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BRIEFING

Behavioural science investment needed to mitigate long-term health impacts of Covid-19

During the Covid-19 pandemic, media headlines and emerging evidence have reported shifts in population behaviours such as substance use, food and alcohol consumption, physical activity, and sedentary behaviour. Engagement with some preventative health services has also declined. This policy brief highlights potential long-term impacts of Covid-19 on health behaviour and chronic disease prevention. Recommendations for policy prioritisation are provided to help mitigate downstream consequences and prevent widening health and social inequalities.

OVERVIEW

Covid-19, for some, has led to changes in health behaviours, such as higher alcohol use, lower physical activity, increased sitting time, unhealthy food consumption, higher substance use, and reduced use of health services.

Subsequent downstream physical and mental health consequences are anticipated, with wider social and economic implications.

Policymakers should set direction for supporting changes to long-term health behaviours through formal commissions and refreshed disease prevention targets.

Investment in behavioural scientists, and specifically health psychologists, to help design, deliver, evaluate, and adopt interventions (at individual, community, population, and system level) will help to minimise adverse outcomes¹.

Behaviour change interventions and health services should meet the needs of high-risk groups to reduce inequalities in burden.

BACKGROUND

The Covid-19 pandemic has led to substantial changes in population behaviour and disease outcomes. Around 10 per cent of people with mild or moderate Covid-19 experience long-term health effects (Long Covid). Although some outcomes are improving due to better understanding of SARS-CoV-2 and clinical advancements, a significant proportion of people with severe Covid-19 require hospitalisation and experience substantially impaired quality of life².

Prior to the pandemic, unhealthy behaviours were estimated to account for 40 per cent of the determinants of premature death. This headline statistic was central to key UK policy documents through 2019, including the Department of Health and Social Care Prevention Green Paper, NHS Long-Term Plan, and Childhood Obesity Plan. Behaviours such as stopping smoking, attending cancer screenings, healthy eating, and physical activity were highlighted as policy priorities given their role in reducing the risk of chronic diseases such as cancer, type-2 diabetes, heart disease; and related issues such as obesity.

Since the onset of Covid-19, international health organisations and experts have expressed concern that population behaviours and engagement with health services has worsened. With large segments of the population under prolonged conditions of self-isolation, quarantine, and physical distancing, modification to some routine health behaviours has been inevitable. Changes to socioeconomic status through reduced income and job loss, as well as increased caring responsibilities (particularly for women), have also posed significant barriers to engaging with healthy behaviours. Poor mental health outcomes, such as increased reports of depression and anxiety, may aggravate or inhibit certain health behaviours.

The UK Government issued an official report in November 2020 recognising the high likelihood of long-term systemic health and economic effects, far beyond direct deaths observed from Covid-19³. Whilst the long-term effects are unknown, it is anticipated that the systemic effects will be profound with the most disadvantaged groups in the UK population hit the hardest.

HEALTH BEHAVIOURS FOR LONG-TERM COVID-19 POLICY PRIORITISATION

Refreshed policy priorities and interventions which reflect ongoing shifts in population health behaviours and disengagement with key services are urgently needed. These should complement and build on existing initiatives such as the Better Health and Every Mind Matters campaigns^{4,5}. There is growing concern that not enough people will receive the Covid-19 vaccine in certain high-risk groups, so interventions that promote and enable vaccination uptake in high-risk communities also warrant policy focus.

Long-term behaviours for policy prioritisation are summarised below:

Covid-19 vaccination uptake⁶

Eating behaviour⁷

Physical activity⁸

Sedentary behaviour (e.g. sitting)⁹

Alcohol consumption¹⁰

Substance use

Tobacco smoking¹¹Sleep hygiene¹²

Health service use (e.g. cancer screening, GP attendance)

COVID-19 VACCINATION UPTAKE

Since the vaccine was rolled out across England in priority populations, preliminary data has shown lower vaccination rates among ethnic minority groups (Black or Black British displaying lowest rates), people living in areas of higher deprivation, and those with severe mental illness or learning disabilities¹³. In the general population, younger people (particularly younger females) have also reported greater vaccination hesitancy¹⁴. General mistrust in vaccines, beliefs of lower collective importance and lower vaccine effectiveness, and concerns about potential side effects and the speed of vaccine development have been listed as key barriers to vaccine uptake^{15,16}.

EATING BEHAVIOUR AND DIET

Data from a study of 22,374 UK adults found that one third reported changes to quantities of food consumed through the first lockdown period. Some of the population trended towards persistently eating more, whilst others reported eating less (concerningly, particularly those who were already underweight)¹⁷. Food choices may also have shifted, with one third of people eating less healthily than usual¹⁸. One study found 56 per cent reported snacking more frequently¹⁹.

PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR

An online UK survey of 9,190 adults found that a quarter reported lower levels of physical activity since Covid-19²⁰. Vulnerable populations reported doing around half a day less of 30 mins moderate-to-vigorous physical activity each week through the first lockdown period²¹. Another UK survey found that 57 per cent had either maintained or increased their physical activity during lockdown. However only a third met physical activity guidelines²². Sedentary behaviour, such as prolonged periods of sitting, has also risen, possibly due to government mandates to stay at home²³.

ALCOHOL CONSUMPTION

National surveys have indicated that one third (31 per cent) of adults reported drinking more alcohol through Covid-19 than normal²⁴. Around 24 per cent of individuals with pre-existing alcohol disorders, at high risk of relapse, reported increasing their alcohol intake²⁵.

SUBSTANCE USE

Although data is limited, preliminary reports have suggested increased rates of drug use for substances such as cannabis, prescription benzodiazepines, and prescription opioids. Also, higher relapse rates have been observed for those in recovery from addiction²⁶.

TOBACCO SMOKING

In contrast to other behaviours, emerging evidence has suggested that tobacco quit rates and attempted quit rates have increased since the pandemic. The charity Action on Smoking and Health reported that over one million people had stopped smoking by July 2020, and 440,000 had attempted to quit²⁷. This suggests that Covid-19 may be a ‘teachable moment’ for promoting tobacco control policies and smoking cessation services.

SLEEP HYGIENE

Increased prevalence of sleep disorders through Covid-19 has been highlighted across different countries²⁸. The digital application company Fitbit has reported changes to global sleeping patterns, with people going to bed later and sleeping for longer²⁹. Poor quality sleep has been associated with the occurrence of adverse events through the pandemic. Adverse events have included, for example, illness with Covid-19, financial difficulty, loss of paid work, problems sourcing medicine, difficulties with accessing food, and perceived threats to personal safety³⁰.

PREVENTATIVE HEALTH SERVICES AND HELP-SEEKING

Preventative health services, such as cancer screening, may have seen declines in attendance and delays in help-seeking for symptoms^{31,32}. There have also been reductions in patient engagement across general health services, such as visits to Accidents and Emergency³³. Some reasons reported for non-attendance include fear of Covid-19 infection, not wanting to burden the health system, and practical barriers^{34,35}.

LONGER-TERM CONSEQUENCES AND WIDENING HEALTH AND SOCIAL INEQUALITIES

Poor health behaviours and disengagement with health services are anticipated to contribute to subsequent downstream physical and mental health consequences, carrying wider social and economic implications³. The Covid-19 pandemic is disproportionately burdening low socioeconomic and black and minority ethnic groups^{36,37}, as well as women with caring responsibilities³⁸. As has been highlighted in Government reports and the recent Covid-19 Marmot Review (as part of the Health Foundation Covid-19 Impact Inquiry), there is concern around widening health and social inequalities. Several Covid-19 and wider research studies have already shown that socioeconomic status, ethnicity, gender, age, and education are often predictive of poorer health behaviours and health-related outcomes. In addition, people in these groups often display the highest risk of SARS-CoV-2 infection, hospitalisation, and death from Covid-19³⁹. The combined effects of worsening behavioural outcomes paired with higher risk of non-communicable disease and severe Covid-19 are likely to accentuate existing inequalities with long-lasting systemic effects.

Although it is not possible to forecast the precise indirect impacts of Covid-19 (like worsening health behaviours) on the economy, the UK Government anticipates major long-term negative financial ramifications³. Emphasis has been placed on developing and implementing interventions to support health promotion in individuals, communities, populations, and systems.

BEHAVIOURAL SCIENTISTS IN THE COVID-19 RESPONSE

Behavioural scientists are multidisciplinary professionals that include health psychologists, who have been instrumental in navigating mitigation strategies for SARS-CoV-2 transmission. They have helped to identify effective and cost-effective Covid-19 strategies, and the groups for whom interventions are effective in terms of key equality and diversity issues⁴⁰.

What is behavioural science?

Behavioural science is an umbrella term for a selection of disciplines (such as health psychology) that study human behaviour. Behavioural scientists often aim to understand behaviours related to health and what can predict and change behaviour in individuals, communities, populations, and systems. Integrating behavioural science into public policy and practice can improve health outcomes, reduce inequalities, and promote sustainable health and social care systems^{41,42}.

CONCLUSION

Long-term disease prevention strategies should be prioritised now that most of the UK have been living under policy restrictions for a prolonged period, and the Covid-19 vaccine is rolling out. Evidence-based interventions which support the uptake of healthy behaviours and promote engagement with health services should be invested in by public policymakers. This will offset long-term indirect damage caused by the pandemic. Behavioural science and health psychology should be central in informing behaviour change strategies and health policy.

POLICY AND PRACTICE RECOMMENDATIONS

Key recommendations include:

- 1 Policymakers should refresh disease prevention targets with a psychologically-informed lens, to account for the impact of Covid-19 on long-term health behaviours and health service use.
- 2 Behavioural scientists, and in particular health psychologists with expertise in behaviour change, should be embedded in policy teams and health services to inform intervention design, delivery, evaluation, and adoption.
- 3 Health services and behaviour change interventions should be developed to meet the needs of high-risk and underserved groups, to reduce further inequality.
- 4 All those with a remit of human behaviour change should receive suitable training to enable a psychologically-informed workforce, building capacity in behavioural science.

The British Psychological Society Covid-19 Behavioural Science and Disease Prevention Taskforce have produced a series of guidance documents to support the use of behavioural science and health psychology during the pandemic and beyond. Please find below guidance and recommendations to support policy makers and public health practitioners.

Behavioural guidance for reducing SARS-CoV-2 transmission:

- [Optimising policies & communication](#)
- [Optimising vaccine uptake for Covid-19](#)
- [Post-Covid-19 vaccine behaviour guidance](#)
- [Encouraging self-isolation guidance](#)
- [Encouraging hand hygiene guidance](#)
- [The psychology of handwashing](#)
- [Digital contact tracing briefing](#)
- [Guidance on public health messaging](#)

Behavioural guidance for longer-term health behaviours impacted by Covid-19:

- [Alcohol consumption guidance](#)
- [Eating behaviour guidance](#)
- [Physical activity guidance](#)
- [Sedentary behaviour guidance](#)
- [Sleep hygiene guidance](#)
- [Stopping smoking guidance](#)

AUTHORS

On behalf of the British Psychological Society Covid-19 Behavioural Science and Disease Prevention Taskforce (named below) and the Division of Health Psychology Committee 2020–2021.

Dr Emily McBride, (BPS Division of Health Psychology Policy Lead), Senior Research Fellow, University College London

Professor Jo Hart, Professor of Health Psychology, University of Manchester

Professor Daryl O'Connor, Professor of Psychology, University of Leeds

Dr Gillian Shorter, Lecturer in Psychology, Queens University Belfast

Professor Madelynne A. Arden, Professor of Health Psychology, Sheffield Hallam University

Professor Christopher J. Armitage, Professor of Health Psychology, University of Manchester

Dr Tracy Epton, Lecturer in Health Psychology, University of Manchester

Professor Lucie Byrne-Davis, Professor of Health Psychology, University of Manchester

Dr Paul Chadwick, Associate Professor, Clinical Psychologist, University College London

Professor John Drury, Professor of Social Psychology, University of Sussex

Dr Atiya Kamal, Senior Lecturer in Health Psychology, Birmingham City University

Mrs Lesley Lewis, Health Practitioner, Public Health Wales

Professor Vivien Swanson, Professor of Psychology, University of Stirling

Dr Ellie Whittaker, Health Improvement Officer, North Yorkshire County Council

Professor Angel Chater, (BPS Division of Health Psychology Chair and Covid-19 Behavioural Science and Disease Prevention Taskforce Lead), Professor of Health Psychology and Behaviour Change, University of Bedfordshire

REFERENCES

- 1 Chater, A. & Hart, J. (2019). Building capacity in behavioural science and public health using the Stage 2 training route: Ideas for the development of a funded model. *Behavioural Science and Public Health* 1(1), 40–42. Available from: www.bsphn.org.uk/_data/site/54/pg/364/BSPHNWinter-Spring-2019-volume-3-issue-1.pdf
- 2 Dennis, J.M., McGovern, A.P., Vollmer, S.J. & Mateen, B.A. (2021). Improving survival of critical care patients with Coronavirus Disease 2019 in England: A national cohort study, March to June 2020. *Critical Care Medicine*, 49(2), 209–214.
- 3 UK Government. (2020). Analysis of the health, economic and social effects of Covid-19 and the approach to tiering.
- 4 Public Health England. Better Health. Available from: <https://campaignresources.phe.gov.uk/resources/campaigns/109-better-health>.
- 5 Public Health England. Every Mind Matters. Available from: <https://campaignresources.phe.gov.uk/resources/campaigns/82-every-mind-matters/resources>.
- 6 Epton, T., Lawes-Wickwar S., Ghio D., et al. (2020). *Optimising vaccination uptake for Covid-19*. Leicester: British Psychological Society.
- 7 Whittaker, E., Howlett, N., Abdin, S. et al. (2020). *Covid-19 Public health road map: Eating behaviour*. Leicester: British Psychological Society.
- 8 Chater, A., Abdin, S., Dryden, J. et al. (2020). *Covid-19 Public health road map: Physical activity*. Leicester: British Psychological Society.
- 9 Chater, A., Abdin, S., Shorter, G. et al. (2020). *Covid-19 Public health road map: Sedentary behaviour*. Leicester: British Psychological Society.
- 10 Shorter, G., Knowles, N., Abdin, S. et al. (2020). *Covid-19 Public health road map: Alcohol consumption*. Leicester: British Psychological Society.
- 11 Knowles, N., Chater, A., Lewis, L. et al. (2020). *Covid-19 Public health road map: Stopping smoking*. Leicester: British Psychological Society.
- 12 Jenkinson, E., Ellis, J., Chater, A. et al. (2020). *Covid-19 Public health road map: Sleep hygiene*. Leicester: British Psychological Society.
- 13 MacKenna, B., Curtis, H.J., Morton, C.E. et al. (2021). Trends, regional variation, and clinical characteristics of Covid-19 vaccine recipients: A retrospective cohort study in 23.4 million patients using OpenSAFELY. *medRxiv*. 2021.01.25. doi:21250356.
- 14 Office for National Statistics. Coronavirus (Covid-19) latest insights 2021. Available from: www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19/latestinsights#vaccinations.
- 15 Freeman, D., Loe, B.S., Chadwick, A. et al. (2020). Covid-19 vaccine hesitancy in the UK: The Oxford coronavirus explanations, attitudes, and narratives survey (Oceans) II. *Psychological Medicine*, 1–15.
- 16 Paul, E., Steptoe, A. & Fancourt, D. (2020). Attitudes towards vaccines and intention to vaccinate against Covid-19: Implications for public health communications. *The Lancet Regional Health - Europe*.
- 17 Herle, M., Smith, A.D., Bu, F., Steptoe, A. & Fancourt, D. (2021). Trajectories of eating behavior during Covid-19 lockdown: Longitudinal analyses of 22,374 adults. *Clinical Nutrition ESPEN*, 42, 158–165.
- 18 McAtamney, K., Mantzios, M., Egan, H. & Wallis, D.J. Emotional eating during Covid-19 in the United Kingdom: Exploring the roles of alexithymia and emotion dysregulation. *Appetite*, 161.
- 19 Robinson, E., Boyland, E., Chisholm, A. et al. (2021). Obesity, eating behavior and physical activity during Covid-19 lockdown: A study of UK adults. *Appetite*, 156.
- 20 Rogers, N.T., Waterlow, N.R., Brindle, H. et al. (2020). Behavioral change towards reduced intensity physical activity is disproportionately prevalent among adults with serious health issues or self-perception of high risk during the UK COVID-19 Lockdown. *Frontiers in Public Health*.
- 21 Naughton, F., Ward, E., Khondoker, M. et al. (2021). Health behaviour change during the UK COVID-19 lockdown: Findings from the first wave of the C-19 health behaviour and well-being daily tracker study. *British Journal of Health Psychology*, 26(2), 624–643.
- 22 Spence, J.C., Rhodes, R.E., McCurdy, A. et al. (2021). Determinants of physical activity among adults in the United Kingdom during the COVID-19 pandemic: The DUK-COVID study. *British Journal of Health Psychology*, 26, 588–605.
- 23 Wedig, I.J., Duelle, T.A. & Elmer, S.J. (2020). Infographic. Stay physically active during Covid-19 with exercise as medicine. *British Journal of Sports Medicine*, 55(6), 346–347. doi: 10.1136/bjsports-2020-103282.
- 24 King's College London. (2020). *Nearly a third of UK public drinking more alcohol than usual during the pandemic*. Available from: www.kcl.ac.uk/news/nearly-a-third-of-uk-public-drinking-more-alcohol-than-usual-during-the-pandemic.
- 25 Kim, J.U., Majid, A., Judge, R. et al. (2020). Effect of Covid-19 lockdown on alcohol consumption in patients with pre-existing alcohol use disorder. *The Lancet Gastroenterology & Hepatology*, 5(10), 886–887.
- 26 Society for the Study of Addiction.(2020). How is the Covid-19 pandemic changing our use of illegal drugs? An overview of ongoing research. Available from: www.addiction-ssa.org/how-is-the-covid-19-pandemic-changing-our-use-of-illegal-drugs-an-overview-of-ongoing-research.
- 27 Action on Smoking and Health.(2020). A million people have stopped smoking since the COVID pandemic hit Britain. Available from: <https://ash.org.uk/media-and-news/press-releases-media-and-news/pandemicmillion>.
- 28 Partinen M. (2021). Sleep research in 2020: Covid-19 related sleep disorders. *The Lancet Neurology*, 20(1), 15–17.
- 29 Fitbit. 2020. Available from: <https://blog.fitbit.com/covid-19-sleep-patterns>.
- 30 Wright, L., Steptoe, A. & Fancourt, D. (2020). Are adversities and worries during the Covid-19 pandemic related to sleep quality? Longitudinal analyses of 45,000 UK adults. *medRxiv*. doi: 10.1101/2020.06.02.20120311.
- 31 Jones, D., Neal, R.D., Duffy, S.R.G. et al. (2020). Impact of the Covid-19 pandemic on the symptomatic diagnosis of cancer: The view from primary care. *Lancet Oncology*, 21(6), 748–750.
- 32 Rees, C.J., Rutter, M.D., Sharp, L. et al. et al. (2020). Covid-19 as a barrier to attending for gastrointestinal endoscopy: Weighing up the risks. *The Lancet Gastroenterology & Hepatology*, 5(11), 960–962.
- 33 Thornton, J. (2020). Covid-19: A&E visits in England fall by 25% in week after lockdown. *BMJ*. 2020;369:m1401.
- 34 NHS England. (2020). Help us help you: NHS urges public to get care when they need it. Available from: www.england.nhs.uk/2020/04/help-us-help-you-nhs-urges-public-to-get-care-when-they-need-it.
- 35 Sanger, K. (2020, 3 September). Impact of COVID-19 on cervical screening [Blog post]. Jo's Cervical Cancer Trust. Available from: www.jostrust.org.uk/about-us/news-and-blog/blog/impact-covid-19-cervical-screening.
- 36 Chadeau-Hyam, M., Bodinier, B., Elliott, J. et al. (2020). Risk factors for positive and negative Covid-19 tests: A cautious and in-depth analysis of UK biobank data. *International Journal of Epidemiology*, 49(5), 1454–1467.

- ³⁷ Raisi-Estabragh, Z., McCracken, C., Bethell, M.S. et al. (2020). Greater risk of severe Covid-19 in Black, Asian and Minority Ethnic populations is not explained by cardiometabolic, socioeconomic or behavioural factors, or by 25(OH)-vitamin D status: Study of 1326 cases from the UK Biobank. *Journal of Public Health*, 42(3), 451–460.
- ³⁸ Power, K. (2020). The Covid-19 pandemic has increased the care burden of women and families. *Sustainability: Science, Practice and Policy*, 16(1), 67–73.
- ³⁹ Marmot, M., Allen, J., Goldbatt, P. et al. (2020). *Build Back Fairer: The COVID-19 Marmot Review*. The Health Foundation. Available from: www.health.org.uk/publications/build-back-fairer-the-covid-19-marmot-review.
- ⁴⁰ UK Government. (2020). *Independent Scientific Pandemic Insights Group on Behaviours (SPI-B)*. Available from: www.gov.uk/government/groups/independent-scientific-pandemic-influenza-group-on-behaviours-spi-b.
- ⁴¹ Chater, A., Whittaker, E., Lewis, L. et al. (2020). Health psychology, behavioural science, and Covid-19 disease prevention. *Health Psychology Update*, 29 (Special Issue), 3–10.
- ⁴² Public Health England. (2018). *Improving people's health: Applying behavioural and social sciences to improve population health and wellbeing in England*. London: Public Health England.



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St Andrews House
48 Princess Road East
Leicester LE1 7DR, UK

☎ 0116 254 9568 🌐 www.bps.org.uk ✉ info@bps.org.uk