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RESEARCH

# Incorporating Well-Being and Mental Health Research to Improve Pandemic Response

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This paper discusses the potential for well-being research to be institutionalised into emergency response in the UK. We review the short and long-run well-being impacts of covid policies and argue for a wider scope of groups such as The Scientific Advisory Group for Emergencies (SAGE). The potential form of such response could be based both on emerging multi-dimensional societal well-being frameworks and on rapid and scalable policy appraisal capacities that incorporate well-being considerations.

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## 1. Introduction

During the pandemic, infection risk, hospitalisations, and deaths formed the basis for modelling and government advice. For instance, school closures and the introduction of broader social lockdown measures were two policies used to reduce infection and mortality levels [1–2]. However, anti-contagion measures were accompanied by large societal costs including job losses, financial uncertainty, mental distress, school-disengagement, and domestic abuse [3–4]. While predictions of hospitalisations and excess deaths strongly informed government decision-making [5], less attention has been paid to how the virus and associated government responses may have impacted and may continue to impact population well-being. How such impacts should be measured and inform part of the institutional response to major emergencies such as Covid-19 is an important question that has so far been neglected, but that we aim to address here.

Specifically, we outline a strong body of research that has emerged over the course of the pandemic on immediate harms to well-being and potential long-term well-being effects. We then discuss how this evidence has not been reflected in the structure of the pandemic response, as the main advisory bodies have been predominantly focused on the physical health outcomes of disease control strategies. Further, we outline how this omission can lead to distortions in policy advice and implementation, including, but not limited to, incomplete or inadequate communication of risks, and invalidation of the experiences of wide groups of people during the course of the restrictions. This is particularly heightened by the fact that groups at high degrees of risk, such as marginalised children, may have particularly low voice in the media and in policy making processes.

The paper then examines the potential for integrating wider measures of mental health and well-being into a more holistic pandemic response. It draws from a range of literatures, in particular the development of multi-dimensional well-being indicators, the growing movement to integrate well-being metrics into policy appraisal [6], and the development of ethical frameworks in behavioural public policy. This reflects the fact that many societies are moving away from using Gross Domestic Product (GDP) as a measure of national well-being [7–8] and are moving towards citizen-driven, multi-dimensional well-being indices. A process like this offers strong potential for more holistic responses to major emergencies, including pandemics. The integration of wellbeing is therefore important both from the point of view of the ongoing pandemic response as well as more generally, in terms of responses to future pandemics and to other types of systemic risks.

We conclude by outlining the case for institutionalising well-being impacts into policy response, including the potential for multidimensional scales to inform strategy, the role of well-being measures in policy appraisal, and the use of well-being considerations in appraising the ethics of behaviourally informed risk communication strategies.

## 2. Well-Being During the Covid-19 Pandemic in the UK

The widespread disruption and worry caused by the emergence of the pandemic gave rise to concerns that the well-being of the population may be adversely affected. The early stages of the pandemic saw the rapid publication of research focused on the potential mental health and well-being effects of Covid-19 [9]. While the value of much of this

research was limited due to a reliance on cross-sectional and convenience samples, high-quality evidence from large scale, often pre-existing, longitudinal and probability-based samples was acquired and published as the pandemic progressed [10]. This survey data allowed changes in mental health from before to during the pandemic to be estimated. By integrating this evidence, a recent systematic review and meta-analysis of longitudinal studies could show that there was an increase in mental health symptoms during the initial stages of the pandemic (March/April 2020), with depressive symptoms most affected [11]. After this point (May–July 2020), the severity of mental health symptoms declined, potentially as a result of the easing of restrictions and adaptation to the stressors associated with the pandemic (e.g., continuous media coverage, fear of infection, financial uncertainty).

In the UK, this pattern was also evident, with notable declines in mental health and life satisfaction being observed after the outbreak of the pandemic. Data collected as part of the UK Household Longitudinal Study showed that an increase in mental health symptoms occurred between April and June 2020 [12]. Similarly, estimates from the UK Annual Population Survey suggested that life satisfaction declined and anxiety worsened throughout this period [13]. The declines in mental health and well-being were generally most marked for young people and women, perhaps reflecting the major social disruption experienced by both groups and the disproportionate way in which family and caregiving responsibilities fell upon women [14, 15].

Improvements in well-being occurred during the summer and autumn of 2020, as restrictions were loosened in the UK [4, 13, 16, 17]. However, emerging evidence suggests that declines in mental health and well-being began once again after the reintroduction of lockdown measures during the pandemic's second wave, in the winter of 2020/2021 [13, 16]. At this point, parents of school-aged children were most likely to experience elevated psychological distress, most probably due to the disruptive character of home-schooling coupled with existing childcare and work responsibilities.

As such, there is at least initial evidence that population well-being was related to the scale of the pandemic and to the associated anti-contagion measures in the UK – suffering as cases and deaths rose and restrictions tightened and reverting slowly to baseline as transmission levels declined and restrictions loosened. There is also initial evidence that population subgroups considered to be most affected by Covid-19 restrictions experienced the most significant harms to their well-being. However, understanding the mechanisms linking the pandemic and social lockdown measures to population well-being has proven difficult because changes in infection and mortality rates and restrictions tend to occur in tandem.

One approach that has proven somewhat informative for understanding the role of changing living conditions during the pandemic is the assessment of daily experience through time-use diaries and experience sampling methods. For example, Lades et al [18] conducted a day reconstruction study to examine time-use and positive and negative affect during the first phase of covid restrictions in Ireland in April 2020. This study showed that home-schooling children, social media use, and staying informed about Covid-19 during the pandemic were associated with adverse wellbeing effects, whereas spending time outdoors and in nature predicted well-being benefits. Similarly, a study of the everyday experiences of Australian adults during the pandemic showed that greater screen time was associated with reduced well-being, whereas time spent outdoors was associated with raised emotional well-being [19].

By probing the daily activities, interactions, movements, and experiences of people, experience sampling and daily diary surveys have the potential to highlight the channels through which the pandemic affected and may continue to affect psychological well-being. The pandemic has also seen the implementation of a pioneering 'continuous tracking' approach to gathering data on mental health and well-being that capitalises on the strengths of real-time daily and experience surveys and the representativeness of national surveys. This approach is illustrated by the Understanding America Study [20] where participants drawn from a subset of a nationally representative internet-panel complete a tracking survey on a specific day at regular intervals, thus providing a representative picture of national trends in key well-being, behavioural, and attitudinal metrics for each day of the pandemic [12]. The German COMPASS survey took a similar approach, collecting information on well-being, behaviour, and Covid-19 related variables from approximately 300 participants every day throughout the pandemic [21].

These large-scale, high frequency assessments have been vital in tracking and demonstrating well-being trajectories during the pandemic. For instance, there was a marked rise in distress during the initial phase of the pandemic in the United States [22, 23] that was followed by a decline in subsequent months which could be attributed to a return to everyday activities and reduction in the perceived health and economic risks posed by the pandemic [22]. Tracking surveys can also play a crucial part in understanding the potential well-being impact of Covid-19 policies and restrictions across time and regions, and the evolution of the long-term well-being consequences of Covid-19 including unemployment, poverty, and financial insecurity [24].

### 3. Lasting Well-Being Effects of Covid

At the population-level, the general effects of living through the pandemic may dissipate once vaccination is widespread and immediate stressors like continuous Covid-related media coverage and spending time homeschooling or in social isolation are removed. However, harms to well-being may persist for specific groups, such as immunocompromised people, those with extended symptoms of Covid [25], healthcare staff who have witnessed mortality among patients and colleagues [26], those at risk of domestic abuse [13], and children whose specialised educational needs have been neglected. These groups may represent part of the coronavirus' negative longer-term legacy [27] and planning to address the ongoing needs of the groups most impacted by the pandemic has begun as evidenced by the

*COVID-19 Mental Health and Wellbeing Recovery Action Plan* [28]. This report highlights policy actions that are planned to support such at-risk groups through investment within the health and education systems and beyond.

In addition, as acknowledged within the action plan, the longer-term economic repercussions of the pandemic require consideration. For instance, those who go on to experience unemployment and underemployment following the pandemic may suffer financial and well-being ‘scarring’ as a result of financial insecurity and weak attachment to the labour force following the pandemic [29–33]. Such well-being considerations may be particularly useful for understanding the longer-term dynamic impacts of Covid and the effects of different types of Covid policy response. For example, because longer-term employment displacement has deeper scarring effects than short-term displacement, policies that prioritise macroeconomic recovery and a return to work may attenuate the scale of these effects. Furthermore, it is likely that younger people can recover well-being from short-run impacts on friendships and social engagement [34]. But far more information is needed on what will happen to longer-run well-being in the case that restrictions become an embedded part of response to emerging variants and new waves of the pandemic.

#### 4. Institutionalising Well-Being Approaches to Emergencies

One feature of Covid-19 is that the economic and well-being impact has been disproportionately borne by younger people who have experienced significant labour market displacement and significant disruption to social activities [10, 30]. However, they have been poorly represented in the governmental decision-making focused on Covid responses, with their views and experiences likely undercounted and underweighted [35]. While it is probable that those who have the expertise necessary to make recommendations to government do not fall into this category – or the many other categories that are under-represented here – it clearly creates the potential for the experiences and preferences of younger people and other less represented groups to be neglected in the decision-making process.

The potential for elements of young people’s well-being to be trivialised as a result of this is important to reflect on. For example, the need to develop social relationships in early adulthood and to find social and sexual partners and to form life-long relationships is widely recognised in many developmental frameworks as a key aspect of early adulthood [36]. Framing social activity as non-essential compared to the wider goal of reducing infection risk and preserving life diminishes, and even potentially invalidates, this important aspect of human development and experience. There are many other aspects of human social engagement and support that were neglected in this way throughout the period [37]. In some sense this is ironic, given that a huge amount of literature in recent decades has sought to counter the over-focus on economic outcomes by pointing to the importance of robust social support as underpinning well-being.

Many of the major risks faced by society in the 21st century, such as global warming and population growth, are currently being managed by people with very defined, and in some ways limited, expertise, despite the responses and consequences being spread across the whole of society [38].

In a recent paper, the authors proposed a well-being commission to evaluate the potential population well-being impacts of major policy projects, including pandemic responses [39]. Such a commission help resolve such limitations within government by ensuring that its decision-making is informed by a wide range of disciplinary expertise and by the life experiences and evaluations of citizens from a range of backgrounds. Already, Britain has a range of infrastructure that would facilitate the development of this type of institutional capacity, such as regular well-being measurement [40] and UK Research and Innovation (UKRI)-funded centres that include substantial capacity for evaluating well-being impacts as well as a history of working across government departments and developing ideas in this area [6].

The integration of behavioural and social scientists into the Covid policy response has been repeatedly and broadly discussed, and to some degree, implemented by government [41–43]. In the UK, the role of the Scientific Pandemic Insights Group on Behaviours (SPI-B) was to provide “*behavioural science advice aimed at anticipating and helping people adhere to interventions that are recommended by medical or epidemiological experts*” [44]. While SPI-B contained members that had written on well-being related topics, such as psychosocial resilience, the primary function of this group was limited to supporting the monitoring of and adherence to behaviours, such as social distancing, that sought to control the pandemic. Their remit did not allow for a holistic assessment of well-being impacts of policies. For example, it is difficult to imagine how a group like SPI-B could, for example, provide well-being impact assessment of investments in mitigating the long-run psychosocial costs of school disruption or of being exposed to bullying or domestic violence.

A report by the Institute for Government illustrates the decision-making structure of the UK government’s pandemic response during the first six months of the pandemic [45]. While evolving over time, the basic structure of a core scientific advisory team complemented by a behavioural advisory group was maintained. Developing this structure to allow for rapid assessments of medium to long-run psychosocial impacts is something that should be considered as a matter of urgency, both in the context of the ongoing pandemic response and in relation to preparedness for future emergency situations. This is further emphasised in evidence submitted by the Nuffield Council on Bioethics and the Institute of Development Studies, which discussed the importance of social science perspectives in informing decision-making. There, the latter stated that SAGE had “*minimal social science representation and is largely confined to narrow behavioural science perspectives*” [46] which compared “*unfavourably*” [46] with other European countries. The Institute also suggested that more expert input was required from “*anthropology, geography, sociology, economics, history and related fields*” [46].

The major point of our current paper is not that the research community was not providing research on well-being effects – and indeed, it is clear that there is now a large literature in this area both within the context of the UK and

internationally. Instead, the more pressing point is that there is not an obvious channel through which this research could have a meaningful impact on ongoing emergency responses.

The institutionalisation of well-being measurement into emergency responses could potentially fulfill a number of functions:

1. Incorporate a wider diversity of expertise and views: Centering the response around purely medical areas and the default metrics of infections, hospitalisations, and deaths [47] leads to a very homogenous group of advisers and form of input into core policy decisions. Multi-dimensional measurement would incorporate a far wider set of perspectives and provide a far greater range of channels.
2. A framework for evaluating the societal impact of the pandemic: A well-being index could capture the impact of a wide-range of factors during the pandemic [27] including infection-related worries, the impact of adverse economic circumstances such as unemployment and reduced income, and the effects of social isolation and psychological distress. Such well-being estimates could be used to inform policy decisions by providing a metric for weighing up potential decision-impacts across a range of spheres using population-based data representing a diverse set of individuals.
3. Procedural fairness: The integration of information about people's well-being may be a useful input to policy, independently of whether it changes the precise policy recommendations. People have concerns for procedural fairness and may wish to have their experiences reflected in policy deliberations. Not including such information may in itself be disrespectful and suggestive that such experiences are not deemed relevant from the view of official policymaking.
4. Dampening international conflict and Covid-metric nationalism: The presentation of stark international comparison statistics and case numbers on a nightly basis without context provides conditions for international conflict and status comparison. It also creates incentives for governments to maximise performance on a single index or even to suppress information.

## 5. Multidimensional Well-Being Indices

One potential way to improve the process of responding to emergencies would be to draw from pre-existing multi-dimensional measures of well-being. The OECD Better Life Index, for example, contains 11 different dimensions of well-being, encompassing income/wealth, housing, job quality, skills, environmental quality, subjective well-being, safety, work-life balance, social connections, and civil engagement [48]. While such measures are already intended as top-level indicators of overall societal well-being, they provide a basis for developing more in-depth measures and evaluation structures. Anand [49] argues for the incorporation of such indices to assess the impact of Covid-19 on capabilities to enable priority setting in policymaking. The development and integration of multidimensional well-being scales into emergency response would enable a more holistic approach to the assessment of Covid outcomes.

However, the use of multi-dimensional indices such as the OECD framework potentially also comes at the cost of conceptual clarity and speed of aggregation. In the context of an emergency situation, moving from eleven broadly defined dimensions down to an actionable set of policy actions is not particularly straightforward. Similarly, the frameworks themselves do not provide off-the-shelf procedures for ranking policy actions in a clearly quantifiable way. They should be seen as ways of ensuring that key considerations of societal welfare gain a share of attention in the development of responses and in the formulation of decision-making structures rather than in and of themselves providing clear-cut solutions.

## 6. Well-being and Policy Appraisal

Another aspect of Covid decision-making that could potentially benefit from a well-being approach is the assessment of particular policies at different stages of the pandemic. Many policies aimed at reducing infection risk have impacts on a wider set of factors that influence people's well-being, and the benefits they provide in one arena could be usefully set against the harms they do elsewhere. For instance, decisions to restrict visits to people in nursing homes, mandates for face coverings in educational settings, and restrictions on social visits, all potentially have impacts on well-being in a variety of ways.

Furthermore, such impacts may be subtle and hard to measure in traditional well-being formats. For example, the psychic cost of not being able to visit a dying loved one may not be measurable using any standard measure of life satisfaction or episodic well-being but may occupy a particularly meaningful loss for people. It is important that there is a place to consider determinants such as this.

Another potential input into emergency response would be to identify overall impacts on life satisfaction using an integrated index of well-being. For instance, the concept of WELLBYs, or well-being years, was developed to provide a scaled unit to examine different policies from a cost-benefit perspective [50]. Clark et al [27]. employ the WELLBY concept to examine the impacts of a range of lock-down scenarios in response to the first wave of Covid in the UK. A limitation of this approach is the extent of uncertainty surrounding the infection (virus?) responses to different types of non-pharmaceutical interventions (NPIs). However, it does serve, within assumptions around NPI impacts, to take into account important aspects of Covid response such as the psychological impacts of Covid on unemployment, as well as a range of other psychologically significant factors.



## 7. Well-Being and Ethics of Behavioural Change Strategies

A focus on well-being is also informative for the ethics of behavioural change strategies. In some sense, people's well-being and adherence to Covid restrictions are mutually supportive e.g., recent research shows that happier people are more likely to comply with Covid restrictions [51]. However, there are clearly trade-offs in this domain. As case numbers come down, people will relax and exhibit less fear of the virus both psychologically and behaviourally. As discussed above, well-being improved dramatically during the low period of infection and loosening of restrictions in summer and autumn of 2020. However, communications that emphasise and make salient the degree of personal risk during such periods could potentially reduce the risk of further outbreaks, while also harming well-being. More generally, regular targeting of Covid information in highly salient and emotive ways could potentially encourage people to adhere to regulations at the expense of their daily well-being and experience.

Many bodies, including the WHO [52] and ECDC, advise people to limit the amount of time they spend consuming information in the media about Covid. In our own recent study, spending time reading about Covid is one of the most psychologically unpleasant daily activities people regularly undertake [18]. In that case, there is an interesting ethical tradeoff surrounding the potential behavioural adherence effects of regular press briefings and the discussion of the threat it poses and the experiential effect that this has upon the population.

In many frameworks, one explicit goal of risk communication is to help people manage anxiety and set risk in proportion, whereas a policy focused solely on mortality reduction may involve explicitly attempting to get people to focus on Covid risk at the expense of other aspects of their well-being. As said above, it is also possible that in actuality there is not a trade-off. If people become desensitised to regular, alarming broadcasts about mortality then their efficacy as a behavioural change tool will be diminished [53]. Furthermore, it is highly possible that those engaging most with these messages are both already compliant and highly anxious about Covid anyway.

## 8. Conclusion

The UK government recently released a report on integrating mental health into pandemic responses [54]. It was very welcome but came one year after Covid was a fully live policy issue. It is urgent to rebuild the discussion of Covid around multi-dimensional measures of well-being that situate health and mortality risk among the factors that allow for quality of life across the life cycle. A well-being focus can inform the development of structures that advise the government on its pandemic response and its wider emergency response, ensuring that the government's focus is less myopic. It can also potentially be informative with regard to ongoing communication efforts to influence people's behaviour over the course of the next stages of the current pandemic response in the UK. More broadly, moving to a well-being discourse might serve to better recognise the discrete experiences of different groups of people during pandemic circumstances, and to provide the government with the means to tailor or adjust its response to reflect the different needs and struggles of these groups.

The integration of well-being considerations into emergency preparedness and response also comes with a number of questions, while the extent to which the public trust and value inputs from social and behavioural science relative to STEM is still not apparent. In a recent paper Sanders et al. [55], find that the media discourse around the role of behavioural science in the UK's Covid response was largely positive, but highly controversial with regard to the specific inputs that drove the central response. Understanding trust in social science in high-stakes environments is thus a high priority for capacity building in this area, in particular understanding both public and policy-makers perception of the role of social and behavioural scientists in expert advisory groups.

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## Competing Interests

The authors have no competing interests to declare.

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