






## A very simple tool to promote asthma education

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To the Editor,

One of the pillars to achieve asthma control is the degree of knowledge that patients demonstrate about their condition<sup>1-3</sup>. Several studies have shown that greater knowledge about asthma from the patients' perspective is associated with better disease control, fewer acute exacerbations, and improved quality of life<sup>4-6</sup>. Thus, health care providers must take every available opportunity to promote asthma education.

It is usual for patients followed in Brazilian public health services to wait for a significant amount of time in collective areas before their medical consultation. In this scenario, many institutions provide audio and video monitors which continuously show relevant messages and health information. However, due to the considerable costs of such monitors, a substantial number of public clinics and hospitals cannot afford to acquire these pieces of equipment.

To overcome these budget issues and to provide consistent asthma-related information for patients from the Federal University of São Paulo, we created a 30 cm × 43 cm panel containing the following messages in bright-colored letters:

Asthma has no cure! (*Asma não tem cura!*);  
But it has control! (*Mas tem controle!*);  
Avoid triggers! (*Evite fatores desencadeantes!*);  
Use the medication correctly! (*Use a medicação corretamente!*).

This plastic panel was posted in a high and visible place in the collective waiting area of our service. The second panel of the same dimensions was placed right above the first one, showing another message (Asthmatic, check this! *Asmático, veja isso!*), along with a large arrow pointing to the first panel to draw even more attention from patients.

To investigate the impact of these panels on patient's asthma knowledge, a questionnaire was administered by internal medicine residents and respiratory fellows during the weekly asthma

outpatient clinic for 10 weeks before the panels placement and for 11 weeks thereafter. Non-literate subjects or subjects demonstrating cognitive or visual impairment were excluded from the study.

The questionnaire had four questions, displayed in this order:

1. Is asthma curable?;
2. Does asthma have control?
3. Do you think it is important to avoid dust, cats, cleaning supplies, strong smells, and other asthma triggers?
4. Do you think it is important to use the prescribed drugs as instructed during consultations?

For each of these questions, the patients could answer either "Yes," "No," or "I do not know." For statistical purposes, all "I do not know" answers were combined and analyzed together with the "No" answers. After the panels installation, the patients were also asked whether they had seen them and how useful they were from their perspective. Considering that most patients from our clinic are followed every 3 or 6 months, only one notice panel exposure occurred for all subjects.

The Pre-Intervention Group included 82 participants, which consisted mostly of women (n=62, 75.6%), with a mean age of 54.7±17.5 years. For the first question, 37.8% of the responders (n=31) answered incorrectly that asthma can be cured. Regarding the second and third questions, the majority of participants acknowledge that asthma can be adequately controlled (n=78; 95.1%) and that they should avoid, whenever possible, potential asthma triggers (n=77; 93.9%). For the last question, all participants unanimously confirmed the importance of complying with their asthma prescribed medication as instructed during the consultations.

The Post-Intervention Group had 94 subjects (71 were women; 75.5%), with a mean age of 56.8±15.8 years. Of those, 65 (69%) participants admitted they had seen the messages in both panels, whereas 29 (31%) affirmed they had not observed them. When we compared the proportions of expected answers before and after panels placement, we found a significant increase in answers considered correct for the first question

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**Table 1.** Proportion of observed answers reported by asthmatic patients before and after panels placement containing educational messages about asthma.

	Question 1	Question 2	Question 3	Question 4
Pre-Intervention Group	51/82 (62.2%)	78/82 (95.1%)	77/82 (93.9%)	82/82 (100.0%)
Post-Intervention Group (all)	72/94* (76.6%)	92/94 (97.9%)	87/94 (92.6%)	(94/94) (100.0%)
Post-Intervention (subjects who saw the warning)	51/65* (79.7%)	63/65 (96.9%)	60/65 (92.3%)	65/65 (100.0%)
Post-Intervention (subjects who did not see the warning)	21/29 (72.4%)	29/29 (100.0%)	27/29 (93.1%)	29/29 (100.0%)

\* $p < 0.05$  by Fisher's exact test comparing to the pre-intervention group.

based on our entire sample ( $n=176$ ;  $p=0.048$ ; Table 1). When considering participants who had seen ( $n=65$ ) and who had not seen ( $n=29$ ) the panels, a significant increase in the proportion of correct answers was identified only among the first ones ( $p=0.047$ ). We did not detect any significant differences between answered and expected answers before and after the panels placement for the remaining three questions.

The current results show that, except for Question 1, the overall answers provided by our patients were quite satisfactory, showing a higher than 90% agreement between theirs and the expected answers, even before the panels placement. These findings are largely explained by the fact that the majority of these participants had been followed in our clinic for several years. In line with this assumption, these results could have been significantly different, if the participants consisted primarily of patients who had been recently admitted to the pulmonology service. Nevertheless, initially, approximately one-third of our participants believed that their asthma was curable or did not know how to answer the question appropriately, which seems to be surprisingly high, since the medical team always reinforce this concept during medical consultations.

The percentage of patients who reported not having seen the panels was 31%. For participants who had seen the panels, 94% of those found the information provided useful. Given that the Pre-intervention group already showed a high percentage of expected answers, we could not identify a clear impact of the panel messages on the accuracy of these questions. However, we

did see a significant increase in the proportion of subjects who answered appropriately the first question, with this finding only being observed in the participants who had seen the panels. These results indicate that this simple intervention contributed to a better understanding of our patients regarding their asthma condition. This exposure took place only once for each participant in our study, leading us to assume that recurrent exposures to these panels could lead to even better results. It is also important to emphasize that there was no overlap between participants included in the Pre-and Post-Intervention groups in the study.

In conclusion, asthma-related information, displayed in inexpensive panels in collective waiting areas, can be quite useful in transmitting or reinforcing to patients basic important principles of asthma management. Beyond the scope of this study, we can speculate that this simple educational intervention may help patients to better cope with their asthma and, possibly, achieve a better clinical control.

## AUTHORS' CONTRIBUTIONS

**JBM:** Conceptualization, Data curation, Formal analysis, Methodology, Supervision, Writing – original draft, Writing – review & editing. **FSLF:** Data curation, Writing – review & editing. **AMRS:** Investigation, Writing – review & editing. **GMG:** Investigation, Writing – review & editing. **LSBC:** Investigation, Supervision, Writing – review & editing.

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