

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Comparative Analysis of Story Grammar Development: A Cross-Sectional Study of Tamil-Speaking Child Cochlear Implant Users and Hearing Peers in Tamil Nadu, India
<b>AUTHORS</b>	Muthu, Jenithaa; Venkatraman, Krupa; Ganesh, Latika

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Essawy, Wessam Tanta University
<b>REVIEW RETURNED</b>	31-Jul-2023

<b>GENERAL COMMENTS</b>	<p>1-As regards the idea of the research, what is the new result it added? As it is well known that hearing impairment children have difficulty in many language development aspects. It was better to compare hearing aid users and CI users or to compare CI users with different duration. However, the authors explained well in the abstract what is added in this research as regards rehabilitation options.</p> <p>2-The introduction is too long, however it is highly informative and well written as regards language and grammar.</p> <p>3-Some corrections as follows: The references at the end of each paragraph is better to be written between two brackets like this [1]. When more than two authors is present, it should be written (et al.) as in page 4 line 21 (Worsfold et al.) and line 31 and so on in all other references. Page 4 line 52 (children lacked cohesion devices) better to be (articles or tools). Page 5 line 45 and 50 (nondisabled children) it is better to be (non-disabled children) Reference no 17 is all in capital letters, it should be corrected.</p> <p>4-The results and discussion is well written and clear.</p>
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<b>REVIEWER</b>	Fu, Xinxing Beijing Tongren Hospital, Beijing Institute of Otolaryngology
<b>REVIEW RETURNED</b>	17-Aug-2023

<b>GENERAL COMMENTS</b>	<p>Page 6, lines 21-22, the citation format needs to be corrected, listing all the authors; please follow the BMJ Open rule.</p> <p>Page 6, regarding the sample size, although the authors indicated that they follow the recommendations, please describe how it's calculated.</p>
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	The mean ages of the two groups were not balanced; considering there is an association between the age of children and their speaking level (e.g., story grammar), the authors should explain the potential bias induced by the participant's imbalance. Or should they list this as a limitation.
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## VERSION 1 – AUTHOR RESPONSE

**Reviewer: 1**, Dr. Wessam Essawy, Tanta University

### 1) Comments to the Author:

1-As regards the research idea, what is the new result it added? It is well known that hearing-impaired children have difficulty in many language development aspects. It was better to compare hearing aid users and CI users or to compare CI users with different durations. However, the authors explained well in the abstract what is added in this research as regards rehabilitation options.

#### Response to reviewer:

We acknowledge the reviewer's perceptive query regarding the originality of our study. This study ventures into a new realm within language development, examining the expression of story grammar components in Tamil-speaking children with cochlear implants. It is worth noting that our study represents a pioneering effort as the first of its kind in the Tamil language. Prior to our investigation, there was a noticeable dearth of studies addressing the specific variations in the expression of story grammar components in Tamil-speaking children with cochlear implants.

Additionally, our study's unique feature is its concentration on narrative analysis, a decontextualised mode of communication. While conventional language assessments offer a language age-matched perspective, narrative analysis delves deeper, scrutinising the intricacies of language skills that go beyond mere vocabulary and syntax. Narrative assessment provides a more sophisticated approach for gauging the quality of language skills, thus offering an enhanced comprehension of children's proficiency in coherent communication and storytelling. This exclusive focus on narrative development augments our understanding of language proficiency among children with cochlear implants within Tamil-speaking communities.

### 2) Reviewer comment:

-Some corrections are as follows:

The references at the end of each paragraph are better to be written between two brackets like this [1].

When more than two authors are present, it should be written (et al.) as on page 4, line 21 (Worsfold et al.), line 31 and so on in all other references.

#### Response to reviewer:

Thanks for pointing out the formatting error. We apologise for not noticing it. However, we have changed throughout the document, i.e., the references are mentioned in [] brackets and when more than two authors et al. had been mentioned.

### 3) Reviewer comment:

Page 4, line 52 (children lacked cohesion devices) better to be (articles or tools).

#### Response to reviewer:

Thanks for your suggestion. The change has been amended for clarity in the as "They found that the narratives of deaf children lacked tools for generating cohesive narratives, such as conjunctions and pronouns" in **Pg:no:4, Line number: 7-14.**

**Reviewer comment:**

Page 5, lines 45 and 50 (nondisabled children) it is better to be (non-disabled children)

**Response to the reviewer:** Thanks for your valuable suggestion; the change has been incorporated into the main document in **Pg.no:6, Line number: 8-11**.

**4) Reviewer comment:**

Reference no 17 is all in capital letters. It should be corrected.

**Response to reviewer:**

Apologies for the typing error. The same has been changed in the manuscript on Pg:no:16, Line number: 5-7.

[17] Uzuner Y. The impact of strategies used in the balanced literacy approach on story grammar acquisition of three Turkish students with hearing loss: An action research study. *Deafness & Education International* 2007; 9:24–44. doi:10.1179/146431507790560075.

**Reviewer: 2**, Dr. Xinxing Fu, Beijing Tongren Hospital, The University of Western Australia

**1. Reviewer comment:**

Page 6, lines 21-22, the citation format needs to be corrected, listing all the authors; please follow the BMJ Open rule.

**Response to Reviewer:**

Thanks for the observation and comment by the reviewer. We have ensured the citation format is aligned to BMJ OPEN. However, we also noticed reviewer 1 has pointed out that if more than two authors, then et al. be used. Kindly clarify the same. The current revision is as per reviewer 1 suggestion to use Elsevier's Vancouver style.

**2. Reviewer comment:**

Page 6, regarding the sample size, although the authors indicated that they follow the recommendations, please describe how it's calculated.

**Response to reviewer:**

Thanks for pointing out a thoughtful point. Choosing a sample size of 30 in this study is a balanced decision considering various factors. The reasons for the sample size calculation are listed below:

**Sample Size Justification:**

- **Practicality:** Conducting research with children with hearing impairments poses logistical challenges; 30 strikes a practical balance.
- **Ethical and Resource Constraints:** In line with ethical considerations and available resources, 30 allows for the study's specific group comparisons.
- **Previous Research:** Finding specific language-age profiles is challenging, justifying the chosen sample size [2][3].

The citations to the studies are as follows:

[2] McCabe A, Bliss LS. Narratives from Spanish-Speaking Children with Impaired and Typical Language Development. *Imagin Cogn Pers* 2005; 24:331–46. <https://doi.org/10.2190/cjq8-8c9g-05lg-0c2m>.

[3] Reuterskiöld C, Hansson K, Sahlén B. Narrative skills in Swedish children with language impairment. *Journal of communication disorders*. 2011 Nov 1;44(6):733-44.

Given the reasons, we have also added the small sample size as a limitation of the study in the strengths and limitation section, "**Sample size considerations may affect the scope of findings**".

### 3. Reviewer's Comment:

The mean ages of the two groups were not balanced; considering there is an association between the age of children and their speaking level (e.g., story grammar), the authors should explain the potential bias induced by the participant's imbalance. Or should they list this as a limitation?

### Response to Reviewer:

In response to the reviewer's concern regarding the age distribution, we would like to clarify that our participant selection procedure was designed to minimise bias. We specifically matched five children with cochlear implants in each language-age group with their hearing-impaired counterparts. This strategy addresses possible age-related influences on language skills, such as story grammar. We aimed to reduce biases caused by differences in age and make it easier to make meaningful comparisons between groups by pairing children with cochlear implants with hearing peers of the same language age. The study involves selecting children matched in age and language proficiency, referred to as "GroupWise language-age-matched children." This approach allows for a comparison between children with language impairments and those typically developing, aiding in comprehending the language difficulties experienced by individuals with conditions such as hearing impairment. The narrative literature recommends this approach while comparing children with language impairment to those with typical/normal language development.

**Ref: [4]** Hoff E, editor. *Research methods in child language: A practical guide*. John Wiley & Sons; 2011 Sep 6.

Therefore, we would like to emphasise that this matching strategy was a deliberate and integral part of our study design aimed at enhancing the validity of our findings. While we acknowledge the apparent age imbalance between the two groups, this method was implemented to control for age-related factors and strengthen our comparative analysis's reliability. The suggestion is, however, incorporated, and a point is added in the **strength and limitations** of the study below the abstract: "**The scope of the study is specific to a particular age group and language levels and Carefully selected and language-age-matched participants, along with detailed narrative outcome measures that reveal significant differences**".

### Changes to the overall document:

The changes made in the document have been highlighted with track changes. Certain portions in the document are changed for coherence and clarity in lieu of the changes suggested by the reviewers. We also oblige to modify any further if we had overseen the errors elsewhere. Once again, thanks for reviewing the study and giving us an opportunity to present it better to readers. The reviewer's comment helped us restate the study and its observations better.

## VERSION 2 – REVIEW

<b>REVIEWER</b>	Fu, Xinxing Beijing Tongren Hospital, Beijing Institute of Otolaryngology
<b>REVIEW RETURNED</b>	06-Nov-2023
<b>GENERAL COMMENTS</b>	Well done with the revisions to all my comments and concerns.

## VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Dr. Xinxing Fu, Beijing Tongren Hospital, The University of Western Australia

Comments to the Author:

Well done with the revisions to all my comments and concerns.

Reviewer: 2

Competing interests of Reviewer: No competing interests

Response to Comment:

We would like to express our gratitude to the reviewers for their insightful comments; we found that many of them helped us improve the overall organisation of the paper.

Changes to the overall document:

The changes made in the document have been highlighted with track changes. Certain portions in the document are changed for coherence and clarity in lieu of the changes suggested by the editor. We also oblige to modify any further if we had overseen the errors elsewhere. Once again, thanks for reviewing the study and giving us an opportunity to present it better to readers. The reviewer's comment helped us restate the study and its observations better.