

Parental Perceptions and Attitudes on Orthodontic Care

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Abstract: *The objective of this paper is to determine whether an association existed between parents' attitudes to orthodontic issues affecting themselves and their attitudes to possible orthodontic treatment for their child. It consisted of an analytical survey using a self-administered questionnaire, taken in South East England of six-hundred parents of children aged 9 years.*

The questionnaires were delivered to the parent with the help of their child's school.

Four-hundred-and-thirty-seven questionnaires were returned (73 per cent). Significant associations were found between desire by the parents for orthodontic treatment for themselves and perception of need in their child, parental satisfaction with own dental appearance and perception of need in their child, a parental history of orthodontic treatment and a determination to insist on their child's co-operation with orthodontic treatment. Logistic regression models show the odds of parents who desire orthodontic treatment themselves, perceiving need in their children are three times greater than for other parents.

1. There is some evidence that parents who desire orthodontic treatment for themselves, or who are former orthodontic patients are more likely to approve of orthodontic care in principle and to perceive a need for it in their child.

2. Further research is required to establish to what extent genetic factors are involved.

Index words: Attitude to Health; Malocclusion Psychology; Orthodontics Corrective Psychology; Parents' Psychology; Self-concept;

Refereed Paper

Introduction

Most orthodontic patients are children or adolescents (Haynes, 1991). In consequence their guardians are likely to play an important role in initiating treatment and supporting compliance. Indeed, Lewit and Virolainen (1968) reported that the parent was the most powerful single factor in the motivation for treatment. Parents were found to have noticed occlusal defects in their children almost as frequently as dentists (Gosney, 1986; Kilpelainen *et al.*, 1993). In two studies treatment was first suggested in approximately a quarter of the cases by parents (Gosney, 1986; Evans and Shaw 1987). Kreit *et al.* (1968) found that a child's relationship with its parents was of great importance for treatment compliance. Witt and Bartsch (1996) suggested 'involvement of the parents' as an 'obvious intervention in cases of inadequate co-operation'. Thus, it is important that factors influencing parental attitudes and behaviours are investigated.

Baldwin (1980) reviewed literature on appearance and aesthetics in oral health. He suggested there was some evidence that parents occasionally sought to solve problems with their own self concept by identifying with their children, orthodontically. Table 1 lists the findings of a number of studies which have included reports on parents' attitudes to orthodontic care. Work has focused

on perception of occlusion and of treatment need, rather than on motivation. It can also be seen that the degree of need perceived in different countries, varied, which may be because of cultural differences or because of the age of the children concerned.

The aim of the present study was to determine whether an association existed between parents' attitudes to orthodontic issues affecting themselves and their attitudes to possible orthodontic treatment for their child. Specifically, did a parent's dissatisfaction with their own occlusion, or their own orthodontic treatment or lack of it, affect their attitude to orthodontic treatment for their child? Did the same factors affect the perception of need in their child and/or the pressure a parent would exert on a reluctant child to comply with treatment?

Materials and Methods

The study was part of a broad investigation of parental awareness and perception of orthodontic treatment issues, some of which have been reported previously (Pratelli *et al.* 1996). The parents of 600 children aged 9 years, in two areas, Camberwell and Maidstone, in the South East of England, were asked to complete a self-administered questionnaire. Camberwell is an inner city area in London

TABLE 1 *Studies of parental attitudes to orthodontic care*

Author	Date	Country	Sample and size	Age of child	Findings
Luffingham <i>et al.</i>	1976	Glasgow U.K.	621	10–12	98% of responding parents considered orthodontics important
Prahl Andersen <i>et al.</i>	1979	Netherlands	1150 parents	NA	Parents less critical than professionals of dental appearance
Shaw	1981	Wales	50 mothers and children	9–12 years	Nearly one-third of parents failed completely to identify a dental photograph of their child.
Evans and Shaw	1987	Manchester U.K.	50 patients and their parents	12 years	86% of parents within 1 point of professionals on new scale of dental attractiveness (SCAN).
Kerr and O'Donnell	1990	Glasgow U.K.	8 lay people 8 professionals	NA	Parents and other lay judges less critical than professionals in appraising facial attractiveness
Gosney	1986	Leeds U.K.	207 parents and patients	5–16 years	Parents thought good dental appearance equally important for girls and boys. Treatment suggested by dentist in 2/3 cases
Espeland <i>et al.</i>	1992a	Norway	93 parents and children	mean 10.7	54% of all parents perceived a need for treatment. Half of the parents of children diagnosed as having great need did not perceive it.
Pietila and Pietila	1994	Finland	232 parents and children	7–8 years	38% of parents perceived a need for treatment. Perception of need differed from orthodontists' in both directions. No association between parents opinions of own dental appearance and perception of child's need.
Sheats <i>et al.</i>	1995	USA	54 parents and children	3rd grade	63% of parents perceived need for treatment in child. Need determined more by appearance than clinical status.
Birkeland <i>et al.</i>	1996	Norway	327 parents and children	10.6	Parents perception of need in their children differed in both directions, from orthodontists.

whilst Maidstone is a mixed urban/rural area of Kent. The study population was drawn from these contrasting areas to provided a wide demographic spread. Parents of children aged 9 were used as the subjects of the study as it was surmised that their children might be at the stage of tooth eruption where there was likely to be an interest in the alignment of the teeth

In each area schools, and then children, were randomly selected yielding a total of 300 children in each area. With the agreement of the Area Directors of Education and of the Head Teachers, between January and June 1993 a researcher (PP) visited the schools, and gave the participating children questionnaires to take home to the parent who 'usually took them to the doctor or dentist'. The completed questionnaires were returned to the schools in sealed envelopes to preserve confidentiality. Children who failed to return the questionnaire were prompted by their teachers and, if necessary, given a second copy to take home.

The questionnaire

Table 2 lists the questions relevant to this study. The explanatory or independent variables were: the parent's attitude to their present dental appearance, the parent's

orthodontic history and attitudes to it (questions 1–3e). Responses to the remaining questions provided the dependent variables which examined the parent's attitude in principal to orthodontic treatment for their children; their perceived need for treatment in their 9-year-old child; and their opinion on how they would manage an uncooperative child.

Data analysis

Questions 1, 2, and 4 were dichotomized by aggregating the 'no' and 'not sure' responses. The 'not sure' responses were included in the analysis because the odds ratios required were of any parent responding 'yes', rather than of just those with a definite opinion either way. A variable 'regret' was derived from the pooled responses to questions 3b and 3c. A regretful attitude toward the subject's past history was of interest, irrespective of whether arising out of lack of treatment or incomplete treatment. Question 5 was coded as three dichotomous variables. Descriptive analyses were performed and frequency distributions compared cross-tabulating each dependent variable with each independent variable. Differences were tested using chi-square tests with the significance level set at 5 per cent. The chi-squared tests

TABLE 2 Questions* used to investigate the association between a parent's personal orthodontic history and their attitudes to possible orthodontic treatment for their child

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1. Did you yourself ever receive any treatment at all to straighten your teeth?
(like wearing a brace) (yes/no/not sure)
 2. Are you happy with the alignment of your teeth? (yes/no/not sure)
 3. Please tick the box beside any of the following statements which aptly describes how you feel today
(You may tick as many boxes as you wish)
 - (a) I wish I could get my teeth straightened
 - (b) I started treatment to straighten my teeth as a child: I wish I had completed it
 - (c) I wish my parents had made me wear a brace as a child
 - (d) I had treatment to straighten my teeth but it didn't make much difference to them
 - (e) I had treatment to straighten my teeth and am happy with the result
 - (f) I would definitely want my children to have a brace if their teeth were crooked†
 - †4. Do you think that your 9-year-old child may need to have a brace to straighten his/her teeth?
(yes/no/not sure)
 5. Suppose you felt that your child needed a brace but he/she didn't want to wear one. Would you:
(tick one)
 - †(a) Insist he/she did anyway
 - †(b) Leave it to the child to decide
 - †(c) Start the treatment and hope the dentist would make the child co-operate
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*The same questionnaire contained questions used to investigate other orthodontic issues.

†Indicates a dependent variable.

did not take account of possible confounding between variables, but were used to assist the interpretation of the subsequent multiple logistic regression analyses. All the independent variables were included in a forward stepwise logistic regression analysis to assess the individual effect of each variable after adjusting for the effect of all others in the model. In all, five such analyses were performed, one for each of the dependent variables marked in Table 2. Cases with incomplete data sets were excluded from the analysis.

Results

In all, 437 questionnaires were returned (73 per cent). Not all questions were answered by every respondent. Numbers of complete data sets available for the five logistic regression analyses ranged from 390 to 417. Ninety-four parents (22 per cent) had received orthodontic treatment themselves. Ten of these said treatment had made no difference. The variable 'treatment made no difference' was excluded from further analyses because of the small number of positive cases.

Parents' attitude in principle to orthodontic treatment for their children

Eighty-five per cent of all the respondents indicated their approval in principle of orthodontic treatment for their children. Table 3 shows that the percentage approving was highest among parents who wanted treatment for their own occlusion or who regretted not having been treated. Logistic regression analysis (Table 4) showed that the odds of expressing approval for treatment for their children were ten times greater for the parents who desired treatment for themselves

Parents' perception of need in their 9-year-old child

Just over a third of the parents perceived a need for orthodontic treatment in their 9-year-old child. Significantly more parents who had been treated themselves, or who desired treatment, or regretted not being treated, or were dissatisfied with their own occlusion, perceived orthodontic need in their child (Table 3). The stepwise regression model was more parsimonious; odds were significantly increased only for treated parents and those desiring treatment themselves (Table 4).

Parents' opinions on how they would manage an unco-operative child

Four-hundred-and-eight parents indicated how they would act if their child did not want treatment. Fifty-five per cent said they would insist their child accepted treatment, 37 per cent that they would start treatment and hope the dentist would persuade their child to co-operate, 8 per cent said they would leave their child to decide. The logistic regression model for parents indicating they would insist their child accepted orthodontic treatment, included only parental treatment experience; the odds on indicating an insistent attitude were increased for treated parents, by a factor of 1.7 (Table 4). No significant relationships were found between the other child management options and any of the independent variables.

Discussion

The present study focuses on parental orthodontic history and certain psycho-social factors termed identification factors by Baldwin (1980). The logistic regression models developed have little predictive value for individual cases.

TABLE 3 Significant associations between parental characteristics and parents attitudes to orthodontic care

<i>Desire orthodontic care for their children in principle</i>			
	<i>n</i>	% Ticking statement	<i>P</i> value from χ^2 test
Parent's orthodontic history			
Parent had treatment	94	95	<0.005
Parent not had treatment	340	82	
Parent's attitude to own history			
Parent desires treatment themselves	46	98	<0.05
Parent doesn't desire treatment	391	83	
Parent regrets not having/earring appliance	47	98	<0.05
Parent has no regrets	390	83	
<i>Perceive a need for orthodontic treatment in their child aged 9</i>			
Variable	<i>n</i>	% Responding yes	<i>P</i> value from χ^2 test
Parent's Orthodontic History			
Parent had treatment	90	52	<0.001
Parent had not treatment	333	29	
Parent's attitude to own history			
Parent desires treatment themselves	46	57	<0.001
Parent doesn't desire treatment	379	31	
Parent regrets not having/wearing appliance	47	57	<0.001
Parent has no regrets	378	31	
Parent's attitude to own dental occlusion			
Satisfied	315	32	<0.05
Not satisfied/not sure	94	45	<0.05

TABLE 4 Odds ratios for parental attitudes to their child's possible orthodontic care

Independent variable	Odds ratio	95% confidence interval	p value
<i>Desire orthodontic care for their children in principle (n = 417)*</i>			
Parents had orthodontics themselves	2.8	1.8, 3.7	<0.05
Parents desire treatment	10.3	8.3, 12.3	<0.05
<i>Perceive a need for orthodontic treatment in their child aged 9 (n = 407)*</i>			
Parents had orthodontics themselves	2.9	2.4, 3.4	<0.001
Parents desiring treatment themselves	3.3	2.7, 3.9	<0.001
<i>Would insist an un-willing child co-operated (n = 390)</i>			
Parents had orthodontics themselves	1.7	1.2, 2.2	<0.05

*n = Number of cases entered into logistic regression analysis.

Their purpose was to identify factors within the complex network of intra and inter personal processes that contribute to the tripartite (clinician, parent and patient) working relationship common in orthodontic practice.

The results suggest that parents' attitudes to their own orthodontic history may affect their attitudes to and perception of their child's orthodontic treatment require-

ments. One interpretation of these results might be that it is the inherited malocclusions in their offspring that increase the parents' desire for their children to be treated. However, the assumption of a genetic connection may be unwarranted. Pietila and Pietila (1994) found the percentage of children with clinical need was the same both for families with and without a history of active orthodontic

treatment. Harris and Smith (1980) found that 'the genetic contribution to occlusal variation is quite low'. Other studies have shown only a moderate correlation or association between clinical status and a desire for treatment (Espeland *et al.* 1992a; Sheats *et al.* 1995; Birkeland *et al.* 1996); patients and parents desired treatment when it was not indicated clinically, and vice versa. A second interpretation of the results of the present study is that the parental history may be producing a psychological effect on the parent's attitude rather than a genetic effect on the child.

Pietila and Pietila (1994) in Finland did not find parents dissatisfied with their own occlusion more likely to perceive orthodontic treatment need in their children. In that study, the 'not sure' responses were excluded from the analysis; they were included in the present study. Re-analysis of the present data excluding 'not sure' responses found the difference increasingly significant. The subjects of the U.K. study were slightly older and there may have been other cultural differences. Parental dissatisfaction with own occlusion did not appear in the final regression model in this study because it was highly correlated with another independent variable, an expressed desire for orthodontic treatment in the parent.

Treated parents were found to have marginally increased odds (1.7) of expressing a determination to make a reluctant child co-operate with treatment. However, the question asked (Table 2) gave only rather crude choices; considerably more evidence would be needed to draw any firm conclusion. Whether increased parental insistence is counter-productive in securing co-operation also needs further investigation.

Apart from the effect of parental orthodontic history factors, the results confirm a high level of approval for orthodontic treatment among the parents in general. In Glasgow, a similar conclusion was drawn about parents within the general public domain (Luffingham and Campbell, 1976). The questioning in the present study was less direct. It is argued that the indirect approach adopted, reduced the likelihood of leading respondents to express particular opinions. Hence, the evidence from the present study strongly indicates a generally approving attitude among parents. Further investigation would be required to establish the truth of the counter argument that some parents, despite instructions to the contrary, felt compelled to tick at least one item.

Conclusions

1. There is some evidence that parents who desire orthodontic treatment for themselves, or who are former orthodontic patients are more likely to approve of orthodontic care in principle and to perceive a need for it in their child.
2. Further research is required to establish to what extent genetic factors are involved.

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