Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Short Communication

Public perceptions of scientific advice: toward a science savvy public culture?

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ABSTRACT

Objectives: Both the political appetite for a science-based coronavirus disease 2019 (COVID-19) policy and its acceptability to the public are little understood, at a time of sharp distrust not only of governments but also of scientists and their journals' review practices. We studied the case of France, where the independent Scientific Council on COVID-19 was appointed by President Macron on March 12, 2020.
Study design: We conducted a survey on a representative sample of the French adult population.
Methods: Our data were collected by the French Institute of Public Opinion using a self-administered online questionnaire. This was completed by a sample of 1016 people stratified to match French official census statistics for gender, age, occupation, and so on. We conducted statistical analysis using Python (Pandas—SciPy—Statsmodels) with Chi-squared and Wilcoxon rank-sum tests to control for statistical significance.
Results: Intense media coverage has given the council a very high public profile, with three respondents out of four (73%) having heard about it. Perceptions are positive but complex. French citizens expect science to be important in political decision-making. Four of five (81.5%) want political decisions, in general, to be based on scientific knowledge. But one in two (55%) says that the government has not relied enough on science and only 36% are satisfied with the government's crisis management to date. Although most feel that the council has a legitimate advisory role even in situations of uncertainty (only 15% disagree), it is not perceived as fully independent. Only 44% think that it directly represents the scientific community, and only one of three people considers it completely independent from the government (39%) and the pharmaceutical industry (36%).
Conclusions: Our study confirms that while the transparency of scientific advice is important, it alone cannot ensure public confidence in political decision-making. We suggest that efforts made today to instill a 'science-savvy' public culture—one that allows the complex articulation between scientific knowledge, uncertainty, and political decision-making to be understood and accounted for would greatly benefit evidence-based policy in future crises.

Introduction

Around the world, the high level of uncertainty caused by the global coronavirus disease 2019 (COVID-19) pandemic is putting the role of science in policymaking to the test. In many countries, governments have set up *ad hoc* independent, purpose-specific scientific panels to inform crisis management.[1] Beyond pragmatic questions such as rules of good practice for these panels, and whether the structure and recruitment procedures influence the quality of their advice,[2] most scholarly focus to date has been on citizen confidence, clarity of communication, and the transparency of scientific advice used in decisions taken by governments.[3]

But both the political appetite for a science-based COVID-19 policy and its acceptability to the public are little understood, at a time of sharp distrust not only of governments but also of scientists and their journals' review practices.[4]

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This short communication draws on one of the first study into public perceptions of the link between scientific expertise and health crisis management in France, where government action has drawn fierce criticism. From the beginning of the epidemic, the French government has emphasized the importance of evidence-based policymaking. On March 12, 2020, it appointed an independent panel, the COVID-19 Scientific Council, whose opinions are made public, in the interest of transparency.

With the help of the survey research from the French Institute of Public Opinion, we surveyed 1016 people in November 2020 using a self-administered online questionnaire. Our questions focused on public attitudes toward both expertise on COVID-19 and the Scientific Council in particular, and the sample was stratified to match French official census statistics for gender, age, occupation, and location.

Evidence-based policy: caught between high expectations and wide mistrust of government

Media coverage of the Scientific Council has given it a very high public profile, with three respondents of four (73%) having heard about it. This number is high for a body that has existed for less than a year. Perceptions of the council are positive but complex. Thus, although a third of the French population say they do not fully understand its role, 67% of those who say they understand it (43% of the total) consider the council to have been useful. French citizens have a strong expectation that science should play an important role in political decision-making. Four of five (81.5%) want political decisions, in general, to be based on science and two-thirds (68%) want scientists to be more involved in assisting political decision-makers.

However, although science *per se* is widely valued, its use by the government since the advent of the pandemic is widely criticized, reflecting a climate of strong mistrust toward political actors. One person in two (55%) considers that the government has not relied enough on science. Only 36% are satisfied with the government's actions to date. This goes hand in hand with a strong mistrust of all political structures, be it the executive or the lower and upper legislatures (36%, 33%, and 36%, respectively).

The council is perceived as having a legitimate role in giving advice to the government even in situations of uncertainty (only 15% disagree). Nevertheless, it is not perceived as fully independent. Only 44% think it is directly representative of the scientific community, and only one of three people considers it to be independent from the government (39%) or the pharmaceutical industry (36%).

The challenge of implementing evidence-based policies is undermined by a general distrust of expertise and politics. This can be seen in the fact that 46% of respondents interpret disagreements between scientists to be caused by pressure from private financial interests rather than scientific uncertainty.

Interestingly, many feel that scientists must take legal responsibility for the *consequences* of their advice. Half of the respondents (52%) feel that scientists and politicians should be jointly responsible before the law for decisions taken, whereas only one-fifth consider that only politicians are responsible (22%).

Developing public support for evidence-based policy

In principle, each party has a clear role: the Scientific Council makes recommendations, whereas the government makes decisions and assumes responsibility for them. But it has become evident to the public that not all the recommendations of the Council have been systematically followed, notably in three instances: schools were reopened in June against the council's advice; the government chose not to create a citizen liaison committee bringing together representatives of civil society despite repeated recommendations since March; and the government did not implement incentive strategies to accompany its policy of non-mandatory isolation.[5,6] Such differences between the council's advice and government action were immediately noticed and commented on, both in the mass media and on social networks. This has fed doubts regarding the evidence-based nature of political decision-making. Although science *per se* is widely valued, it suffers from being associated with political decision-makers.

It is impossible to avoid the political nature of crisis management, and scientific knowledge can and should inform political decisions in times of pandemics. But scientists and political leaders alike should be wary of two major pitfalls.

On the one hand, political leaders may be tempted to gloss over scientific uncertainty, and the political nature of many of their decisions, by presenting them as completely supported by science. On the other hand, scientists can find it difficult to keep their claims modest, and be open about the difficulties of producing evidence-based policy recommendations when confronted with a new virus.

Both pitfalls can contribute to mistrust of scientific expertise and feed anti-science populism.[7] It is especially predictable in a country where health scandals, whether proven or alleged, have multiplied over the past 20 years, with direct consequences on citizens' attitudes toward COVID-19 public health policies, such as growing 'vaccine hesitancy.'[8]

Although the independence of scientific advisers and the transparency of their advice are important, these alone cannot ensure public confidence in political decision-making, even in countries like France where experts are relatively open about the limitations of scientific knowledge and governments acknowledge some uncertainty when acting on scientific advice.

Experts and decision-makers responding to COVID-19 would do well to consider previous experience with the formalization of frameworks for expertise, such as the one proposed by the Intergovernmental Panel on Climate Change.[9] This would help to instill a 'science-savvy' public culture—one that allows the complex articulation between scientific knowledge, uncertainty, and political decision-making to be understood and accounted for—and greatly benefit evidence-based policy in future crises.

Author statements

Ethical approval

The methodology of the study was reviewed and approved by the Ethics Evaluation Committee of the French National Health and Medical Research Institute (CEEI, IRB 00003888).

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Competing interests

The authors have no conflicts of interest to declare.

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