Letter to Editor

Insights about Human-Centered Design Analysis as a Tool to Improve Patients’
Tolerance with Non-Invasive Ventilation

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Abbreviations
NIV: noninvasive ventilation
HCD: human-centered design

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qualitative analysis
To editor:

We have read this article, Exploring the Patient Experience with Noninvasive Ventilation: A Human-Centered Design Analysis to Inform Planning for Better Tolerance, with great interest, which allows us to analyze the perspective of the patient and the psychological impact associated with initiation, maintenance, and methodology of treatment with non-invasive ventilation (NIV) [1]. We want to congratulate the authors for this original study, however, in order to extend the results obtained and identify new strategies to improve tolerance with NIV, we could consider some issues that need more clarifications.

First, in this study patients were interviewed using a guide based on the human centered design (HCD) motivational approach; however, it is not clarified whether there were any aspects that could affect the patient's neuropsychological state prior to entering the study: particularly it is not specified if the patients had a previous history of evaluation from psychology-psychiatric conditions or they were using anxiolytic or antidepressant drugs before entering the hospital and undergoing NIV.

About methodology, it is also unclear if the semi-structured interview used has been previously validated or tested by an expert panel. Also, authors say that “the steps of the patients’ experience are captured in a stepwise narrative creating a journey map” but it is not clear if interviewers used any type of interventions for those patients who did not show adherence to this protocol thus affecting the description of the overall experience and data collection. Another methodological problem is the analysis of patient's emotions and their codification as negative, neutral, or positive: in this regard it would be important to know if the authors used any grading scheme to encode emotions that would give objectivity and reproducibility to the data analysis.

Other important aspects to consider are the application methods and monitoring protocols for NIV. Firstly, the authors identify the discomfort with the mask as one of the main themes which influenced tolerance to NIV; however, physicians are often aware that interface intolerance is one of the main factors in NIV failure and they often apply several strategies to increase patient’s comfort and adherence [2]: in this study it is not analysed whether this problem was stable during treatment and observation period or strategies have been implemented to solve it. Secondly, it must be considered that the level of acceptance of NIV
also depends on the ventilation mode used and the patient-ventilator synchrony [3]: in this study the ventilation modality and its changes during the treatment are not specified and patients may have attributed to the mask the discomfort related to inadequate adaptation and breathing synchronization with ventilator. Thirdly, since it becomes often necessary the use of analgo-sedative drugs to keep the patient in a comfortable condition while receiving NIV [4], it would be helpful to know if patient received a pharmacological support during ventilation. Lastly, the setting of application of NIV is not reported and this aspect is important because the hospital environment influences the patient's psychological state and perception of treatment [5].

The authors also discuss how patients felt threatened by fear of intubation: we feel this is very difficult to combat as patients many times present in exacerbation and are high risk for invasive ventilation support; therefore this condition requires treating clinicians to stress the importance of NIV to patient to prevent progression to intubation. Similarly, it was not reported if this perception, reported by patients, was mostly in those that did fail NIV or if they were non-responsive and awoke wearing the mask; this is important as these conditions could have increased the feeling of fear.

In conclusion, we think that future studies are important to know if this optimization protocol based in NIV-patient-experience is a useful rational approach to improve NIV tolerance.

**Declaration of Interest:** the authors have no conflict of interest to report.
References


