

COVID-19 SPECIAL

COVID-19 and research
in São Paulo State

ANNUAL REPORT

FAPESP

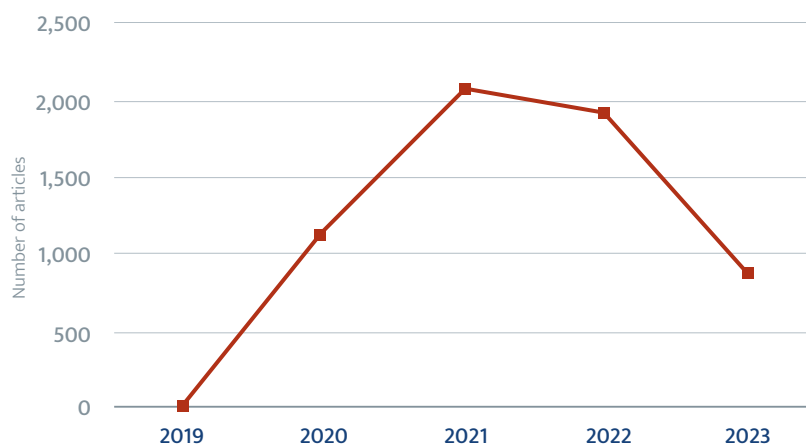
2022

The COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 took the world by surprise. Its impact on Brazil and São Paulo was huge. Many coronaviruses were already well-known, but research on this one was incipient. In 2020 and 2021, FAPESP issues calls for research proposals relating to COVID-19, and approved 91 projects for investment of more than \$ PPP 12 million. In first-quarter 2020 (Figure 1), the number of publications on the subject rose significantly. They surpassed 2,000 in 2021 and reached more than 6,000 all told, corresponding to 36% of nationwide production measured in terms of scientific articles on the subject. The number of publications remained high in 2022, albeit not at the same level as in the previous year.

FIGURE 1

NUMBER OF ARTICLES PER YEAR ON COVID-19

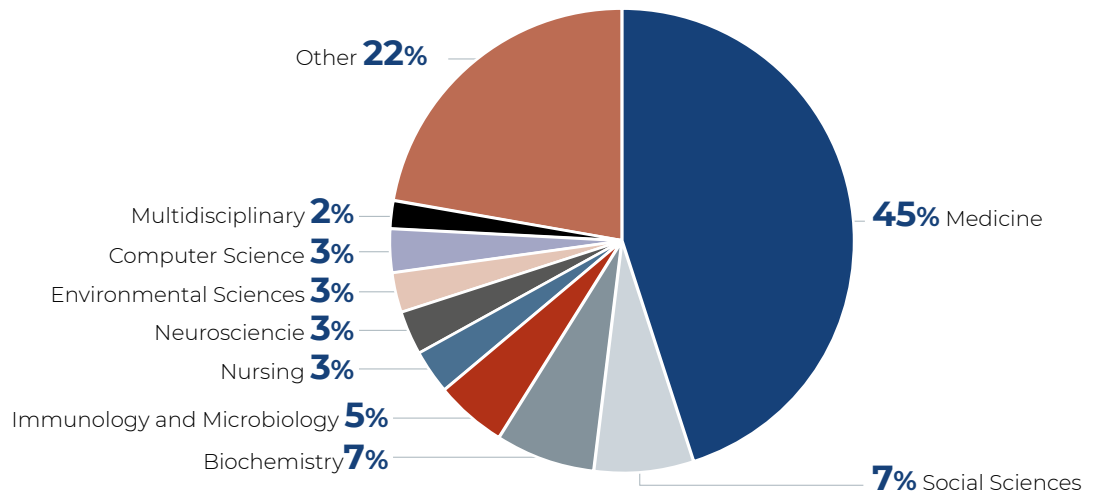
Published in indexed journals by researchers in São Paulo



Database: Scopus

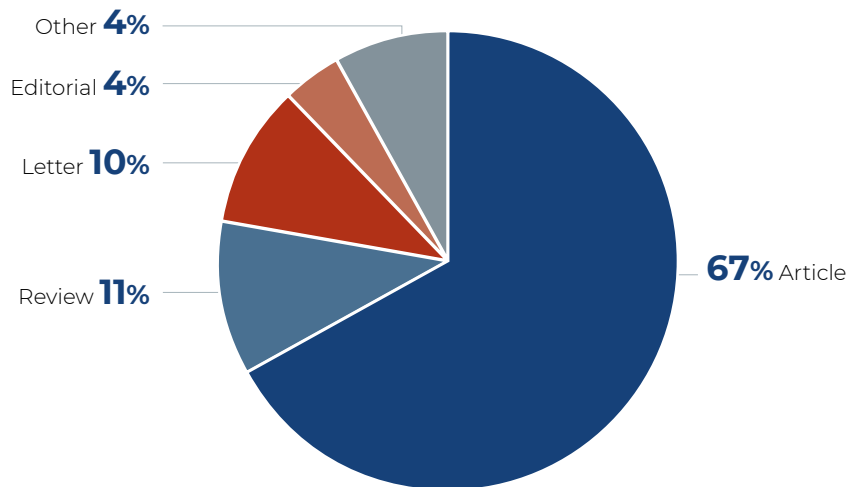
The knowledge areas present in these articles included medicine and nursing, immunology and microbiology, but there were also many in social sciences and biochemistry, constituting the second-largest group (Figure 2).

FIGURE 2 KNOWLEDGE AREAS DISCUSSED IN ARTICLES ON COVID-19 – BY RESEARCHERS IN SÃO PAULO

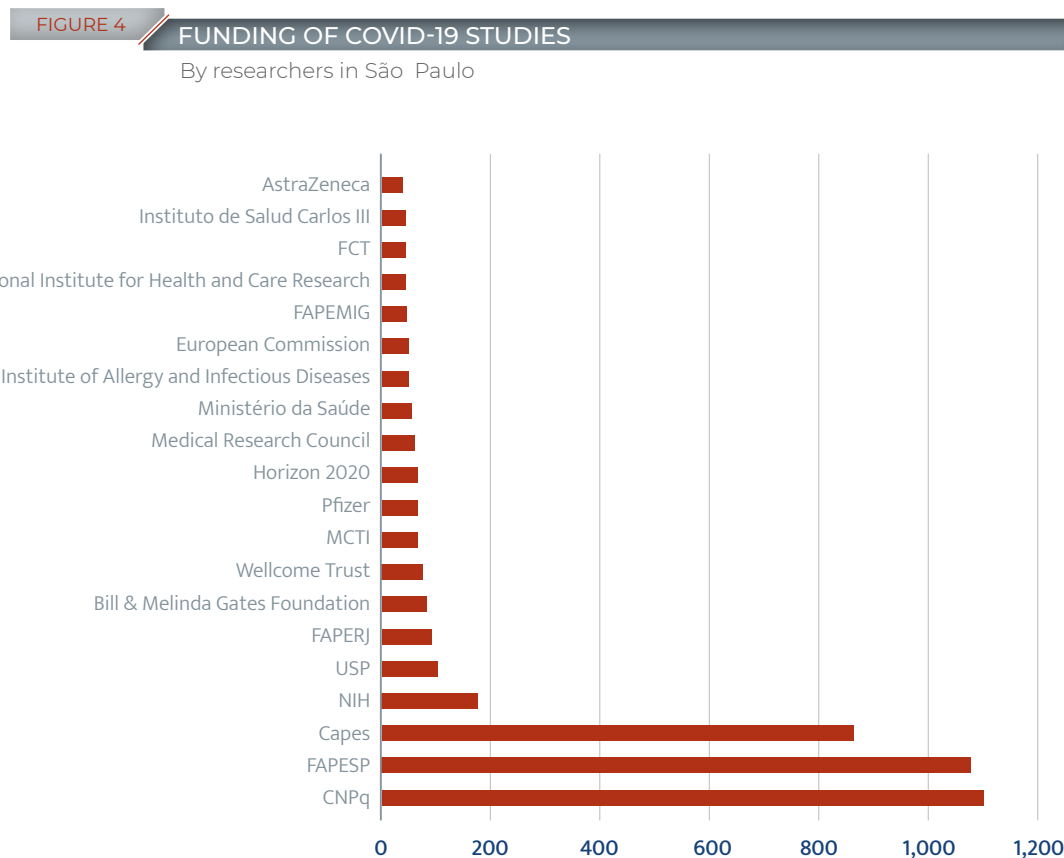


Almost 70% of the publications were articles (Figure 3) and 11% were literature reviews.

FIGURE 3 TYPE OF PUBLICATION ON COVID-19 – BY RESEARCHERS IN SÃO PAULO



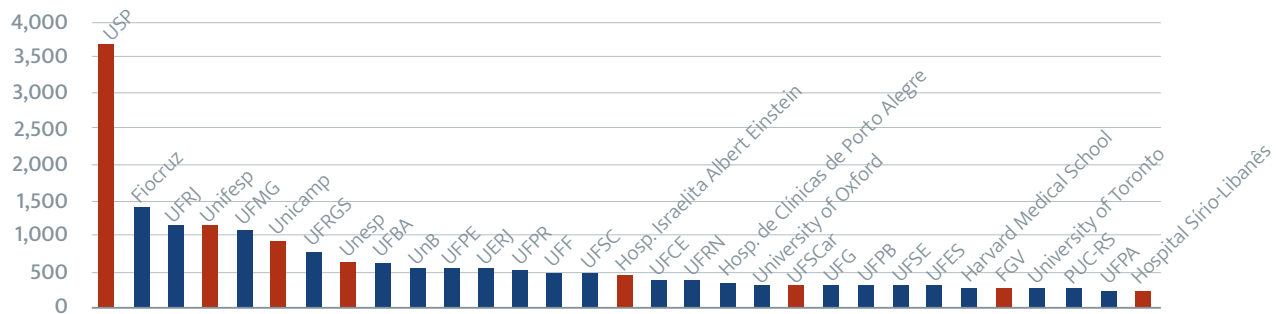
The main research funders (Figure 4) evidenced interaction among the federal and state governments, and domestic and foreign private and public companies.



The data also evidences the importance of research in São Paulo to the fight against the pandemic: three of the state’s universities ranked among the top six throughout Brazil by number of publications (Figure 5). The University of São Paulo (USP) had almost three times as many publications as the institution ranked next.

FIGURE 5

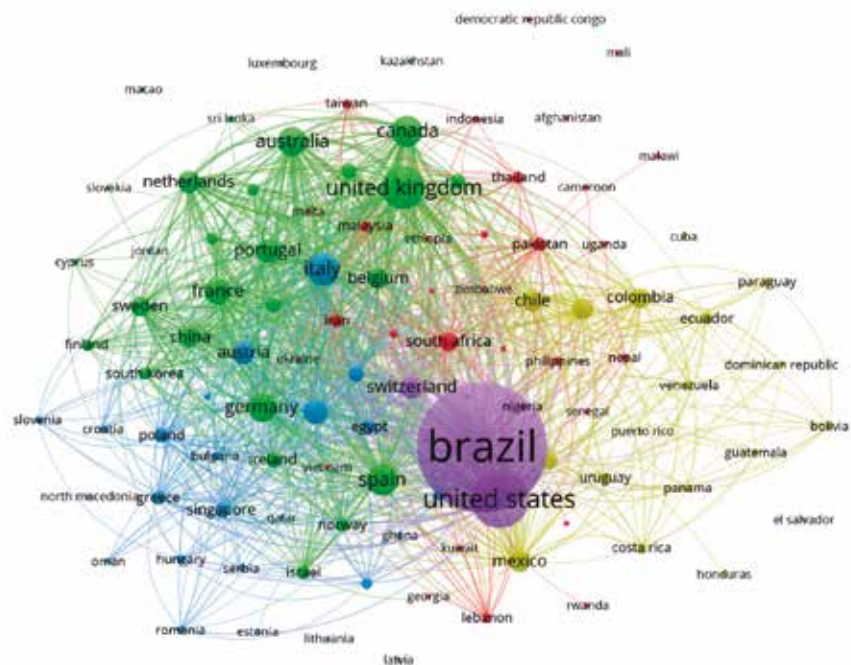
INSTITUTIONS PUBLISHING ON COVID-19 IN BRAZIL OR IN COLLABORATION WITH BRAZILIAN RESEARCHERS



Research conducted in São Paulo was part of the global effort to understand and contain the disease (Figure 6). Brazilian researchers belonged to several networks (different colors) in South and Central America (yellow), Western Europe (green), Eastern Europe and Asia (blue), and some Asian countries (red).

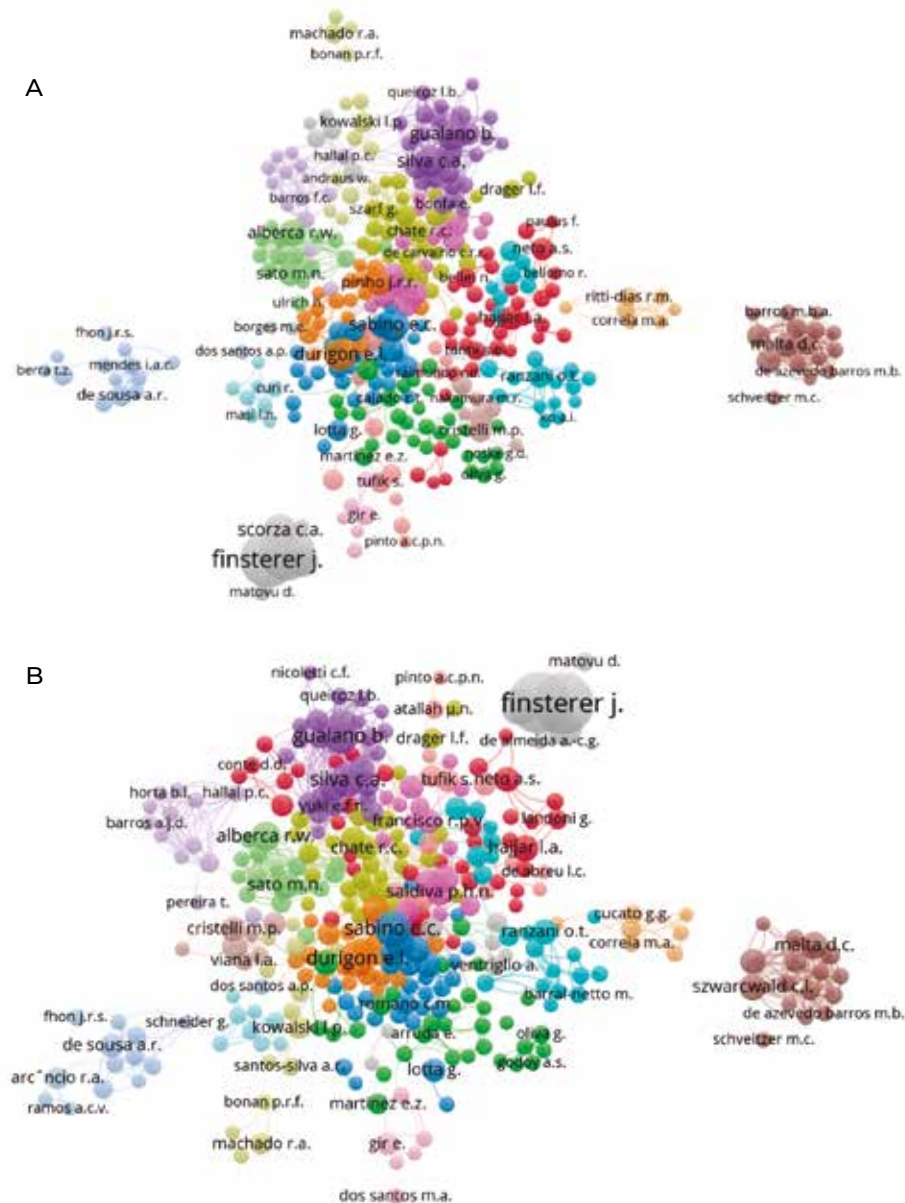
FIGURE 6

NETWORKS OF COUNTRIES INVOLVING RESEARCHERS IN SÃO PAULO IN COVID-19 STUDIES



The main COVID-19 research groups in São Paulo are shown in Figures 7a and 7b (from different perspectives). Some include foreign researchers alongside researchers based in São Paulo, while others are led by researchers based in São Paulo. They conduct research in several areas of medicine, such as virology, pathology, hepatology and intensive care, as well sports medicine, nursing and lifestyles, among others. It is fundamental to stress the importance of RIDCs to the COVID-19 response.

FIGURE 7 COVID-19 RESEARCH GROUPS IN SÃO PAULO FROM TWO DIFFERENT PERSPECTIVES



COVID-19 research areas are shown in Figure 8, ranging from mental health (*yellow*) to vaccination (*light blue*), policy (*green*), medical matters (*red*), and artificial intelligence, fake news etc. (*orange*).

FIGURE 8 COVID-19 TOPICS STUDIED BY RESEARCHERS IN SÃO PAULO

