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A mapping review of study designs and statistical methods used in early COVID-19 impact research
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Background:
The COVID-19 Pandemic has prompted a significant amount of research investigating the direct and indirect impacts of the disease on the population's health and well-being. However, the plethora of published literature on the topic requires its analysis to identify commonalities and potential areas for improvement. This study aims to describe the use of study designs and statistical methods in COVID-19 research to inform evidence-based decision-making.

Methods:
PubMed was searched using ''covid-19'' and ''data'' terms to retrieve records until November 2020. Articles reporting direct or indirect impacts of COVID-19 were included based on predefined criteria, and their methods sections were analysed using the R software. The full text was considered if the methods section could not be found parsed. Text-mining-related R packages were used to identify terms reporting study designs and statistical methods.

Results:
Of the 19837 records retrieved, 5473 were included after the screening stage, and 4463, for which the full text or methods section could be fetched, were analysed. Direct impacts of COVID-19 were reported in 2771 articles (62.1%) and indirect in 1692 (37.9%). Surveys, cohorts, trials, and cross-sectional designs were the most used in early COVID-19 research, with their frequencies differing between studies assessing direct and indirect impacts. Descriptive statistics were the most mentioned statistical method (88% of studies, n = 3937), followed by student's t-test (25.5%, n = 1138), logistic regression (23.3%, n = 1038) and chi-square test (22.3%, n = 997).

Conclusions:
This comprehensive overview of methodologies of early COVID-19 research highlights potential implications for the level of evidence produced by studies investigating the direct and indirect impact of the disease. The findings can guide policymakers and stakeholders on which evidence can support recommendations and which research gaps need to be addressed for better preparedness in future pandemics.

Key messages:
- Early COVID-19 research employed different study designs and statistical methods in studies assessing its direct or indirect impacts, with potential implications in the evidence produced.
- A comprehensive overview of methodologies used in early COVID-19 research can help evidence-based decision-making, address research gaps, and better prepare for future pandemics.