Author’s response to reviews

Title: Factors influencing incidents of complications while using Nickel-Titanium rotary instruments for root canal treatment; a questionnaire study

Authors:

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Author’s response to reviews:

A point-by-point response letter

The author would like to thank the Editorial Office agents, the Associate Editors and the Editor-in-Chief for the efforts they have made in dealing with this manuscript. Also, the author would like to thank the reviewers for their constructive comments, questions raised and suggestions which definitely will strengthen the manuscript.

The followings are the author response, a point-by-point, to reviewers’ comments, questions and suggestions as well as additional comments that were included in the attachment that has been sent to the author

Reviewer reports:
1-Ahmed Jamleh (Reviewer 1):
Reviewer comment: In general, the English requires attention and the clinical significance of the results remains unclear. A big confusion about the result analysis is shown.
The author response: The manuscript has been revised according to reviewer comment or better English. Regarding the clinical significance, this study explored the possible factors that influence occurrence of complications during usage of NiTi instruments. Hence, dentists will consider them, which can contribute to less incidents of complications. Great attention was exercised to make the results section is clear. Maybe the including many variables and reviewer is not familiar with the way in which results of survey studies are written contributed to such confusion to the reviewer. I wish the reviewer to be more specific and specify which variable’s results is confusing.

INTRODUCTION
-24-27 the sentence is not clear:
The author response: The sentence has been revised and amended accordingly.
-28 add "most of" before "NiTi instruments":
The author response: Done
-L46 Add reference after "countries":
The author response: Done
-L51 and L53 The cited references (2009 and 2012) are not recent!!!!!:
The author response: The sentences were revised and amended accordingly.
-The problem statement is not clear:
The author response: The manuscript included the following section (Consequently, there is an urgent need to evaluate…… Thus, the following question requires an answer:……?" Moreover, no previous studies have investigated….. Such important information could be attained by questionnaire studies ……. [18,19]. So the author hopes that the research problem is clear enough.

METHODOLOGY

--L4 What do you mean by Google Drive tool?
The author response: the sentence was amended to state GoogleDrive website

-How you tested correlation? Did you only use Chi-Square test?
The author response: Yes I used the Chi-Square test; which at the same performs the association (linear-by-Linear association).

-L15 replace \( p=0.05 \) with at a significance level of 5%:
The author response: Done

RESULTS

-L25 please define "others":
The author response: Done

-L27-35 the sentences are ambiguous and need rephrasing:
The author response: The sentence have been revised and clarified accordingly

-Table 1 Revise the number as most of the total numbers are Wrong!:
The author response: Done: only one cell has the wrong number (23 instead of 22)

-Table 2 What are these? numbers or percentages? what do they reflect?:
The author response: Done: They are percentages (proportions). The legends of this table as well as all other tables have been revised and amended accordingly

-L41 and L51 replace "preformed" with "performing":
The author response: Done

-L59 what do you mean here?:
The author response: The number in parentheses included in TOTAL cells of Discard Strategies (60) for General dentists, 96.9 for Endodontists, and 71.9 for Others

-Again how did you measure correlation in the results?:
The author response: By using the Chi-Square to parentheses test whether there is significant differences between cells in 2X2 or 3x3 tables. For example in Table 4, the chi-square test whether there is a correlation between the incidents of instruments fracture and the experience of participants.

DISCUSSION

-Move the first paragraph to the end:
The author response: Done (References have been re-numbered according to the new amendment). Though the author does believe that starting the discussion section by critical analysis and discussing of the methods implemented in the study is normal and accepted.
-Start the discussion section with summarizing what you found:
The author response: Done

-You need to elaborate more on the complications of niti usage:
The author response: Done

-Paragraph 2 L36 what are these percentages??
The author response: They are the percentage of respondents who discarded NiTi-RIs after certain number of uses as it is introduced in the start of the sentence.

-Paragraph 2 L42 "6-10 or 2-5 uses" expression is confusing!
The author response: The sentence has been revised and corrected accordingly

-Paragraph 2 L57-60 the numbers look too big!!
The author response: The sentence and numbers have been revised. Just the (-) was accidently cut while writing. The correct numbers of uses are 2-5 (NOT 25) for endodontists and 6-10 (NOT 610) for general dentists

Mehmet Emin Kaval (Reviewer 2): Dear Editor
The study was conducted only with dental practitioners and endodontist from Saudi Arabia; and the findings of this survey could not be generalizing to all population in the world; therefore, I am suggesting to perform this questionnaire study with a large population including international dental practitioners.
The author response: Thanks a lot, to the reviewer to raise this interesting point. Undoubtedly, conducting a research study at global scale will enable investigating the impact of different national (local) factors on the different aspects of the topic. However, this does not mean that conducting the study at national level is defective. The results of this study can still be published and generalized at national level (the title will be amended to indicate the study is in Saudi Arabia). The majority of questionnaire studies published in prestigious journals, including BMC Oral Health, has been performed at national levels. The author has conducted more than questionnaire studies at national level, in the United Kingdom, Jordan and Saudi Arabia. They were all published in high-impact factors journals; such BMC Oral Health and International Endodontic Journal. In addition, and more importantly, conducting global research requires the collaboration of different researchers from different countries, as well as significant extra cost. This study was conducted by a single author, the main major obstacle is getting the permission to access the Dental Register of different countries individually, without involving researchers from these countries.
Nevertheless, the author would like to thank the reviewer to raise this interesting point which will be definitely the aim for near future research project in collaboration with different global colleagues

Meric Karapinar Kazandag (Reviewer 3):
Abstract:

Author: "the number of RCTs performed per week was the most influential factor"
Reviewer: please clarify the effect of "the number of RCTs performed per week"
"the greater number" should be added here

The author response: Done; the conclusion in the abstract has been revised and amended accordingly.

The results clarified the adverse impact of greater number of weekly performed RCTs in the abstract as follow: "As the number of weekly performed RCTs and participants’ experiences increased, the NiTi-RI fractures and the number of fracture incidents significantly increased (p<0.001). While 60% of those who performed 1–3 RCTs per week experienced NiTi-RIs fractures, 100% of those who performed more than 12 RCTs per week did so. The highest proportion of those who experienced more than 10 fractured NiTi-RIs (60%) was within the group who performed more than 12 RCTs per week. Although fracture incidents decreased with less number of reuse, there was no significant correlation between the number of fractured instruments and NiTi-RIs discard strategy (p≥0.05)"

In addition, the Results section clarified and stated clearly the impact of the number of weekly performed RCTs in the following subheading:

NiTi-RI Fracture Incidents and Associated Factors

As the number of RCTs performed per week increased, the NiTi-RIs fracture incidence increased (p<0.001). Moreover, 60% of those who performed 1–3 RCTs per week experienced NiTi-RIs fractures, while 100% of those who performed more than 12 RCTs per week did so (p<0.001) {Table 4}…..

Introduction:

Author: This questionnaire study was designed to investigate the complications associated with NiTi-RI usage in Saudi Arabian dental practice and to explore the influencing factors.

Reviewer: the aim of the study should be better clarified at the very last sentence of introduction. The author response: Done, the aim of the study is stated clearly now.

Methods:

Reviewer: A clear definition of inclusion and exclusion criteria for participants is missing in methods. Part

The author response: Done, the inclusion criteria has been added clearly in the methodology part.

Please insert approval number provided by Ethics committee

The author response: Done, also a copy of the ethical approval letter was already submitted in the first submission.

Results:

Author: NiTi-RIs use was included in the endodontic postgraduate program curricula. Consequently, those postgraduate students or residents who were enrolled were classified as endodontists. Reviewer: This should be either in Methodology or in discussion. Definitely not in results.
The author response: Done

Author: Thirty-two respondents (24 GDs, one endodontist, and 7 others) were categorized as ineligible because they had never performed RCTs [9,11]. Therefore, the final response rate was: 395/743 (775-24) = 53.2%.

Reviewer: Author should define inclusion and exclusion criteria in Methods part. Result part should include only the number of participants/ questionnaires related to each exclusion criteria.

The author response: Done in term of inserting questionnaires criteria. When sample size is selected randomly and systematically by a third person (who is not related to the study), the selected dentists is not known whether he/she performs/does not RCTs. The participants must answer the question whether they perform/don’t perform RCTs. If their response “No”, then it is the end of the study for them. If the response is yes, then participants can continue answering the questionnaire. Therefore, those who don’t perform RCTs, can be counted in the initial response rate, BUT NOT in the final response rate. This is according the study by Parashose et al. (Parashos P, Messer HH (2004) Questionnaire survey on the use of rotary nickel–titanium endodontic instruments by Australian dentists. International Endodontic Journal 37, 249–59.)

Please use the word "percentage" rather than proportion in the explanations of the tables in results part
The author response: Done

Discussion:

Please add some comments regarding the manufacturers recommendations regarding multiple use of NiTi instrumentation.

The author response: Done

Please add some comments regarding the effect of type and duration of sterilization process applied to instruments for multiple use.

The author response: Done

Conclusions:

"It is an inevitable incident,” Please remove the expression above as your study neither asks nor answers such a question.

The author response: Done.

Giovanni Veronesi (Reviewer 4):
I read with interest the manuscript by Madarati AD. My review will focus on the methodological aspects of the paper related to the statistical analysis. In particular, I believe the author should improve some aspects mentioned below:

1. Participation rate is the number of respondents over the number of invited, i.e. 51% (395/775). The exclusion of n=32 participants with no experience in RCTs at all should not affect the participation rate, but only the number of respondents available for the analyses. The author should modify the text in the relevant paragraph ("Response rate and participant classification"), and correct participation rate as 51% across all the manuscript. Also, the author should consider providing participation rates separately for GDs and endodontists.
2. As the author correctly acknowledged in the discussion, a participation rate close to 50% can result in selection bias. I appreciate the comparison between early and late responders (although a formal definition of the latter should be added to the methods section). The author should give less emphasis on the remaining points mentioned in the discussion on this aspect ("First, second and third"); these are merely speculative and based upon dated references. Instead, I would suggest the author to consider additional comparisons between responders and non-responders, if data are available, including age, gender, working experience, geographic distribution (city vs. country-side). This would strengthen the confidence over the representativeness of the study sample.

The author response: a clear definition for early and late responses were added with the reference. Also, one more comparison between late and early responses regarding the use of NiTi-RIs. However, according to Parashose et al (2004), the comparison is made for the one main and critical question in the study, which is encountering complications during usage of NiTi-RIs for root canal cleaning and shaping. (Parashos P, Messer HH (2004) Questionnaire survey on the use of rotary nickel–titanium endodontic instruments by Australian dentists. International Endodontic Journal 37, 249–59.)

3. Tables are really difficult to read. I suggest a few improvements: first, results should be reported as absolute and relative frequencies (n and % in brackets). Second, please use only one layout and structure within a given table: for instance, in table 2 keep the respondents' mansion (GDs, endodontists, other) always on the columns or on the row. The same argument holds for "number of fractured NiTi-Ris) in Table 6. The total columns in Table 6 does not make sense. If possible, keep the same structure also across the study tables. I had very hard time understanding the number reported in current Table 4.

The author response: Percentage and frequencies have been inserted according to reviewer suggestion. Done regarding Table 6. Regarding table 2; I could not keep the same layout because the table width will be larger than the width the word document page.

4. Inference is based upon the chi-square statistics, which test the null hypothesis of no association between two variables. However, now and then there are some reported p-values for single proportions: see for instance line 55 on page 5 ("Overall, 71.9% of the responders were using NiTi-RIs (p<0.0001)"); or lines 7-9 on the following page ("Significantly, the highest proportion…(p<0.0001)"). What is the null hypothesis for these p-values, and what is the test statistics adopted? Please also mention it in the methods section.

The author response: Two null hypotheses were added. The Chi-square was the test for statistical analysis and testing these two main null hypotheses and other ones.

The author would like to thank the reviewer for raising this point and would like to clarify the following facts. In questionnaire studies, usually there is one or two main null hypotheses, though each question in the study usually indirectly implement a null hypothesis. However, if a study includes investigation of 10 variables, for example, it is impossible to state 10 null hypotheses. This of course doesn’t mean not to statistically compare subgroups to investigate each variables.
Minor:
1. I suggest adding the study location early in the title or in the abstract. The reader should arrive up to the end of the introduction to understand where the study was conducted. 
The author response: Done, by adding the country name in the abstract’s aim.

2. There is no description of the study sample in terms of socio-demographic profile. A few lines or a supplementary material table will improve the possibility to compare these results with other similar studies in different populations/contexts. 
The author response: The study did not include socio-demographic questions such as practice geographic location, age, and sex, because pilot studies of previous research works, that the author conducted in Saudi Arabia, revealed no impact of these aspects. However, the influence of factors such as participants experience in practicing dentistry and place of work (private, academic, governmental) were investigated as possible influencing factors.