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CORRESPONDENCE

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# Comment on Ruano-Zarogosa M

To the Editor,

We read with appreciation the valuable systematic review by Ruano-Zaragoza et al.,[1] which comprehensively examined the prevalence and impact of feeding difficulties (FD) in children with eosinophilic esophagitis (EoE). This insightful work highlighted significant heterogeneity in FD definitions and diagnostic tools, underscoring a critical need for standardized methods. It also shed light on various FD phenotypes, including adaptive behaviors, slow eating, and choking/coughing during meals. Our research group, the Gazi University Pediatric Eosinophilic Gastrointestinal Diseases Working Group, has been actively working to enhance the understanding of EoE symptoms and associated challenges in children. We believe our recently published articles directly address several of the key gaps identified in your comprehensive review, offering valuable perspectives and tools for the field.

As the working group, while translating the internationally recognized Pediatric Eosinophilic Esophagitis Symptom Scores® (PEESS v2.0), a symptom score applicable to children with EoEinto Turkish, we first developed our initial scale: the Gazi University Eosinophilic Esophagitis Symptoms and Adaptive Behavior Scale (GaziESAS).[2] It was developed to evaluate the validity and reliability of Turkish Pediatric Eosinophilic Esophagitis Symptom Scores® (Tr-PEESS v2.0) and is a parent-proxy instrument that assesses symptoms (19 items) and adaptive eating behaviors (12 items); GaziESAS has successfully completed the scale development process. Two of the 12 items assessing adaptive eating behaviors in GaziESAS: "preparing softer and more liquid food to prevent vomiting" (item 30) and "insisting or forcing the child to eat" (item 31) are items that align with the definition of maladaptive feeding as outlined in the task force glossary.

Following this, we developed a second version, GaziESAS v2.0, by building upon and enhancing our initial instrument.[3] This latest version is the first high-quality pediatric scale with rigorously validated reliability, specifically designed to measure EoE symptoms and adaptive behaviors across distinct age groups: children (7–11 years), adolescents (12–18 years), and parents (2–18 years). This development directly addresses the systematic review's emphasis on the "heterogeneity of diagnostic tools" by offering age-appropriate, standardized formats. GaziESAS v2.0 comprises 20 items across two main domains: symptoms (subdivided into dysphagia and non-dysphagia) and adaptive behaviors. A key innovation is a dedicated seven-item domain for adaptive behaviors, capturing nuances such as eating slowly, excessive chewing, portioning food, or mixing food with liquids, prefer to eat soft foods or avoid eating hard or solid foods. This offers a concrete, measurable framework for phenotypes like "maladaptive feeding," "slow eater," and "aversive/avoidant eating" identified in the review, addressing the limitations of current patient-reported outcome (PRO) tools in evaluating adaptive coping mechanisms.

The review also points out that IgE-mediated food allergies accompanying EoE, as well as the elimination diets used in its treatment, may also influence the outcomes of feeding difficulties, particularly with regard to growth and nutritional impact. Furthermore, other IgE-mediated conditions such as pollen food allergy syndrome, which is more common in older children and adults, and the recently described Food-Induced Immediate Response of the Esophagus (FIRE), whose mechanism remains unclear, may also contribute to feeding difficulties and their consequences in EoE.[4,5]

As a group, we also studied oropharyngeal component of dysphagia in EoE which may impact feeding difficulties further.[6] In that study, we demonstrated that oropharyngeal dysphagia manifesting as abnormal swallowing affected 51.9% of children, while increased aspiration risk was present in 25.0%. A significant finding was that seven children failed the swallow test. The study identified uncontrolled disease, prolonged mealtimes, and impaired chewing function as key correlates of abnormal swallowing and increased aspiration risk with chewing function emerging as the strongest predictor of both abnormal swallowing and increased aspiration risk. By exploring aspiration risk and chewing difficulties, this research moves beyond the general symptom of "gagging or coughing while feeding" cited in the systematic review, emphasizing that feeding difficulties in EoE are not solely driven by esophageal dysfunction but also involve critical oropharyngeal components. Notably, the study also provided evidence linking oropharyngeal dysphagia to unexplained recurrent pneumonia in a subgroup of children with EoE.

In the most recent study, we investigated further whether children with EoE experience sensory processing difficulties (SPD) that may have an impact on feeding difficulties.[7] We found significant challenges in oral sensory processing, oral sensory sensitivity, and vestibular processing compared to healthy controls. Limited

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exposure to diverse textures and tastes during critical periods of sensory development can lead to altered sensory discrimination, manifesting as food aversions or difficulty detecting oral stimuli. This may, in turn, contribute to compensatory feeding behaviors, such as overstuffing the mouth or preferring extreme taste profiles like very sweet or sour foods, all of which are categorized as feeding difficulties in the systematic review.

In conclusion, although these studies do not provide data on the prevalence of feeding difficulties in EoE, they address the gaps highlighted in the systematic review by presenting a valid and reliable tool (GaziESAS and GaziESAS v2.0) to identify the diversity of feeding difficulties in EoE and the adaptive behaviors developed in response. They also shed light on how feeding difficulties vary according to the affected swallowing regions (oropharyngeal, esophageal, or both) and suggest that insufficient or inappropriate sensory input to the brain resulting from oropharyngeal and/or esophageal dysphagia may underlie or exacerbate these feeding difficulties through impaired sensory processing.

## AUTHOR CONTRIBUTIONS

**Arzu Bakirtas:** Writing – original draft; conceptualization; writing – review and editing. **H. Ilbilge Ertoy Karagol:** Writing – review and editing. **Muserefe Nur Keles:** Writing – review and editing. **Dilek Yapar:** Writing – review and editing. **Bulent Elbasan:** Writing – review and editing. **A. Kubra Baskın:** Writing – review and editing. **Hakan Ozturk:** Writing – review and editing. **Odul Egritas Gurkan:** Writing – review and editing. **Sinan Sari:** Writing – review and editing. **Buket Dalgic:** Writing – review and editing.

## CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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