Author’s response to reviews

Title: Is the arch form influenced by sagittal molar relationship or Bolton tooth-size discrepancy?

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Author’s response to reviews: see over
Dear Editor-in-Chief,

We would like first to thank the reviewers for their evaluation of the submitted manuscript and the valuable comments.

REVIEWER 1 – Prof. Leslie Will

- “Which contact points were digitized? …”
  The methodology of the tooth-size measurement was clarified in the “Materials and Methods” section under the heading ‘Tooth-Size Measurement’, and the recommended correction “mesiodistal width” replaced “greatest interproximal distance”.
- “Which contact points were digitized? …” “Conclusion #1 states that the arch form types are distributed equally, but then you say that the most frequent form was ovoid …”
  The recommended correction was made, and Conclusion #1 states now the following:
  “In Saudis, no one arch form was statistically significantly more frequent than the other, but there were more ovoid forms than tapered and square.”

REVIEWER 2 – Prof. Joanna Janiszewska-Olszowska

- “The proper question, however should be, if arch form is influenced by sagittal molar relationship or Bolton tooth size discrepancy. Thus the title has to be corrected.”
  The title was rewritten following the reviewer’s recommendation, and the new title is: “Is the arch form influenced by sagittal molar relationship or Bolton tooth-size discrepancy?”
- “First, the authors did not analyse the presence of a malocclusion or ‘intermaxillary relationships’, but only sagittal molar relationship and this term should consequently be used in the whole paper.”
  The term “sagittal molar relationship” was used instead.
- Abstract: “The word ‘specific’ should be removed and ‘arch form’ should be used in singular form.” “The term ‘extreme discrepancies in the intermaxillary tooth-size relationship’ is imprecise and should be replaced by ‘significant Bolton discrepancy’ or ‘clinically significant tooth-size discrepancy’.” “The aim of the study was to find out, if there is an association between Bolton tooth size discrepancy, sagittal molar relationship and arch form.”
  All the recommended corrections were made, and the abstract now states: “This study aimed to investigate the possible association between arch form, clinically significant tooth-size discrepancy, and sagittal molar relationship.”
- “Second sentence should be reworded, (arch form cannot be studied according to Angle molar classification). It could be: Bolton ratio has been calculated, sagittal molar relationship has been defined according to Angle classification and possible correlations were analysed using ANOVA, Chi-square and t-tests.”
  The recommended changes in this section were made. The methods in the abstract now states: “Bolton ratio has been calculated, sagittal molar relationship has been defined according to Angle classification, and possible correlations were analyzed using ANOVA, Chi-square and t-tests.”
- “The first sentence is unclear. No significant differences in the distribution of the three arch forms was seen. Between the sexes?, for different sagittal molar relationship? This should be clarified.”
  The first sentence was replaced with following sentence: “No one arch form was statistically significantly more frequent than the other.”
- “The term “interarch relationships” should be replaced by a more precise term: “sagittal molar relationship” since the authors did not analyse any other features defining interarch relationships (overjet, overbite, canine relationship...).”
  The term “sagittal molar relationship” replaced the terms “malocclusion, interarch relationships” in the entire manuscript.
“The sentence beginning with line 7. of the Results section in Abstract “Significant differences in the arch forms distribution were observed between the Saudi .......” must be removed, …”
The sentence was removed.

**Conclusions:** “‘sagittal molar relationship’ should be used instead of ‘malocclusion’”
The term “sagittal molar relationship” was used in the conclusion.

“Maybe a better conclusion could be: “Arch form is independent from gender, sagittal molar relationship and Bolton discrepancy.” or : 1. Neither tooth-size discrepancy nor sagittal molar relationship is influencing the arch form. 2. Arch form is not dependent on gender.”
The first suggested conclusion “Arch form is independent from gender, sagittal molar relationship and Bolton discrepancy.” was used in the abstract.

“The second conclusion (on ethnic differences) has not been drawn from the results of the present study (the authors did not analyse plaster models from other populations) and thus must be removed.”
Following the reviewer’s recommendation, the second conclusion was removed.

“**Keywords** “Angle Class” could be added.”
The keyword “Angle Class” was added.

**Background:** “The authors should clearly define “specific dimension relationships” as Bolton overall and anterior ratio.”
The phrase “specific dimension relationships” was replaced with the recommended term: “Bolton overall and anterior ratio”.

“Higher prevalence” should be used instead of “greater prevalence” within the whole text.”
The term “greater prevalence” replaced “higher prevalence” in the entire manuscript.

“Paragraph 3. in Background, Abbreviation TSD is used without an explanation. First use of any abbreviation should be in parentheses after the whole name e.g. “tooth size discrepancy (TSD)”. Next time in the text the abbreviation alone can be used.”
The abbreviation “TSD” has been defined in the background and the abbreviation followed in parenthesis.

“The sentence beginning with ‘Uysal et al...’ contains a grammatical error. ‘a significant sex differences’ should be ‘significant sex differences’”
The grammatical error was corrected, and the phrase “significant sex differences” was used.

“In the sentence beginning with ‘The mathematical tooth size ratios...’ the word ‘as’ should be added after ‘to serve’”
The word “as” was added after “to serve”.

“In the sentence beginning with Nojima et al. ... ‘is’ should be added after ‘arch form’”
Following the recommendations, “is” was added after ‘arch form’.

**Results:** “The whole second paragraph beginning with “When the distribution of the arch forms...” has to be moved to the discussion section. Table 3. should belong to the discussion, citation reference numbers should be provided in the headings of every column. Table numbering must then be adjusted.”
Following the recommendations, the second paragraph was moved to the “Discussion” section, and required corrections were made.

“In heading of Table 3. The words ‘comparison of the’ should be removed. ‘Saudi’ should be the last column; instead of citation reference number it should be described as ‘present study’.”
The heading and the columns’ arrangement of Table 3 were modified as recommended.

“Table 2: A better table heading could be: ‘Distribution of arch forms across different sagittal molar relationship’.”
The heading of Table 2 was modified as recommended.
“The list of abbreviations is incomplete. It should contain all the abbreviations used or could be removed at all.”
The list of the abbreviation was modified to include 3 more terms.

Discussion: “Paragraph 2, sentence 1. The second part of the sentence must be removed, since the authors did not analyse arch forms in other populations (outside the Saudi).”
The sentence was removed as recommended.

“Instead ‘there is no gender differences’ there should be ‘there are no gender differences’”
The required correction was made in the sentence.

“A potential limitation of the study should be mentioned in the discussion, which is …”
The required paragraph was added to the Discussion section.

Conclusions: “1. There should be “distribution is equal” (not: “equally distributed”). Remove last sentence, since this conclusion cannot be drawn from the present study.”
The recommended corrections were made, and Conclusion #1 states now the following:
“In Saudis, no one arch form was statistically significantly more frequent than the other, but there were more ovoid forms than tapered and square.”.

“2. The term ‘malocclusion classification’ should be replaced by ‘sagittal molar relationship’.”
The term ‘malocclusion classification’ was replaced with “sagittal molar relationship”.

“3. Remove the first part of the sentence (this has been said in conclusion 2).”
The first part of the sentence was removed, and the 3rd conclusion states now: “3. Sexual dimorphism was evident in the prevalence of overall Bolton tooth-size discrepancy.”.