The impact of treatment cost on low SES families: an orthodontic viewpoint

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Background: It is reported that in New Zealand financially disadvantaged adolescents are less likely to access orthodontic treatment than the more affluent in society.

Objectives: The aim of the study was to investigate the attitudes of a group of New Zealand orthodontists towards the current fee-for-service model of treatment funding. A second aim was to explore orthodontists’ perceptions of how the affordability of orthodontic treatment affects low socio-economic families.

Methods: As part of the project, 11 volunteer orthodontists were interviewed. A subsequent content analysis of the collected data was performed.

Results: Most participants reported that parents would feel inadequate if they were unable to secure orthodontic treatment for their child; however, some participants also indicated that it was common for parents to ‘go without’ to fund their child’s treatment. Most participants maintained that the government should only fund treatment for severely disabling malocclusions but not other treatments due to the limited health budget and orthodontic treatment being primarily considered for aesthetic reasons. Some participants reported that if the government funded orthodontic treatment, it would result in over subscription and compromised standards of care.

Conclusion: Despite some low socio-economic families being unable to access orthodontic treatment because of the expense, the current fee-for-service model may be the best method for delivering high standards of orthodontic care.

Introduction

Previous studies have reported the detrimental effects that a malocclusion might have on an adolescent’s psychosocial wellbeing (e.g., low self-esteem, bullying, social withdrawal, school truancy and depression). A malocclusion has also been linked with breathing, speech and mastication difficulties and pain in the craniofacial region. Consequently, many adolescents seek orthodontic treatment to improve their appearance along with their psychosocial and physical wellbeing.

In New Zealand (NZ), orthodontic treatment is predominately supported on a fee-for-service basis, although the government funds orthognathic surgery and orthodontic treatment for some birth conditions, including cleft lip and/or palate. Fee-for-service funding means that low SES adolescents could miss out because their parents are unable to afford treatment. A national study highlighted that people from low SES circumstances were less likely to access orthodontic treatment after being informed by dental professionals of the need.

In NZ and Australia (and many other countries), orthodontic community initiatives have been established to help low SES adolescents access treatment. In Australia, a number of orthodontists volunteer for the Give a Smile™ (GAS) campaign, while in NZ, 82% of the members of the New Zealand Association of Orthodontists (NZAO) volunteer for the ‘Wish For A Smile’ (WFAS) initiative. Adolescents accepted for treatment through WFAS must have their
malocclusion rated as severe by a dental professional and be aged between 11 and 16 years at the time of application.

Many national and international studies, which have primarily been quantitatively reporting statistical data, have revealed that low SES adolescents are less likely to seek orthodontic care.12-15 Nevertheless, orthodontists who volunteer for community initiatives such as the WFAS and GASTM programs are likely to have unique insights into the impact that the failure to receive treatment has on low SES families. The present study aimed to explore the perceptions of a group of NZ orthodontists regarding the financial inability to access orthodontic treatment and its effects on low SES families. A second aim was to investigate the family's perceptions of the ‘fairness’ of fee-for-service funding in NZ when low SES adolescents are overlooked for treatment.

Methods

After approval was granted from the University of Otago Ethics Committee (reference number 17/117) in April 2017, orthodontists who volunteered for the ‘WFAS’ program were contacted via email and informed of the study. Those who expressed interest were subsequently emailed copies of the information sheet and consent forms. Once informed consent was received, 11 participants were recruited. The participants were purposively sampled in an attempt to secure at least one orthodontist from each of NZ’s major urban centres, a balance of male/female orthodontists, and of orthodontists working in urban/rural and sole/group practices (although this depended on the volunteers). Demographic information about the participants is reported in Table I.

The 11 volunteer participants were interviewed via a recorded 20-40 minute telephone conversation conducted by the first author. The interview schedule was comprised of 27 open-ended questions designed to gather detailed data on the participants’ WFAS work. The present article focuses on the participants’ responses to two of the questions:

1. In general, how do you think the inability to access orthodontic care due to the low SES of a parent/guardian impacts on an adolescent and their family?
2. Do you think it is fair that young people’s orthodontic care is not funded by the State as in other countries? How would you feel if the government funded care?

A simple inductive coding and content analysis of the data was undertaken.16 Participants’ responses to each question were pasted into two electronic documents and compared. Particular words, patterns or, alternatively, themes that were repeated across the participants’ responses were identified and coded.17

Table I. Demographic information about the participants

| Participant | Gender | Practice type                  | Years of practice | Years volunteering for WFAS | Patients treated through WFAS |
|-------------|--------|--------------------------------|-------------------|----------------------------|-------------------------------|
| 1           | F      | Urban group practice           | 4                 | 3                          | 1                             |
| 2           | F      | Rural group practice           | 13                | 6                          | 4                             |
| 3           | M      | Urban group practice           | 19                | 6                          | 4                             |
| 4           | M      | Rural group practice           | 16                | 6                          | 9                             |
| 5           | M      | Urban corporation practice     | 23                | 4                          | 10                            |
| 6           | F      | Urban sole practice            | 6                 | 6                          | 4                             |
| 7           | F      | Urban group practice           | 10                | 4                          | 9                             |
| 8           | M      | Urban contracted to corporation| 34                | No longer volunteers        | 1                             |
| 9           | F      | Urban group practice           | 8                 | 2                          | 1                             |
| 10          | M      | Urban and rural sole practices | 31                | 6                          | 5-6                           |
| 11          | M      | Urban sole practice            | 38                | 6                          | 4                             |
interpretation or reference to a complex theoretical framework.\textsuperscript{18}

\section*{Results}

The three themes that emerged from the analysis of the participants' responses are reported in the subheadings below. Participants' comments are quoted verbatim.

\subsection*{1. Being a good parent and doing what is best for their child}

All but two participants maintained that a parent would feel regretful if they were unable to afford orthodontic treatment for their child. The remaining two participants said that there was likely to be variation in the parents' perceptions due to the relevance and importance that they placed on orthodontic treatment. For instance, after the participants were asked if they thought a parent would feel upset if they could not secure orthodontic treatment for their child, participant 4 stated 'I suppose it depends on the parent' and participant 5 said 'if they perceive it as a need, then yes'. The nine remaining participants' responses to the same question were similar and centred on a parent's desire to do 'what's best for their kids' (participant 8). However, some, like participant 6, reported that an inability to 'afford to put groceries on the table or give their kids lunch' meant that some low SES parents were unable to access orthodontic treatment.

Despite the financial hardship faced by some parents, two participants explained that some parents go to considerable efforts to secure funding, or deny themselves luxuries to access orthodontic treatment for their child:

P6: We have parents coming in who ... really want to pay for treatment for their kids because they wished they'd ... had treatment ... there [are] a lot of parents ... who can't afford treatment that have gone to all lengths to find some form of funding.

P4: I see people, who give up ... replacing their car, or giving up going on holiday for a year, or Mum will get an extra job or whatever, to do anything they can to get their kid's orthodontic treatment.

Alternatively, participant 3 also stated that a number of low SES adolescents have their 'treatment paid for by their grandparents, ’cause the parents are not able to do that. It's commonplace these days'.

By comparison, participant 10 said that some low SES parents were under the impression that orthodontic treatment has to be paid in full prior to treatment, which meant that some miss out.

There's some preoccupation with the fact that they need to do a lump sum, so need to pay a lot of money. Where ... if they can't afford it ... we [arrange] another payment term for them ... But there's a lot of preoccupation ... people ... have opinions ... that are not necessarily true.

\subsection*{2. Being a good child and a ‘normal’ adolescent}

In addition to the focus on parents, eight participants listed the impact that the inability to access orthodontic treatment had on adolescents. The participants' statements on the perceived impact on adolescents were more varied than their perceptions of the effects that the inability to afford treatment had on parents. For example, participant 5 maintained that the inability to access orthodontic treatment would result in 'no difference for some, but for others ... it'll be quite a profound issue'. However, the largest number of participants who mentioned the impact on adolescents said that not receiving orthodontic treatment would have long-term negative impacts on those adolescents who had a disfiguring malocclusion, were self-conscious of their appearance, or those who were bullied (or likely to be in the future). Participant 7 also stated that not receiving orthodontic treatment was likely to have profound effects on adolescents during the life-stage in which they were forging their adult identities. For instance:

P4: But you know as with those kids who are teased, or who are very self-conscious, or have a ... disfiguring malocclusion, I think it ... can have a profound effect on them.

P2: Some of these kids, even if they're not getting bullied now, I'm sure they are going to be very much aware of it as they get older.

P7: They're not able ... to do what, what might normalise them. And ... that can have other repercussions 'cause it sets them apart ... in a critical time when they're becoming the young people that they're to become ... it's another
point of difference ... I've got these teeth and I can't do anything about [them].

Participants 2 and 9 linked financial hardship with the disadvantage of having a malocclusion; for example, 'I think that the ... young person feels disadvantaged ... while parents feel bad that they're unable to provide orthodontic treatment' (P2). Participant 9 went on to explain how orthodontic treatment would be likely to help these adolescents: 'If you're from a low socio-economic background, you are disadvantaged already and having a malocclusion causes further disadvantage[s]'.

Participant 1 and participant 3 said that some adolescents understate the effects of their malocclusion in front of their parents. The participants considered that this was because the adolescents did not want their parents to be upset about their inability to pay for treatment.

P1: There are ... a lot of kids ... who ... want ... orthodontic treatment ... because ... they're conscious of their smile. But ... when they come in for the ... exam ... they're ... already aware of their financial situation. So ... they're not really up front about what their real issue is ... I think there is a lot of kids missing out ... and being affected by low self-esteem due to having ... malocclusion.

P3: Children know that orthodontics is expensive and often if you ask them directly, what do [they] think about their teeth ... They won't actually open up and say I don't like this ... because they don't want to put their parents in a position where ... they feel obliged to pay.

In contrast, participant 11 maintained that if adolescents gave up cigarettes then they would be able to afford orthodontic treatment.

If ... someone is able to spend between 45 and 50 dollars a week, I say we're in business ... if they smoke two packets a week, that's 40 bucks ... If you can afford to smoke, you can afford to see an orthodontist.

3. Thoughts on fee-for-service funding

All participants responded to the question regarding whether they consider fee-for-service funding of orthodontic treatment in NZ fair and whether the NZ government should fund treatment. None of the participants said that the government should fund treatment for all adolescents. Nevertheless, a third of the participants suggested that the government should finance orthodontic treatment for those with disabling malocclusions, adolescents who were from a low SES background, or both.

P1: I totally agree with the private system, but I think there should be some public funding towards the most severely disadvantaged.

P2: It would be great if the State would fund certain cases, but they need to be severe cases ... either financially, or clinically, [or] a combination together.

P7: I think [the government] needs to fund some ... higher level cases ... there are lots of pretty severely affected who might have ... facial problems as well [as] their teeth, but cannot get funded for their treatment ... I think it would be good [to fund these cases], but you'd have to use parameters.

P10: I think ... orthodontic care ... perhaps 5% ... but ... most cases [are] elective care. And it should not be funded ... by the State, but some cases are really, really bad ... I think those cases ... should be taken care of.

Participants 5 and 11 said that the government has a limited health care budget and expressed doubt about whether the government could afford to fund treatment. Funding orthodontic care was also considered a low priority as it was seen as cosmetic, compared with more urgent health needs and purchasing health equipment.

P5: I think the reality is that the health fund has a lot of competing needs, and the other needs are often much more severe ... they're life or death ... whereas, fundamentally [orthodontic treatment] is still a cosmetic service most of the time. It might be quite severe and it might have [an] impact on people for sure, but ... most of the health service falls into that category ... I actually think that's ... a pragmatic approach.

P11: The ... problem is the health budget and ... where do you spend your dollar within the health system? You've got to balance the need for orthodontic care against the need of putting a new scanning machine in the public hospital which ... can cost millions ... and for many ... politicians ... orthodontics is regarded as a
ORTHODONTIC TREATMENT AND COST

Impact of not receiving treatment due to cost

Previous studies have reported that there is a greater uptake of orthodontic treatment associated with higher SES families, in which parents tend to be more educated and may demand higher standards of physical attractiveness for their children. In reporting this information, however, there is a risk of framing low SES parents as being less interested in their children’s wellbeing compared with their more affluent counterparts. Nevertheless, the overwhelming majority of participants maintained that low SES parents want to do what is in their children’s best interests and go without ‘luxuries’ to fund their children’s orthodontic treatment. These findings highlight how, despite financial hurdles, low SES parents are just as likely to care for their children’s wellbeing as more affluent parents.

High self-esteem has been identified as a factor that protects adolescents from the effects of malocclusion. Consequently, adolescents who may be most heavily affected by an inability to afford orthodontic treatment might have less resilience due to poor self-esteem. Three participants maintained that the inability to access orthodontic treatment would most heavily affect adolescents who were bullied, self-conscious or had a disfiguring malocclusion. Young people tend to bully those who are considered to be ‘different’, adolescents with a malocclusion are often targeted. Some adolescents believe that their self-esteem, confidence and popularity will increase if they receive orthodontic treatment. Consequently, it is not surprising that low SES adolescents who are bullied and/or socially isolated are more likely to be disappointed if they cannot access treatment.

Two participants maintained that some low SES adolescents underestimate the effects of their malocclusion because there is concern about the stress that the unaffordability of treatment may cause parents. Such comments highlight how parents’ distress about their inability to secure orthodontic treatment may be a further source of anxiety for some low SES adolescents.

In contrast with the other participants, participant 10 reported that adolescents would be able to afford orthodontic treatment if they stopped purchasing cigarettes. The minimum legal age for purchasing...
cigarettes in NZ is 18 and the minimum school leaving age is 16 years. The fact that it is illegal to sell cigarettes to children under 18 years, and school students generally lack income, suggests that participant 10's message is likely to relate to few adolescents. After all, only 4% of young New Zealanders aged 14 to 17 currently smoke cigarettes (https://www.smokefree.org.nz/smoking-its-effects/facts-figures) (although it is acknowledged that cigarette consumption is most pronounced amongst those residing in the most financially deprived regions of New Zealand).25

Fee-for-service

Although there was an inability to locate data reporting the percentage of adolescents who seek orthodontic treatment in NZ, other international studies suggest that this is likely to be relatively high (e.g., 33.5% of adolescents in Germany, 18% of adolescents in the United Kingdom and 8 to 14% of adolescents in the USA access orthodontic treatment).21,26,27 Consequently, participants' statements about the high cost to the State if it did fund orthodontic treatment can be considered accurate.

Nevertheless, three participants maintained that the government should fund treatment for those who are severely disadvantaged by their malocclusion. The NZ government does fund limited orthognathic surgery for cleft lip and/or palate correction, but other conditions such as facial asymmetry, severe maxillary overjet or mandibular retrognathia may not be funded (dependent on each District Health Board’s criteria). At Wellington Hospital the cost of orthognathic surgery on one jaw is NZ$16,000, which means that it is unlikely to be an option for low SES families (http://www.welloral.co.nz/procedures/jaw-surgery/). Unfortunately, this may have life-long consequences for those low SES adolescents with disfiguring malocclusions.

Dental professionals have rated approximately one third of NZ’s children and adolescents in need of orthodontic treatment.12,28 Consequently, the participants’ suggestions for restrictions related to State funded orthodontic treatment can be considered necessary to avoid oversubscription and considerable expense.

Four participants reported that they had previously worked in the United Kingdom or the Netherlands where orthodontic treatment is funded through government schemes or public insurance (providing it meets the severity criteria under various measures and is deemed to impact on an adolescent’s mental or physical wellbeing) (https://www.orthodont-cz.cz/data/files/European%20Orthodontic%20Guide%202013.pdf). The British Orthodontic Society has reported that there are not enough orthodontists contracted to the NHS to meet the needs of those seeking treatment and, therefore, the statement about the oversubscription of orthodontic treatment under the NHS may be accurate (https://www.bos.org.uk/Public-Patients/Orthodontics-for-Children-Teens/Orthodontics-The-NHS). If orthodontic treatment was publically funded in New Zealand rather than fee-for-service, it may be oversubscribed, which, in turn, may result in compromised treatment standards. Consequently, the consumer related outcomes of treatment (e.g., willingness to smile) may be affected.29

Four participants’ comments framed fee-for-service funding as producing high standards of care since orthodontists will not be reimbursed if they fail to practice with sufficient skill. In making these comments, the participants may be drawing on neo-liberal ideology, in which limited government involvement, the free market and competition are deemed as the most efficient and ‘best’ way of delivering services.30

Participants 2 and 10 also stated that adolescents in the United Kingdom and the Netherlands were less likely to care for their appliances because they did not have to pay for them. This comment identifies adolescents seeking treatment through public funding as a ‘bloc’ rather than as individuals with varying levels of cooperation and, by implication, differing levels of investment in their orthodontic treatment.

Evaluating the research

The present study includes the perspectives of 11 orthodontists who volunteered for one NZ community orthodontic initiative. Consequently, the perspectives on how the financial inability to access orthodontic treatment affects low SES families are third person. First person accounts by low SES adolescents and parents also need to be explored in order to gather a more accurate picture. However, this would be a sensitive investigation, which would demand highly skilled researchers.

Due to the small sample size as well as the fee-for-
service model of orthodontic treatment that exists in NZ, the present findings cannot be generalised to other national contexts. For instance, the cost of braces in Australia varies between states (as well as in urban/rural locales), as does the time on waiting lists for orthodontic treatment in the public dental service (https://www.familiesmagazine.com.au).

Consequently, initial research on the perspectives of Australian orthodontists who volunteer for Give a Smile™ (and similar initiatives) should be undertaken so that the unique regional, ethnic and economic factors that affect access to orthodontic/oral health care can be discussed in depth.

In the present study, there are references to orthodontic treatment performed in the United Kingdom and the Netherlands. Unfortunately, the participants were not asked when they practiced in these countries and, consequently, the funding structure of orthodontic treatment in each respective country may have changed since their international tenures.

**Conclusion**

International and national studies have reported that there are inequities in access to orthodontic treatment, particularly experienced by adolescents from low SES circumstances. The studies have been largely quantitative in nature and have reported statistical data illustrating the disparity. The present study provides a new perspective on SES and access to treatment by providing qualitative data focusing on the effects of an inability to access orthodontic care. It also explores the standards of orthodontic treatment that may arise under public-funded or fee-for-service provision. More cross-cultural research is needed that focuses on which model of funding best meets the treatment needs of adolescents who are dually disadvantaged by their malocclusion as well as their family’s financial circumstances.

The present study is small in scope but, nevertheless, has provided data on orthodontists’ perspectives regarding the inability to access orthodontic care due to cost, and the impacts on low SES families. At the same time, the present study addresses a gap in the literature, identified by a lack of qualitative assessments focusing on the fee-for-service model of funding in NZ and the government’s ability to meet the needs of adolescents who may be dually disadvantaged by disabling malocclusions and financial disadvantage.

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