WORK PACKAGE 5: RESEARCH METHODOLOGIES TO ASSESS THE IMPACT OF COVID-19

The implications of the COVID-19 pandemic reach far beyond the immediate mortality and morbidity aspects caused by the virus. There are many **indirect effects of the outbreak that affect population health**. These **include secondary consequences** of COVID-19 on long-term health and wellbeing and negative consequences due to delayed prevention, diagnosis, and medical treatment.

PHIRI WP5 aims at identifying the research approaches, data uses, pathways, indicators, and new methodologies to assess the impact of COVID-19 on population health.

Based on a collaborative work of researchers from 20 European institutions, 4 literature reviews are being performed to understand the **impact of COVID-19 on population wellbeing and health** and to provide a **better preparedness** for current and future crises. Namely:

1. a literature review to map the research methods analyzing the **impact of COVID-19** and data pathways;
2. a scoping literature review to **identify indicators of direct and indirect impacts**;
3. a systematic literature review on **determinants of SARS-CoV-2 infection** and the consequent severity for **short and long-term health outcomes**;
4. a systematic literature review and meta-analysis to determine the **effectiveness and impact of contact tracing of COVID-19 patients using digitals tools**.

FIRST RESULTS

In November 2020, more than 73,000 papers about COVID-19 were available in the PubMed database. About 16,000 (22%) reported **data aspects**, and approximately half reported both **data and methodologies aspects**. The most used **indicators of direct impact** are incidence and prevalence, mortality, severity, and sequelae. The search for impacts of etiological, prognostic effects, frailty, multimorbidity, and socioeconomic on SARS-CoV-2 infection and consequent severity generated 10,139 records. The main **identified outcomes** were: infection, ICU admission, hospitalization, mortality by COVID-19 (etiological), as well as survival, functional decline, quality of life, disability, mental health difficulties, and work absence (prognostic). About **mobile applications and electronic devices** for tracking COVID-19 patients, the initial literature search yielded 2500 records.

FIRST CONCLUSIONS

The use of **machine learning tools** to synthesize the research about methods and data pathways on COVID-19 impact on population health is **feasible**, as the amount of published evidence is very large. The vast amount of available literature on COVID-19 requires specific literature search methods, synthesis and an integrated effort of an **extensive network of researcher**.

LEARNINIG OPPORTUNITIES

Different workshops are being organised in order to address the COVID-19 impact by sharing the results of the studies and the experience of using the chosen methodologies:

- Workshop on digital and innovation tools for contact tracing in public health (Feb. 2022)
- COVID-19 Burden of Disease Training School, (March-April 2022)
- Workshop on methodologies to perform systematic reviews (2022)
- Webinar on research methodologies to assess the impact of COVID-19 (2022)

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