in Denmark as well as dentists' beliefs about dental anxiety phenomena. Characteristics of 53 anxious patients were surveyed from 42 randomly selected private practices (PP) in Århus, Denmark. Dental anxiety (DAS) scores of PP patients before treatment were significantly lower than patients treated at the specialist clinic (acronym »FoBCeT«). In spite of this, dropouts in PP were much greater than for FoBCeT patients during the same period. Of 20 dentists interviewed in a subsample, 75% had experienced broken appointments as the most characteristic behavior, while 35% judged dental anxiety to be due to the patients' own personality, 40% blamed previous dentists and 10% pointed to a relationship problem between dentists and patients. The dentists expressed confidence about treating anxious patients, but also a need for more education about management skills. A future epidemiological study of dentist beliefs will be based on these findings.

Almost all of the literature about adult dental anxiety has focused on the perceptions and experiences of patients or persons who have dental anxiety in specialist clinics or epidemiological studies (1-6). No studies have previously presented data about dental anxiety in private practice. None have provided case-control studies to reveal behaviours compared with a standardized specialist treatment protocol. Such a case-control study has an advantage in that specialist clinics and the patient samples frequenting them have been previously described in the literature.

Furthermore, only a few studies have investigated what dentists experience when confronted with anxious patients (7-14) and these were on British, American or Swedish samples. Dentists' experiences with anxious patients is important information, since it is confirmed in a large American study (15) that the quality of the dentist-patient relationship directly effects the physical quality of dental treatment. It also seems intuitively important to understand any possible effects of dental anxiety on dentists' occupational stress and professional satisfaction.

The first aim of the present qualitative study was to compare anxious patients' thoughts and behaviours in Danish private practice settings with those of a specialist clinic using standard anxiety and behavioural measures. The second aim was to assess beliefs and experiences of private dentists involved in treatment of these patients in order to estimate influences of dental anxiety on routine dental practice and needs for professional education on the subject. The understanding gained from these qualitative results are expected to provide heuristics for item selection in a larger epidemiological survey of dentist beliefs.

Material and methods

Sample and questionnaire protocol

Forty-five private practicing (PP) dentists were selected using random number selections (16) based on a complete list of names of Danish Dental Association dentists practicing in the Århus area. Århus is considered to be a good mix of rural and urban populations that are very much like Denmark as a whole (17). For a period of over 18 months, the dentists were asked to have new patients who showed signs of dental anxiety to fill out the following questionnaires in their waiting rooms before the first appointment and again after treatment was completed. Dental Anxiety Scale (DAS) (18) is a four item scale with questions about how one would feel about 1) going to a dentist tomorrow, and waiting 2) in the waiting room, 3) for drilling or 4) for tooth cleaning each on a scale of 4 (so anxious and afraid that I'd almost feel sick) to 1 (relaxed). DAS scores range from 20 (extreme anxiety) to 4 (none). State-Trait

Table 1. Summary statistics for anxious patient sample characteristics (N = 133).

	Age (yr)			Gender		Anxiety test CDAS (dental)		STAI-T (general)		GFS (general)	
	Mean	SD	Range	Women	Men	Mean	SD	Mean	SD	Mean	SD
Specialist clinic (n = 80)	37.0	10.3	19-65	40	40	18.1	1.4	39.8	12.4	44.5	14.2
Private practices (n = 53)	31.9	7.8	18-50	31	22	15.7	3.2	37.4	10.0	40.5	12.0

Anxiety Inventory (STAI) (19) measures general trait anxiety tendencies on 20 items with scores ranging from 80 (extremely anxious) to 20 (no anxiety). STAI-T items are rated on a scale of 4 (almost always) to 1 (almost never) and include whether subjects 1) feel pleasant, 2) get tired fast, 3) feel like crying, 4) wish they were happy like others, 5) miss a lot from not deciding things, 6) feel rested, 7) feel calm, 8) let problems pile up so they can't keep up, 9) worry too much about small things, 10) are happy, 11) take things too heavily, 12) lack of self-confidence, 13) feel secure, 14) avoid facing problems, 15) feel depressed, 16) feel content, 17) are irritated by speculating too much, 18) take disappointments poorly, 19) feel mentally well-balanced and 20) get tense thinking of problems here and now. A modified Geer Fear Scale (GFS) (20, 21) measured existence of other phobias and fears with 18 items rated on a scale of 7 (terrified) to 1 (not afraid at all): 1) sharp objects, 2) worms, 3) rats and mice, 4) injection needles, 5) spiders, 6) blood, 7) heights, 8) enclosed rooms, 9) thunderstorms, 10) snakes, 11) cemeteries, 12) dark places, 13) strange dogs, 14) stinging insects, 15) auto accidents, 16) social situations, 17) open spaces and 18) other people. GFS scores range from 126 (extremely phobic) to 18 (no fears). These tests have proven reliability and clinical usefulness for these parameters of dental anxiety (22). Normative means of DAS = 9.0, STAI-T = 38.6 and GFS = 37.4 (21).

Evaluation of resultant patient behaviours and associated beliefs in private practice settings were accomplished by having the dentists and staff fill out a standardized »Patient information form« (PIF), where treatment starting date, total number of appointments, number of broken appointments, treatment end date and dentist comments were recorded (including reasons for drop-out). Results were compared with results from the specialist clinic at the *Forsknings- og BehandlingsCenter for Tandlægeskræk* FoBCeT (Dental Phobia Research and Treatment Center) in approximately the same time period, as a general indicator of effectiveness of management and treatment.

Interviews

Of the 42 Århus dentists who participated, 20 were randomly selected to be interviewed by telephone to evaluate their experiences and beliefs about the phenomenon of dental anxiety. Age, gender, number of years in practice, percentage of dental patients who have anxiety, beliefs about the primary cause of dental anxiety, beliefs about most typical characteristics of anxious patients, reports of the usual strategies pursued in treatment of the patients and assessment of educational needs required to tackle the problem were polled (12 questions).

Results

Three of the 45 dentists could not participate due to death, retirement, or having moved to a distant location. Of the 53 dental anxiety patients (Table 1) who filled out questionnaires and were treated on a first time basis by 26 of the 42 dentists, only 22 completed treatment. Reasons the 16 dentists gave for not contributing patient data during the observation period were: »saw no new anxious patients« (n=10), »the patients asked would not participate« (n=2), »kept forgetting to ask the patients« (n=2) and »no comment« (n=2). During approximately the same time period, of the 80 patients (Table 1) 72 (90%) completed treatment at the specialist clinic and 63 of these 72 (88%) had continued treatment with private dentists by one year follow-up. Twelve of 22 patients who successfully completed treatment had been treated by five of thirteen dentists whose patients responded after treatment, indicating a high degree of variance in patient acceptance of individual dentists. Broken appointments among PP dental patients were also greater per scheduled appointment (85/357 (25%) with mean of 6.7 appointments per patient) than for FoBCeT patients (99/917 (11%) with mean of 11.5 appointments per patient). DAS pre-treatment scores of the 53 private practice patients (Table 1; median = 16) were significantly different ($P<.001$) from those of FoBCeT treated patients (Table 1; median = 18). There were no significant differences in general anxiety and fear for the two samples (Table 1). STAI trait anxiety was greater than the mean value of 38.6 for adult Danes in 40% of PP cases compared with 46% of FoBCeT cases, while GFS total scores were greater than the mean (37.4) for 57% of PP patients and 55% for the FoBCeT sample. Dental ▶

anxiety change after private dentist treatment was significantly less by DAS scores (mean = 10.7; median = 10) than for FoBCeT patients (mean = 7.5; median = 7.25) (P<.001).

Specific comments from private dentists on PIF forms about each of the 53 patients indicated that these patients had a high degree of treatment avoidance where many presented only for emergency care and then did not follow up on regular treatment (Table 2).

Age range of the 20 dentists (16 men, four women) who were interviewed about general experiences with anxious patients was 35-66 years with mean of 47.6 years (SD = 8.7). Average number of years in practice ranged from eight to 40 with a mean of 21.4 yr (SD = 8.8). All 20 dentists expressed that the dental anxiety phenomenon was a very real problem that affected their daily practice routines, and all had treated anxious dental patients at some time or other. (Of the 20 interviewed dentists, thirteen had contributed data for anxious patients in the first part and had treated 30 of the 53 patients). An estimate of the frequency of anxious patients in their own practices ranged from 0.3% to 9% with mean = 1.9% of their patients (SD = 2.4). Reasons that the 20 dentists gave for causes of dental anxiety are shown in Table 3. Bad experiences with other dentists was the most frequent cause mentioned. What the dentists named as most typical behaviours presented by these patients are also shown in Table 3. The dentists experienced late cancellations and no-shows most frequently, with the most frequent excuse being illness.

Table 2. Specific comments about 53 new anxious patients by 26 private dentists on Patient Information Forms (by ranked frequency; multiple responses possible).

Dentist comments about patients	Number of dentists saying it
1. »(Patient) just didn't show up again«	19
2. »(Patient) comes regularly; is relaxed«	17
3. »(Patient) is definitely difficult to treat«	12
4. »... easy to treat once a sense of trust was established«	7
5. »... undependable«	6
5. »... left; did not pay and I took it to court«	6
6. »... is unreasonably demanding«	3
6. »... uses nitrous oxide«	3
6. »... moved out of town«	3

Table 3. Descriptions of anxious patients given by the 20 interviewed private practitioners (multiple reasons allowed).

Beliefs of 20 interviewed dentists about causes of dental anxiety	N	(%)
1. Bad experiences with other dentists	16	(80%)
2. Learned fear – friends/family; myths re. dental treatment/dentists	8	(40%)
3. Embarrassment/feelings of powerlessness in dental chair	5	(25%)
4. Fear of pain	4	(20%)
5. Patients have anxiety problems in general	3	(15%)
Most typical behaviours of anxious patients:		
1. Late cancellations/no-shows (most frequent excuse was illness)	15	(75%)
2. Treatment avoidance with or without excuses	9	(45%)
3. Worried, tense behaviours (restlessness, no sleep, doesn't look at the dentist, overreactions, talkativeness etc.)	9	(45%)
4. Physiological reactions (sweating, paling, cold hands, mouth dryness, hyperventilation etc.)	8	(40%)

When asked to draw conclusions about the behaviours and thoughts that these patients have, seven dentists (35%) described that dental anxiety was primarily a result of patients' inability to cope with the dental environment, while 8 (40%) felt that previous dentists were to blame for the problem, and two felt it was some combination of both patient psyche and trauma at the hands of other dentists. Two dentists described dental anxiety patients as belonging to one of two groups: those who try to repress signs of fear, but non-verbally show it and those who openly express the fear. All but two of the dentists thought that they could provide time enough for these patients, in spite of the extra demand on time for treatment that they require. In all, 75% (15/20) mentioned that they talked with patients as a strategy for treating their fear, while 45% named painfree treatment and small progressive steps as important treatment regimens (multiple responses allowed). 25% also named confidence in personnel/good atmosphere/feelings of control in the situation and that dentists should provide good explanations before treatment. All but one dentist felt that one can learn to improve communication skills through coursework and only one of the 20 dentists felt that dental school teaching had adequately prepared them to communicate with patients.

Discussion

The present investigation aimed to grasp a qualitative understanding of the kinds of problems that persons with anxiety for dental treatment present for private practicing dentists in

Fig. 1. Relaxation training in the dental chair at the specialist clinic.

Fig. 1. Træning i afslapning i tandlægestolen på specialklinikken.

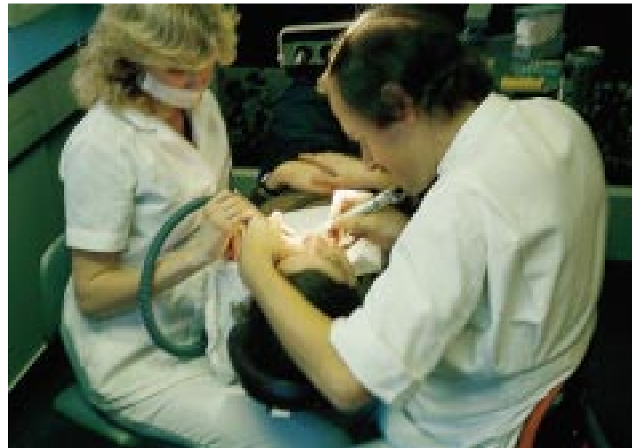

Fig. 2. A private practitioner during an operative procedure.

Fig. 2. En privatpraktiserende tandlæge i gang med tandbehandling.

Denmark. Identification and descriptions of the problems will be used as the basis for a representative epidemiological study of private dentists where prevalence of these problems and beliefs about characteristics of dental anxiety and its treatment will be studied.

However, the present qualitative study results in themselves provide considerable insight into the phenomenon of dental anxiety in Danish private practice. The dentists had much greater drop-out rates among anxious patients than did patients at the specialist clinic, even though the initial level of dental anxiety among the private patients was lower, indicating that principles used at FoBCeT clinic could benefit practicing dentists. Furthermore, general anxiety tests indicated that not all patients with dental anxiety were anxious in general. This points to a differential diagnosis of dental anxiety (5, 6, 23, 24) and that only a fraction of patients with odontophobia have complicating general anxiety symptoms.

Since all 20 dentists who were interviewed had experienced problems with the phenomenon of dental anxiety in their daily practice routines, it was possible to identify and describe consequences of anxiety for private dental practices. Findings in the dentist interviews confirmed the findings from statements of the 26 dentists who filled out reports about the specific treatments of 53 anxious patients. The main characteristics that all of these Danish dentists pointed out in both interviews and specific written reports about anxious patients were that they were unreliable, did not show up for appointments, were difficult to treat, sometimes left without paying their bills and made unreasonable demands. These factors taken together indicated an increased amount of personal stress for the dentists, although they did not seem to mind spending the extra time to treat anxious patients, according to interview data. However, it was obvious from a greater average number of appointments required for the therapeutic success at FoBCeT that even more time may be required for these patients than practitioners may realize. The practice of dentistry is dependent on patient flow to provide for a positive economic balance. This of course creates pressures for the odontologic team to produce a certain amount of work within a certain period of time. According to an American study of private dentists (25), a »good patient« is one who has a good attitude about oral health, shows respect and trust for the dentist, is on time, pays the bill and accepts the dentist's treatment plan. Even though dentists in a larger American study (9) and a Swedish study (12) have stated that patients showing anxiety create only low intensity stress, these patients may be contributing even more clinical stress than the numbers show overall due to their unpredictable behaviours and the inability to manage them. American (9, 10, 11, 13), British (11) and Swedish (12) studies namely affirm that dentists perceive the most stress when patients do not »appreciate« the dentist, especially criticizing or showing outright hostility or devaluing their oral health. Related to devaluing the dentist and the dentist's activities, dentist's images as »inflictors of pain« were also ranked highly as a stressor in both the English study (14) and an American study (9). These clinical factors were closely followed by management issues such as maintaining a practice and a schedule where patients are late, skip appointments and don't pay their bills in the studies mentioned (9-14). All of the above general descrip- ▶

tions of »not-so-good« patients are also notably descriptive of anxious patient behaviours, according to present results.

In terms of treating the anxiety of their patients, Danish dentists were similar to international colleagues in their strategies. The primary strategy of talking with patients to help them overcome dental anxiety is similar to studies in America (7,8) where up to 89% mentioned it as a worthwhile activity. Talking, taking extra time and allowing brief rest pauses during anxious moments and after discomfort are all approaches with long histories. Other specific psychological strategies can also be learned at continuing education courses (8, 26).

Similar to Swedish colleagues (12), the 20 Danish private dentists expressed confidence in treating patients with dental anxiety. However, the interviewees and other dentists who filled out patient information forms in this study expressed frustration with unpredictable behaviors of anxious treatment avoiders. Thus they also asserted that dental anxiety represented a problem requiring special skills and further dental education. Employment of principles of treatment as practiced in clinics specializing in odontophobia could allow private practitioners to treat and prevent dental anxiety and its dire consequences for oral health. ■

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Dansk resumé

Tandlægeskræk hos voksne og relaterede meninger hos privatpraktiserende tandlæger.

En kvalitativ undersøgelse af karakteristika og konsekvenser af tandlægeskræk i privat praksis blev gennemført for at kunne forstå angstens indflydelse på den daglige tandlægepraksis. I 42 tilfældigt udvalgte privatpraksis (PP) i Århus blev der behandlet 53 tandlægeskrækpatienter. Disse patienters score på Dental Anxiety Scale (DAS) (gennemsnit = 15,7 ud af 20) før behandling var signifikant lavere end scores hos en referencegruppe af patienter (gennemsnit = 18,1) behandlet ved specialklinikken Forsknings- og BehandlingsCenter for Tandlægeskræk (FoBCeT) på Tandlægeskolen i Århus. Trods dette var dropout i PP (33/53) signifikant flere end ved FoBCeT (8/80) i samme periode. Telefoninterviews med 20 af de 42 tandlæger (alder 35-66 år; 16 mænd, fire kvinder) viste at hyppigheden af angste patienter i deres praksis varierede fra 0,3% til 9% (gennemsnit = 1,9%). Af disse havde 75% oplevet udeblivelser og afbud som det mest karakteristiske for disse patienter. Af tandlægerne vurderede 35% at årsagen til angstproblemet primært var patienternes egen indstilling, hvorimod 40% gav tidligere tandlæger og dårlig behandling skylden. Andre 10% kom med udsagn som at der blot var gået noget galt i tandlæge-patient-forholdet. Kun én ud af de 20 tandlæger mente at uddannelsen i dette emne samt i patientkommunikation er tilstrækkelig. En større epidemiologisk undersøgelse vil blive gennemført på basis af resultaterne fra denne kvalitative undersøgelse.

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