

# Challenges and Considerations in Assessing GERD: A Critical Review of a Study in Southern Punjab, Pakistan [Response to Letter]

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## Dear editor

We are writing in response to the letter submitted by Qureshi et al regarding our article titled “Challenges and Considerations in Assessing GERD: A Critical Review of a Study in Southern Punjab, Pakistan.” We appreciate the opportunity to address their concerns and engage in constructive dialogue regarding our research.

Firstly, we extend our gratitude to Qureshi et al for their detailed letter, which not only highlighted areas of concern but also acknowledged the positive aspects of our study. Their insights have provided valuable points for discussion and reflection.

In response to the concerns raised about the association between carbonated/soft drinks and GERD, we appreciate their reference to existing literature, including the study by T Johnson et al.<sup>1</sup> However, we would like to clarify that the study referenced was conducted 15 years ago, and newer evidence, such as the systematic review and meta-analysis exploring the risk factors associated with GERD by Nirwan et al,<sup>2</sup> supports a significant relationship between moderate/high intake of carbonated drinks and GERD prevalence. This meta-analysis provides robust support for our findings and strengthens the discussion surrounding the association between soft drink consumption and GERD, which is already mentioned in the discussion section of our study. Specifically, Nirwan et al found that subjects with a moderate/high intake of carbonated drinks had a higher pooled prevalence of GERD than those with low/none intake (18.60% vs 14.54%, respectively), with an odds ratio (OR) of 1.29 and a relative risk (RR) of 1.24 associated with moderate/high intake of carbonated drinks. In addition to that there are some additional studies such as Heidarzadeh-Esfahani et al<sup>3</sup> and Taraszewska et al<sup>4</sup> to further strengthen the discussion surrounding our findings.

Regarding the concern about recall bias introduced by the self-reported soft drink consumption in our survey instrument, we acknowledge the limitation of this methodology. However, we would like to assure Qureshi et al that we took measures to mitigate this bias as much as possible, including obtaining detailed information on soft drink consumption through a structured questionnaire provided in the supplementary file of our article. Additionally, we recognize the importance of symptomatic assessment using validated tools like the GerdQ questionnaire in contexts where frequent laboratory testing may not be feasible or accessible for patients.

Furthermore, we appreciate their observation regarding the sample size limitation in our study. We employed the Denial formula to calculate the minimum sample size required as mentioned in our study as a reference to minimum

requirements. We acknowledge the need for larger sample sizes to enhance the statistical power and improve the precision of prevalence estimates. We will consider their recommendation for future research endeavors.

In response to their suggestion for further research on the correlation between carbonated beverages and GERD, we agree on the importance of exploring specific aspects (Amount and strength) of soft drink consumption to better understand their impact on exacerbating GERD symptoms by using methods like dietary records and biomarker analysis. We are committed to incorporating this recommendation into future discussions and research endeavors.

In conclusion, we express our sincere gratitude to Qureshi et al for their attention to our study and their commitment to advancing the understanding of GERD. We value their contributions to the academic discourse surrounding this topic and look forward to continued collaboration in this important area of research.

## Disclosure

The authors report no conflicts of interest in this communication.

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