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Adult Orthodontic Patients in Primary Care and their Motivation for Seeking Treatment

Abstract: The study aims to provide information on why adults seek orthodontic treatment in a primary care setting. One hundred patients self-completed a questionnaire previously validated in a secondary care setting. Females accounted for 73% (n = 73) of respondents and the mean age for respondents was 29 years (range 17–50). The main reasons for wanting orthodontic treatment were to straighten their teeth (85%) followed by wanting to improve their smile (79%). The main perceived benefits of orthodontic treatment were an improved appearance (79%), being less likely to be self-conscious about their own smile (57%) and improved self-confidence and/or self-esteem (52%).

Clinical Relevance: Knowledge of motivating factors of adults seeking orthodontic treatment may help reduce patient dissatisfaction with treatment outcomes.

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In recent decades, demand for adult orthodontic treatment has grown rapidly worldwide, with several authors remarking on the increase in adults seeking orthodontic treatment.^{1–3} While information has been published on the motivation characteristics of adult orthodontic patients in a teaching hospital setting,^{1,4} there is at present very little data on motivational factors in primary care in the United Kingdom.

Over 40 years ago, Edgerton and Knorr suggested that the most crucial factor in determining and predicting patient satisfaction with treatment for cosmetic surgery was the source of motivation.⁵ This hypothesis can be applied to many types of treatment, including orthodontic treatment. Adults have been considered to be excellent orthodontic patients with a high degree of motivation and co-operation; however,

expectations can be high.²

Motivation has been described as the act or process of giving someone a reason for doing something, as well as a force or influence that causes someone to do something.⁶ This motivation can be external or internal⁵ and, while orthodontic treatment for children is often the result of a parental decision (external motivation), adults usually seek treatment due to their own desire to achieve a certain treatment outcome (internal motivation).

Although not every person may be suitable for orthodontic treatment, it has been suggested that internally motivated patients are more likely to be satisfied with the results of their treatment.⁵

Therefore, there is an importance for clinicians to understand the motives of their prospective patients. This should ensure

treatment objectives are allied with those of the patient. Suggestions that this should reduce patients' dissatisfaction with their treatment outcome have been made and, if we are better able to understand the needs of our patients, we are likely to deliver a more optimal treatment outcome.⁴

This study aims to provide information on why adults seek orthodontic treatment in primary care. This knowledge of motivating factors may help reduce patient dissatisfaction with treatment outcomes.

Materials and method

A validated, patient-centred questionnaire for assessing motivating factors of adult patients seeking orthodontic treatment was previously developed and used in a teaching hospital setting.⁴ Consent

was obtained from the authors of this study in order to use the questionnaire in the present study.

The questionnaire was developed using a focus group followed by face-to-face interviews with a sample of clinicians and patients. This was followed by finally piloting the questionnaire on adult orthodontic patients in a teaching hospital setting.

The format was one of closed-ended multichotomous and dichotomous questions with either yes or no choices, or multiple tick boxes. These were used to yield information on reasons for seeking orthodontic treatment, perceived benefits of treatment, previous orthodontic experience and barriers to previous treatment. Participants were able to choose all responses that applied.

Additionally, for the present study, participants were asked on what they perceived to be the most negative aspects of having orthodontic treatment and, again, all factors that applied could be selected. Demographic details were also collected to include gender, age and marital status.

Consecutive adult patients attending for a new orthodontic consultation were provided with a questionnaire to complete voluntarily before their consultation. This was regardless of both their presenting malocclusion and the type of orthodontic treatment they were seeking. Patients under the age of 18 were excluded. The treatment co-ordinator provided a consent form attached to the questionnaire to the potential participant and outlined the purpose of the study. The consent form reassured participants that their access to orthodontic treatment would not be affected by either their agreement or refusal to take part in the study.

Participants were asked to sign the consent form and detach it from the questionnaire to ensure that the responses in the questionnaire were anonymous and confidential. The consent form was then returned to the treatment co-ordinator. The participant completed the questionnaire in the treatment co-ordinator's room; that is a non-clinical environment. A box was provided on the reception desk where the questionnaire could be deposited.

Data were analysed using the Statistical Package for Social Sciences (Version 20). Descriptive statistical tests were performed and frequency distributions were computed.

Results

One hundred participants completed the questionnaire over a 4-month period in 2014. Two patients decided not to complete the questionnaire after reading the consent form. Females accounted for 73% (n = 73) of respondents and males 23% (n = 23). The mean age for respondents was 29 years (range 17–50). Sixty-two percent of respondents were single, 16% married, 12% co-habiting and the remaining remarried (3%), separated (3%), widowed (3%) or divorced (1%).

The main reasons for respondents wanting orthodontic treatment are shown in Table 1. Respondents cited a desire to straighten their teeth (85%) as one of the main reasons, followed by wanting to improve their smile (79%).

Respondents were asked if it was their own decision to attend for the consultation and 90% responded 'yes'. The remaining 10% were prompted by either their dentist (8%) or a member of the family (2%).

Respondents were next asked if any other factors had influenced their decision to have orthodontic treatment and 36% responded 'yes'. Twenty five percent of respondents were influenced by somebody they knew who was in treatment or had orthodontic appliances (11% did not specify who, a friend in 9%, family member in 3% and existing patient in 2% of cases). Eleven percent felt that they were influenced by a need to look good in today's society and 3% because they were due to get married. No respondents were influenced by the following factors: something they had read; something they had seen on television; a split with a partner; recently having children; having lost weight and peer group pressure.

The main perceived benefits of orthodontic treatment are shown in Table 2. An improved appearance was the most frequently cited benefit (79%), followed by being less likely to be self-conscious about their own smile (57%) and improved self-confidence and/or self-esteem (52%). Four percent of respondents felt that their job prospects would improve as a consequence, while 3% felt that they were more likely to find a partner!

Ten percent of respondents reported having been teased or receiving negative comments about their teeth. Of these, 80% said that this directly influenced their decision to have orthodontic treatment.

Previous fixed orthodontic treatment had been undergone by 42% of respondents. Of those who did not previously receive treatment, the reasons given by respondents are shown in Table 3. Treatment never being previously recommended was the most common reason (19%). Eight percent selected 'other' and reasons here included baby teeth still being present, having been at boarding school, an active digit habit and poor oral hygiene.

The additional resources that the respondents may have used to obtain further information about orthodontic treatment are shown in Table 4. Fourteen percent had not used any other resources. The Internet was the most popular resource and was used by 71% of respondents.

Perceptions of the most negative aspects of having orthodontic treatment are shown in Table 5. Treatment cost (70%), the look of the appliances (54%) and the duration of treatment (48%) were the most common concerns. Two per cent of respondents selected other and the reasons given were a difficulty in eating after commencing orthodontic treatment and fear of extractions.

Respondents were finally asked if they would consider, or have had any other cosmetic dental or plastic surgery procedures

Reasons for wanting orthodontic treatment	%
To straighten my teeth	85
To improve my smile	79
To improve the appearance of my face	24
Because I heard about braces you cannot see	23
To improve my 'bite'	20
To close spaces	19
To improve cleaning/toothbrushing	13
Previous treatment did not work	13
To stop my teeth wearing away (because of my bite)	9
To improve my speech	2
To make another type of dental treatment for my teeth easier	0

Table 1. Reasons for respondents wanting to have orthodontic treatment.

Perceived benefits of having orthodontic treatment	%
Improved appearance	79
Less likely to be self-conscious about their smile	57
Improved self confidence/self-esteem	52
More confidence when talking to new people	24
Better job prospects	4
More likely to find a boyfriend/girlfriend	3

Table 2. Respondents' perceived benefits of having orthodontic treatment.

Reasons for not having fixed appliance treatment previously	%
Treatment was never previously recommended	19
Invisible or discreet braces were not available before	15
I could not afford treatment	14
I did not want to wear braces as a teenager	14
The dental problem only occurred recently	7
I did not realize adults could have braces	5
My parents were unaware of brace treatment	4
My fear of dentists	2
Orthodontic treatment was not available in my area	2
Other	8

Table 3. Reasons given by respondents for not having fixed appliance treatment previously.

for their teeth or any other part of their body. Sixteen percent of respondents answered 'yes' to this question and of these eight did not specify what procedure they would consider, or have had. Dental procedures included crowns (n = 1), implants (n = 1), veneers (n = 2) and whitening (n = 1). Non-dental procedures were botox (n = 1), otoplasty (n = 1) and rhinoplasty (n = 1).

Discussion

This cross-sectional study set out to gain information on why adult patients seek orthodontic treatment in a primary care setting. A questionnaire that was developed and successfully used in another study to gain the same information on hospital patients was adopted for the present study.⁴ The questionnaire had been formulated to be psychometrically sound and patient-centred and this allowed it to be adopted for primary care with virtually no modification. Additionally, respondents were asked about what they perceived to be the most negative aspects of having orthodontic treatment in the hope that the responses would identify any barriers to adult orthodontic treatment.

Females made up 73% of the respondents, which is consistent with other studies on adult orthodontic patients.^{1,4,7,8} The mean age of respondents in the present study

was 29 years, which is a slightly lower age than one previous study,⁴ but slightly higher than two other studies.^{7,8}

Most respondents (85%) were seeking orthodontic treatment in order to straighten their teeth followed by a desire to improve their smile (79%) and this is not too dissimilar to the percentages in the study by Pabari *et al* (78.5% and 68.1%, respectively) who investigated teaching hospital adult patients.⁴ Similarly, other studies have also found a wish to improve dental appearance as main motivating factors for adults.^{7,8} Only 20% of respondents were seeking to improve their bite and 19% to close spaces, while in a teaching hospital setting this number was 40.7% and 39.3%, respectively.⁴ This is perhaps a reflection of the adult hospital population comprising more severe cases often requiring orthognathic surgery and other interdisciplinary treatments.¹

The rise in adult orthodontics has been attributed to the growth in discreet orthodontic treatment options.³ Almost a quarter of respondents (23%) were seeking treatment because they had heard of treatments that could not be seen, confirming that adults are perhaps more open to orthodontic treatment because of the growth of aesthetic brackets, lingual systems and aligner treatments. Pabari *et al*

found only 2.2% of teaching hospital patients sought treatment because of aesthetic treatment options and the authors predicted that the percentage might be higher if the same question was put to adults in private practice.⁴

The vast majority of respondents (90%) said that it was their own decision to attend for the consultation, which is considerably higher than other studies that found approximately half of respondents reported attending due to their own decision.^{4,7} The high numbers of internally motivated patients who are seeking treatment in the present study are encouraging. It has been suggested that internally motivated patients who are seeking a particular outcome due to their own desires are more likely to be satisfied with their treatment results.⁵

When patients were asked about other factors which had influenced their decision to have orthodontic treatment, a quarter were influenced by someone they knew who was in treatment or had orthodontic appliances, and 11% felt a need to look good in today's society, which are the same two main factors identified in another study.⁴ The importance of identifying these factors has been raised in order to help clinicians understand why patients seek treatment.⁴

The main perceived benefit of orthodontic treatment (improved appearance) was 79% and this was comparable with the 77.8% in the study of teaching hospital patients.⁴ There was, however, a noticeable difference in the number of respondents who felt that they would have improved confidence, when talking to new people, in the present study (24%) compared to the teaching hospital study (60%).⁴ The main explanation for this difference may again be that the hospital setting had more severe cases and, in such a population, a bigger impact could be had on confidence when talking to new people. Four percent of respondents felt that their job prospects would improve as a consequence of orthodontic treatment. This perhaps reflects the importance some individuals place on the need for an aesthetically pleasing dentition to further their career.

Teasing or receiving negative comments about their teeth had been experienced by 10% of respondents, which is in stark contrast to the 45.9% who had such experiences in the teaching hospital study.⁴ Again, it can be speculated that this difference may be due to the milder orthodontic problems that may be presenting in primary care.

Retreatment patients have been

Additional resources used to find out about orthodontic treatment	%
Internet	71
Discussion with my own dentist	35
Speaking to adults who have had braces	35
None	14
Magazine/newspaper articles	5
Leaflets	1
Speaking to children/adolescents who have had braces	0
TV/radio	0

Table 4. Additional resources used by respondents to find out more about orthodontic treatment.

Perception of most negative aspects of having orthodontic treatment	%
Cost of treatment	70
Look of the braces	54
Duration of treatment	48
Pain of the braces	31
Difficulty in maintaining oral hygiene	11
Multiple visits	8
Other	2

Table 5. Respondents' perceptions of the most negative aspects of having orthodontic treatment.

found to have a good perception of dental aesthetics and strong motivation⁹ and, in the present study, 42% of respondents had previously undergone fixed orthodontic treatment. This is considerably higher than the numbers found in hospital cases (25%)¹ and (21.5%).⁴ Treatment never previously recommended (19%) was the main reason for not having treatment before, which was also the main reason in the teaching hospital study but was reported by almost half of respondents (48.1%) in that study.⁴ This may be explained by the fact that hospital patients may include a proportion of orthognathic cases in whom treatment may have been delayed and not recommended earlier.

When questioned about additional resources that respondents had used to obtain further information about orthodontic treatment, 71% said that they had used the Internet. Information available on the Internet is, to a large extent, unregulated and this can be of concern. The need for orthognathic information to be validated and up to date has been raised,¹⁰ as well as information regarding orthodontic extractions to be of high quality.¹¹

Aspects of orthodontic treatment that were considered most negative by respondents were treatment cost (70%), the look of the appliances (54%) and the duration of treatment (48%). In this study, 23% of respondents had sought treatment because they had heard of treatments that could not

be seen, however, the increased laboratory costs associated with lingual systems,¹² and Invisalign,¹³ may be a cause for concern for adult patients.

Sixteen percent of respondents said that they would consider, or have had other cosmetic dental or plastic surgery procedures for their teeth or any other part of their body. This is in contrast to the 36.1% of patients in the teaching hospital study and the authors highlighted the importance to recognize such patients at an early stage as they may have less realistic expectations.⁴

This study focused on adult motivational factors for orthodontic treatment in primary care. Any further work in such a setting could also measure self-esteem, anxiety or depression, and body image and facial body image. This additional knowledge could further help understand patient expectations and thereby reduce the risk of patient dissatisfaction with treatment outcomes. Data collection on the severity of the malocclusions presenting for consultation in primary care would also add an additional dimension to any future study.

Conclusions

- Most respondents were seeking orthodontic treatment in order to straighten their teeth and/or improve their smile.
- Almost a quarter of respondents were seeking treatment because they had heard

of treatments that were discreet.

- The vast majority of respondents said it was their own decision to attend for the consultation.
- Just under half of respondents were seeking a second course of fixed appliance treatment.
- No previous recommendation for treatment was cited as the most common reason for not having had orthodontic treatment before.
- The cost of treatment, look of the appliances and duration of treatment were considered the most negative aspects of having orthodontic treatment as an adult.

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