PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Healthcare service use and medical outcomes of tracheostomy-dependent children: a nationwide study
AUTHORS	Song, In Gyu Kim, You Sun Kim, Min Sun Lee, Ji Weon Cho, Yoon-Min Lim, Youna Kwon, Seong Keun Suh, Dong In Park, June Dong

VERSION 1 – REVIEW

REVIEWER	Tzyynong Friesen Rady Children's Hospital San Diego
REVIEW RETURNED	02-Dec-2023

GENERAL COMMENTS	This is a retrospective population-based study in Korea on children who underwent tracheostomy prior to age 2, examining outcomes related to 2-year mortality and post-discharge healthcare utilization. The authors reported unique information from

VERSION 1 – AUTHOR RESPONSE

Reviewer 1

The manuscript would benefit from minor revisions to focus its discussion on actionable items.

-Highlight existing studies that also demonstrated the value of home health nursing in pediatric tracheostomy care

Response: Thank you for your valuable suggestions. We have revised the discussion section to address the points you raised and those highlighted by the editor (line 282-288).

"Those receiving home care nursing demonstrated a lower risk of mortality in this study. Home care nursing has been shown in previous studies to assist with transitioning safely from the hospital to home and reducing the risk of readmission. Additionally, research has demonstrated its ability to decrease family burnout and enhance the quality of life for children [36-38]. Furthermore, cost-effectiveness analyses have revealed significant cost-saving effects associated with home care

nursing [36, 39]. Establishing supportive systems like home healthcare could potentially contribute to reducing mortality rates and alleviating the burden on families."

-Elaborate on existing literature related to preventable causes of tracheostomy readmission and methods of intervention. Propose potential interventions based on the ACSCs discovered in this study. The authors made helpful suggestions regarding telemedicine resources. While I certainly see the value of parental education, I had trouble with the claim that parental education could reduce hospital admissions particularly since the main reasons for admissions were respiratory infections or seizures (Table 4), not accidental decannulation or conditions related to poor caregiver judgment.

Response: This is an important point. It appears that further explanation was needed on why parental education is crucial, particularly in relation to readmissions. Given that respiratory problems constituted a significant portion of the reasons for readmission, we have added explanations and relevant citations in the discussion section (line 251-256).

"In this study, most hospitalisations after tracheotomy were due to respiratory or neurological conditions. Notably, among the top 10 conditions, seven were identified as ACSCs, and eight among the top 20 conditions were respiratory problems. The aforementioned comprehensive measures could help minimise avoidable hospitalisations [12, 13, 26, 27]. In order to reduce respiratory problems at home, caregivers should be educated on adequate secretion management, clean techniques for aspiration, and the importance of vaccination [28]."

-Instead of extracting the primary and top 5 secondary diagnoses for admission, have the authors tried narrowing it to just the primary diagnosis or top 3 diagnoses for hospitalization? Many of the diagnoses listed in Table 4 were not reasons for hospital admission (reflux, iron deficiency, allergic rhinitis, delayed milestone etc.) making the data difficult to interpret.

Response: Thank you for your suggestion. We apologize as we cannot conduct additional analysis because the data access permission granted by the National Health Insurance Service has expired. Unfortunately, we cannot conduct even a simple additional analysis. To reduce the difficulty of interpretation, we have revised the results to show the top 20 instead of the top 30 diagnoses.