

TEMPORAL VARIATIONS IN CONVERGENCE INSUFFICIENCY SYMPTOMS AMONG SPANISH UNIVERSITY STUDENTS: PRE- AND POST-PANDEMIC PERSPECTIVES



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OBJECTIVE

To evaluate annual changes in convergence-insufficiency symptoms, as measured by the Spanish CISS, in Optics and Optometry student cohorts from 2018 to 2025



CONCLUSION

The temporal variations in CISS scores suggest that symptoms related to convergence insufficiency may be modulated by contextual changes in near-vision demands. The differences observed around 2021 may reflect the impact of increased digital device use during the pandemic period, with later scores indicating a gradual return to more typical visual conditions. This highlights the potential influence of environmental visual workload on symptom levels.



METHODS AND RESULTS



Convergence Insufficiency Symptom Survey (CISS)

	2018 n = 37	2019 n = 47	2020 Lockdown	2021 n = 38	2022 n = 27	2023 n = 29	2024 n = 48	2025 n = 29
Total	11.1	12.9	-	17.4	14.2	15.0	13.0	10.9
Performance	4.9	5.3	-	7.3	6.3	5.4	5.9	4.7
Symptoms	6.1	7.6	-	10.1	7.9	9.6	7.2	6.2



General compassion:

- Significant year-to-year differences were found for the total CISS score and for both subsections (Kruskal-Wallis, all $p \leq 0.019$)



Pairwise compassion – Total CISS score:

- Significant differences were observed only between 2018 vs. 2021 and 2021 vs. 2025 (Wilcoxon with Bonferroni correction, both $p \leq 0.030$)



Pairwise compassion – Visual Performance section:

- Significant differences emerged only between 2021 vs. 2025 ($p = 0.047$)



Pairwise compassion – Ocular Symptoms section:

- Significant differences were detected between 2018 vs. 2021 and 2021 vs. 2025 (both $p \leq 0.009$)