

An orthodontic patient expects?

Abstracted from

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What are patients' expectations of orthodontic treatment: a systematic review. *BMC Oral Health* 2016; **16**: 19.
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Question: What are patient expectations related to orthodontic treatment? What factors determine 'patient expectation', and can they affect outcomes?

Data sources Pubmed, Cochrane, Web of Science and PsychINFO databases.

Study selection Experimental studies (randomised or not, prospective, retrospective and cross sectional) with qualitative and/or quantitative analysis investigating patients' expectations of orthodontic treatment were considered. Only English language studies were included.

Data extraction and synthesis Two reviewers screened the studies with a single reviewer abstracting the data. Study quality was assessed by two reviewers using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) criteria. Because of heterogeneity of the study designs a narrative summary was presented.

Results Fourteen papers reporting 13 studies were included. There was one RCT, one cohort study, two questionnaire-developments and ten cross-sectional studies. Seven studies summarising expectations with regards to the treatment process, experience and impact on quality of life, and six studies summarising expectations with regards to the treatment outcome and benefits were discussed.

Conclusions Orthodontics appears to have adopted various standardised questionnaires. However, most of them are poor in the quality of methodology and results analysis, which prohibits synthesising sufficient evidence to help identify which factors influence patient expectations. The evidence of 'expectations' affecting treatment outcomes is not found in current research. Future studies are needed to better understand the impact of 'expectation' on the treatment both theoretically and experimentally.

Commentary

What does the patient want? Should this not be the very first question any clinician should have during her/his first meeting with a new patient at the office? This review focuses on that crucial question related to orthodontic treatment. Nonetheless, we quickly realise that the authors dig beyond that initial question to try to also better understand the main factors that are foundational for those expectations, and if those expectations can affect the process and outcomes of the orthodontic treatment.

Unfortunately, as the authors concluded, it seems that the

only clear concept that this review identified was what patients' main expectations are. Otherwise the evidence is scarce and weak concerning process and outcome determinants and the role of treatment expectations and relevant treatment factors like patient satisfaction on the whole experience.

The authors mentioned the problems related to the use of the term 'expectations' during the search phase of the review. It seems that 'expectations' is a rather new area in dental research, therefore, no suitable MeSH term was available. This forced the authors to make a broader search with different words and sorts of studies. Thus, the inevitable result was a wide variety of studies exploring highly dissimilar concepts that made a meta-analysis impossible and a narrative synthesis compulsory. The authors even recognised that the heterogeneity in study designs leads to an inevitable degree of interpretation subjectivity. Observing all those stated problems, what we could ask ourselves is: why this lack of studies on such important topic?

It may be, as the authors mention, just the fact of this being a new area in dental research. It may also be a reflection of other explanations such as: is it not more or less obvious what a patient is looking for from an orthodontic treatment? Besides oral function and dental health improvements and aesthetic implications, what else could be asked from an orthodontic treatment? In fact, the first and only strong conclusion of this systematic review was: 'In general terms, dental appearance and function improvement were the uppermost expectations regarding orthodontic treatment outcomes'. This obviousness might be the cause of a lack of interest in this subject area. However, much more interesting may be to explore deeper related concepts to improve our understanding about how these expectations are shaped, so that patient-practitioner communication could be improved, and assess what the impact of those expectations on the treatment process and outcome is. For those two final points it seems that no research has been conducted yet. Therefore we are left with no answers in this regard.

Another point to make about the searching process is the restriction on English language papers and the absence of grey literature search. Nonetheless, the authors were conscious about the language restriction problem, which might lead to a citation bias and jeopardise any potential evidence synthesis, as they discussed at the end of the review.

There are different questionnaires which have been developed and validated to measure the role of expectations in orthodontic treatments. This complicated any evidence synthesis process. From this review it seems that the only way to study patients'

expectations in this area is through questionnaires, and that most of the studies were observational studies (except one randomised control trial). Maybe it would be beneficial to explore a more reliable way of measuring and analysing treatment expectations. The lack of qualitative studies in this area is notable. They may represent a better way to more reliably retrieve what patients think. Structured questionnaires may likely lead to preconceived answers.

The level of evidence of each study in this review was measured with the tool called STROBE. This tool was designed to evaluate observational studies and not randomised controlled trials. Although one RCT was included in this systematic review, no details were made if a more appropriate methodological tool was used for it. Another question which could arise when we look closely at the different studies or papers of the review is: should we include questionnaire development reports in a systematic review?

Finally, some suggestions for our daily practice orientation could be extracted from the individual studies of this narrative systematic review, in which the papers were divided into two groups regarding patients' expectations. Due to the limitations identified and the low level of evidence these suggestions should be considered with caution.

About expectations regarding treatment process:

- It seems that parents have more realistic expectations than the children. For example, parents were better aware of dietary and drinking restrictions while wearing orthodontic appliances.
- It also seems that different oral health national systems would

influence patient expectations.

- Cultural differences and ethnic diversity can also have an influence on expectations.

About expectations regarding treatment outcome and benefits:

- Parents seem to expect greater improvement than their children.
- Again, as for parents, expectations of benefits from treatment were highest and they were related to family income, father's education level, and respondent's sex.
- The two main expectations of patients aged more than 18 years old who pay for their treatment by themselves are: straightness of the teeth and general appearance improvement. It is also interesting that expectations of benefits from treatment were significantly associated with the severity of the malocclusion, but not the treatment fees.
- In another study, it was found that dental aesthetics was the determinant factor to assess orthodontic treatment outcomes for more than 50% of patients and parents. Especially, parents with higher education level would pay more for treatment that emphasised oral function improvement.
- The hypothesis that females have higher expectations than males was not confirmed in current evidence.

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