COVID-19 Snapshot Monitoring in Canada (COSMO Canada): Study Protocol

I. Aims and Objectives of the Study

The overall aim of the study is **to inform COVID-19 outbreak response efforts, including policy, interventions and communications**. The underlying objectives are to:

- Monitor variables that are critical for behaviour change in the population to avoid transmission of COVID-19, including risk perceptions, trust, use of information sources, knowledge as well as barriers and drivers to recommended behaviours;
- Document changes over time in these variables to understand the effect of measures taken;
- Monitor possible issues related to misinformation and stigma as they emerge to allow for early and rapid response;
- Identify relations between variables to assess and define the most effective and cost-effective response;
- Explore the relationship of psychological variables (e.g. fear, worry, distance) with the evolution of the pandemic and epidemiological situation;
- Identify gaps between perceived and actual knowledge;
- Evaluate the effectiveness of pandemic response measures, and the acceptance and effectiveness of policies and restrictions implemented;
- Continuously learn from other countries as the situation evolves; and
- Contribute to post-outbreak evaluation, thereby contributing to continued regional/global efforts to better understand causal relations and effective mechanisms of crisis response.

II. Research Questions

Overall, research questions relate to:

- ***Levels of*** and ***changes in*** risk perceptions, knowledge, used and trusted sources of information, confidence in crisis management, correct knowledge about and uptake of preparedness and protective behaviours, at each data collection point;
- How changes in risk perceptions relate to characteristics of the outbreak and other psychological variables such as knowledge, affect and misinformation;
- Whether participants report that they are aware of specific outbreak response measures and whether being aware of them influences risk perceptions;
- Whether risk perceptions are positively related to preparedness and protective behaviours and which other factors are relevant correlates of preparedness and protective behaviours (e.g. knowledge, misinformation, trust);
- Knowledge and misinformation about preparedness and preventive measures and whether the level of knowledge is related to certain sources of information; and
- Reactions to announcements and programs from the Government of Canada to help combat the COVID-19 outbreak, and its associated effects.

If additional research capacity is available, the data can be triangulated with data on media reporting, imported or confirmed cases, etc., to explore:

- Relationships between psychological variables and characteristics of the outbreak situation (i.e. how closely the perceived risk mirrors reported cases, relative import risk, media reports); and
- Whether it is possible to identify the emergence of certain misinformation as a correlate of risk perceptions.

III. Methodology

The study will be conducted with an online panel using a longitudinal design (i.e. the same participants, where possible, will be completing the survey each week). The online survey tool will take approximately 15 minutes to complete.

Data collection will begin approximately on April 11th, 2020 and will be collected every 10 days thereafter for a total of 6 waves to allow for optimal monitoring.

In case of unexpected developments or new outbreak response measures implemented, the time frame between the data collections, as well as the variables of interest examined/included in the study may change. As such, this protocol should be seen as iterative and evergreen.

Overview of Variables

- Demographics
- Perceived and actual knowledge about the novel coronavirus and COVID-19 (*)
- Individual feelings of preparedness and perceived self-efficacy (*) to avoid an infection with the coronavirus
- Perceived and actual knowledge about effective preventive measures to avoid infection with the coronavirus (*)
- Uptake of preventive measures to avoid infection with COVID-19 (*)
- Risk perceptions regarding the disease (probability, susceptibility, severity) (*)
- Affective measures (feeling of closeness, novelty, threat, fear, and worry regarding the disease) (*)
- Perception of the outbreak as a media-hype
- Trust and frequency of use of regarding different information channels (*)
- Frequency of information search on COVID-19
- Trust in health authorities, government institutions, media and other relevant stakeholders (*)
- Primary source of official health information (*)
- Perceptions and acceptance of policies to control the outbreak (*)
- Panic buying behaviour
- Discriminatory behaviour
- Disinformation regarding COVID-19 (qualitative data, open text fields)
- Support for government initiatives related to the coronavirus

Randomization of answer options where suitable (*).

Flexibility and Adaptation

As the COVID-19 pandemic evolves and the epidemiological and response situation rapidly changes, the questionnaire must be continuously updated, so that the questions asked reflect the situation and provide necessary information to shape effective and appropriate outbreak response measures.

Sample

To ensure that the sample is representative of the Canadian population and to allow for analyses of/comparisons between subgroups of interests (e.g. regions, provinces, age groups, vulnerable groups), each wave will consist of 2,000 participants. Given the longitudinal design, the same participants will be interviewed at each wave; new participants will only be considered if an existing participant drops-out.

Data Collection and Analysis

Data will be collected through an approximately 15 minute web survey with adult Canadians 18 years of age and older, randomly recruited from an online panel constructed by the contracted data collection agency, a Canadian polling firm with research experience relating to health, and, specifically, the COVID-19 pandemic. This will be a non-probability sample (i.e., margin of error calculations are inappropriate).

As indicated above, data will be collected through a rolling poll with 6 waves of data collection. To the extent possible, data collection should be spread out evenly over each weekly collection period. As noted above, given the longitudinal design, the same participants should be interviewed each week; new participants should only be added to the sampling frame when an original panelist stops participating.

The sample frame will consist of 50% women and 50% men for each age group (18 to 34; 35 to 54; 55+), and for each region:

- Atlantic Canada (Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick);
- Quebec;
- Ontario;
- Manitoba/Saskatchewan/Nunavut;
- Alberta/Northwest Territories;
- British Columbia/Yukon.

Participants will be representative of the population distribution across Canada. As for any general population sample derived from a national survey, weighting final results by region, age groups, gender, and education is recommended.

The contracted data collection agency is part of both the Canadian Research Insights Council (CRIC), and the European Society for Opinion and Market Research (ESOMAR). As such, they must abide to both the CRIC Public Opinion Research Standards, as well as the ESOMAR International Code on Market, Opinion, and Social Research and Data Analytics. Both organizations make clear the ethical standards that must be followed when collecting, analysing and reporting data.

Additionally, participants will be informed of their rights under the Privacy Act, Personal Information Protection and Electronic Documents Act and Access to Information Act and the firm will ensure that those rights are protected throughout the research process. This includes: informing respondents of the purpose of the research; identifying the sponsoring department/agency or Government of Canada as a whole; that their participation is voluntary, and that the information provided will be administered according to the requirements of the Privacy Act, the Access to Information Act, and any other pertinent legislation

Tests

Analyses are integrated in a R Notebook environment. All analyses are exploratory and may change based upon requirements of the situation. The data analysis script uses means of descriptive data presentation, regression analyses and correlation analyses.

Misinformation is collected as text fields and should be screened, summarized and offered to experts and those responsible for the crisis communication (e.g. to be debunked and inserted in FAQ lists).

Only completed data sets will be considered in the analysis. Missing values will be treated as missing values and not be imputed.

Scientific Review and Validation of Tools

Due to the urgency of the need for data, and the rapidly evolving situation (i.e., requiring constant adaptations of the tools used), the protocol and questionnaire have been reviewed and validated based on an ad hoc approach. The documents were originally prepared by Professor Betsch at the University of Erfurt, Germany, and subsequently reviewed by the COSMO group (for more information, see the WHO Guidance Document). This group represents leading global experts in behavioural insights research for health and in developing and validating survey tools similar to the current. In addition, following two rounds of data collection in Germany, two scientists (Prof. Robert Böhm, University of Copenhagen, Denmark, and Britta Renner, University of Konstanz, Germany) reviewed the data and how it was presented. This review cannot be shared due to the urgency of the situation; it was completed via comments on PDF snapshots of the website where the data was presented. Lessons learned from the implementation in two rounds in Germany have led to continuous adjustments of the questionnaire.

In the Canadian context, the questionnaire will be reviewed and further adapted by an ad hoc Advisory Committee to ensure methodological soundness and appropriateness for the Canadian setting. The Committee is composed of subject matter experts, in areas related to epidemiology, behavioural science, infectious disease and/or public health.

Publication of the Study Protocol

The study protocol and adapted questionnaire will be published on the PsychArchives repository, as recommended by the WHO.

Aggregated data will be published weekly (i.e. no individual participant's data), in the form of tables and figures, following collection and analysis, on the Impact Canada website for Canadians to view.

IV. Limitations

The urgency of the situation incurs some limitations to the study, including limited opportunities for scientific review and validation, as described above.

In addition, using online panels limits the participation of certain important population groups, including the elderly (a risk group for COVID-19) and disadvantaged population groups such as migrants, people experiencing homelessness and/or poverty, and other vulnerable groups.