

## RISK PERCEPTION AND KNOWLEDGE OF COVID-19 IN PATIENTS WITH CELIAC DISEASE

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**Background:** Celiac disease (CeD) has been associated with an increased risk of respiratory infections, however, we recently demonstrated that the odds of contracting COVID-19 in patients with CeD is similar to that of the general population. Due to this discrepancy, how patients with CeD perceive their risk may differ from their actual risk.

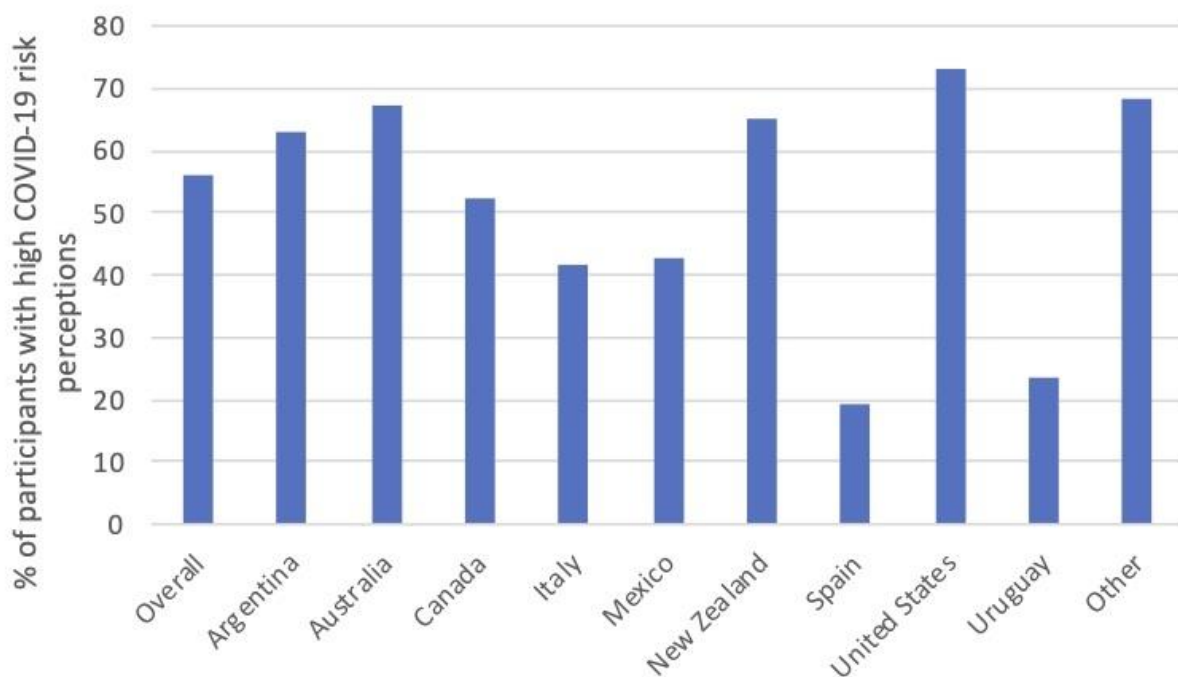
**Aims:** The aim of this study was to investigate the risk perceptions for contracting COVID-19 in patients with CeD and to determine the factors that may influence their perceptions.

**Methods:** We distributed a survey throughout 10 countries between March and June 2020 and collected data on demographics, diet, COVID-19 testing, and risk perceptions of COVID-19 in patients with CeD. Participants were recruited through various celiac associations, clinic visits, and social media. Risk perception was assessed by asking individuals whether they believe patients with CeD are at an increased risk of contracting COVID-19 compared to the general population. Logistic regression was used to determine the influencing factors associated with COVID-19 risk perception, such as age, sex, adherence to a gluten-free diet (GFD), and comorbidities such as cardiac/respiratory conditions and diabetes. Data was presented as adjusted odds ratios (aORs).

**Results:** A total of 10,737 participants with CeD completed the survey. From them, 6,019 (56.1%) patients with CeD perceived they were at a higher risk or were unsure if they were at a higher risk of contracting COVID-19 compared to the non-CeD population. A greater proportion of patients with CeD had high levels of COVID-19

risk perceptions when compared to infections in general (56.1% vs 26.7%;  $p < 0.0001$ ). Consequently, 28.8% reported taking extra COVID-19 precautions as a result of their CeD. Members of celiac associations had lower rates of perceiving an increased risk of COVID-19 when compared to non-members (49.5% vs 57.4%,  $p < 0.0001$ ). Older age (aOR: 0.9; 95% CI: 0.9 to 1,  $p < 0.001$ ), male sex (aOR: 0.85; 95% CI: 0.76 to 0.94,  $p = 0.001$ ), and strict adherence to a GFD (aOR: 0.89; 95% CI 0.82 to 0.97,  $p = 0.007$ ) were associated with a lower perception of COVID-19 risk. Meanwhile, the presence of comorbidities was associated with a higher perception of COVID-19 risk (aOR: 1.34; 95% CI: 1.20 to 1.51,  $p < 0.001$ ).

**Conclusions:** Overall, a large proportion of patients with CeD, particularly females, those with comorbidities, or those not adhering to a strict GFD, believed they were or were unsure if they were at a higher risk of contracting COVID-19 due to their condition. As high levels of risk perception may increase an individual's pandemic-related stress and contribute to negative mental health consequences, healthcare providers should maintain consistent communication with the celiac community and provide them with evidence-based recommendations.



**Figure 1.** Country-specific risk perceptions of contracting COVID-19 in patients with CeD

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