


# Depression, perceived stress related to COVID, post-traumatic stress, and insomnia among asthma and COPD patients during the COVID-19 pandemic

Chronic Respiratory Disease  
Volume 17: 1–3  
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DOI: 10.1177/1479973120962800  
journals.sagepub.com/home/crd  


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## Abstract

**Introduction:** The COVID pandemic has had a high psychological impact on healthy populations. Increased levels of perceived stress, depression, and insomnia are expected, especially in people with pre-existing medical conditions, such as asthma and chronic obstructive pulmonary disease (COPD), who seem to be particularly vulnerable. However, the difference in psychological distress frequency between asthma and COPD patients is unknown. **Objective:** To compare the prevalence of depression, perceived stress related to COVID, post-traumatic stress, and insomnia in asthma and COPD patients at a pulmonology clinic in Santa Marta, Colombia. **Methods:** A cross-sectional study was designed. The patients were contacted by telephone. An electronic link was sent to those who accepted. The questionnaire asked for perceived stress related to COVID-19, post-traumatic stress symptoms, depressive symptoms, and insomnia risk. **Results:** 148 asthma patients and 144 COPD patients participated in, between 18 and 96 years. The prevalence of high COVID-19 perceived stress was 10.6% (n = 31); post-traumatic stress risk, 11.3% (n = 33); depression risk, 31.5% (n = 92); and insomnia risk, 57.7% (n = 169). No significant differences were found between asthma and COPD in indicators of psychological distress. **Conclusions:** Asthma and COPD patients present similar frequencies of depression risk, COVID-19 perceived stress, post-traumatic stress risk, and insomnia risk during the Colombian lockdown. It is essential to evaluate and manage psychological distress among asthma and COPD patients. It can reduce the risk of exacerbation and improve the quality of life.

## Keywords

Depression, stress, insomnia, asthma, COPD

Date received: 19 June 2020; accepted: 8 September 2020

## Introduction

The COVID pandemic has had a high psychological impact on healthy populations; it has increased the reporting of depression, perceived stress, post-traumatic stress, and insomnia.<sup>1</sup> Increased levels of perceived stress, depression, and insomnia are expected, especially in people with pre-existing medical conditions, such as asthma and chronic obstructive pulmonary disease (COPD), who seem to be particularly vulnerable.<sup>2</sup> The COVID pandemic

configures a significant stressor due to the changes associated with confinement, stay at home, physical

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**Table 1.** Comparison of psychological distress indicators between asthma and COPD patients.

Variable	COPD	Asthma	OR (95%CI)	
	n (%)	n (%)	Crude	Adjusted <sup>a</sup>
Depression risk	39 (28.5)	46 (32.9)	0.81 (0.49–1.36)	0.81 (0.44–1.48)
High perceived stress <sup>b</sup>	12 (8.8)	16 (14.4)	0.74 (0.34–1.64)	1.00 (0.39–2.55)
Post-traumatic stress risk	14 (10.2)	15 (10.7)	0.95 (0.44–2.05)	0.92 (0.37–2.26)
Insomnia risk	71 (51.8)	85 (60.7)	0.70 (0.43–1.12)	0.96 (0.54–1.71)

<sup>a</sup>Adjusted by age and gender.

<sup>b</sup>Related to COVID.

distancing, and daily routine changes. Stressors can increase the risk of exacerbation and fatal outcome in people with pulmonary morbidity.<sup>3</sup> It was hypothesized that COPD patients would present more considerable psychological distress than asthma patients based on disease features.<sup>4</sup>

The study aimed to compare the prevalence of depression, perceived stress related to COVID, post-traumatic stress, and insomnia in asthma and COPD patients at a pulmonology clinic in Santa Marta, Colombia.

## Methods

A cross-sectional study was designed; it was approved by the Research Ethics Committee of the University of Magdalena, Santa Marta, Colombia (Act 002 of March 26th, 2020). Asthma and COPD adult outpatients gave informed consent and participated in the study, as stipulated in the Declaration of Helsinki.

The patients were contacted by telephone. An electronic link was sent to those who accepted. The questionnaire asked for demographic information and completed four scales: Perceived Stress Related to COVID-19 ( $\alpha = 0.87$ ), cut-off point 25 for high perceived stress<sup>5</sup>; Brief Davidson Trauma Scale ( $\alpha = 0.81$ ), cut-off point 12 for post-traumatic stress risk<sup>6</sup>; Patient Health Questionnaire, PHQ-9 ( $\alpha = 0.87$ ), cut-off point 7 for depression risk<sup>7</sup>; and Athens Insomnia Scale ( $\alpha = 0.84$ ), cut-off point 6, insomnia risk.<sup>8</sup> Crude odds ratios (OR) were calculated, and after ORs were adjusted for age and gender.

## Results

Three hundred seven patients was contacted, and 227 (90.2%) accepted to participate in, 148 asthma patients and 144 COPD patients. The ages were between 18 and 96 years ( $M = 60.4$ ,  $SD = 17.6$ ); COPD patients were significantly older than asthma

patients ( $M = 70.8$ ,  $SD = 11.4$  versus  $M = 50.4$ ,  $SD = 16.7$ ;  $t = 12.2$ ,  $df = 290$ ,  $p < 0.001$ ). By gender, 189 women (64.7%) and 139 men (35.3%); the female group was over-represented in the asthma group (71.6% versus 57.6%,  $p = 0.01$ ). The prevalence of high COVID-19 perceived stress was 10.6% ( $n = 31$ ); post-traumatic stress risk, 11.3% ( $n = 33$ ); depression risk, 31.5% ( $n = 92$ ); and insomnia risk, 57.7% ( $n = 169$ ). See Table 1 presents no significant differences between asthma and COPD in indicator of psychological distress.

## Discussion and conclusion

The present analysis was observed a similar frequency of high COVID-19 perceived stress, post-traumatic stress risk, depression risk, and insomnia risk among asthma and COPD patients during the Colombian COVID lockdown. This finding is comparable to a previous study before the COVID pandemic; it was observed that scores for psychological distress were similar among asthma and COPD patients.<sup>9</sup> Conversely, other researchers reported that COPD patients reporting frequent mental distress because it was related to more common physical distress, disability, limitations, or requiring special equipment.<sup>4</sup> It is essential to evaluate and manage psychological distress among asthma and COPD patients. It can reduce the risk of exacerbation and improve the quality of life.<sup>10</sup>

This research compares patients with COPD and asthma of the frequency of some psychological distress indicators during the Colombian lockdown; nevertheless, there are some limitations. First, COPD and asthma patients had no control group from the general population. Second, the results cannot be generalized due to the sampling strategy.

In conclusion, asthma and COPD patients present similar frequencies of depression risk, COVID-19

perceived stress, post-traumatic stress risk, and insomnia risk during the Colombian lockdown.

### Acknowledgments

To the Universidad del Magdalena for supporting the study.

### Author contributions

Both authors contributed substantially to the conception and design of the study, the collection, analysis, and interpretation of the data, the draft and critical review of the intellectual content, and the approval of the final version.

### Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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