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Communicating Public Health: Conversations about the COVID- 19 Pandemic

Report 4 – Discussions about mental and physical health among social media users during the pandemic

Steve Ginnis, Sylvie Hobden, Tirtha Medappa and Freddie Gregory



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Contents

| | | |
|----------|---|-----------|
| 1 | Foreword | 4 |
| 2 | Introduction and key findings | 5 |
| 2.1 | Background and objectives | 5 |
| 2.2 | Overview of approach | 5 |
| 2.3 | Structure of the report | 6 |
| 2.4 | Acknowledgements | 6 |
| 2.5 | Key findings | 6 |
| 3 | Methodology | 9 |
| 3.2 | Sources of conversation | 10 |
| 4 | Overview of key themes in discussion | 12 |
| 4.1 | Introduction to topic model | 12 |
| 4.2 | Topic model overview | 12 |
| 4.3 | Trends over time | 16 |
| 4.4 | Conclusion | 17 |
| 5 | Experience of mental health | 19 |
| 5.1 | Theme 1: discussion of feelings during the pandemic | 20 |
| 5.2 | Theme 2: life under lockdown | 23 |
| 5.3 | Theme 3: Help and support | 27 |
| 5.4 | Theme 4: Impact of government response | 31 |
| 5.5 | Conclusion | 35 |
| 6 | Experience of physical health | 36 |
| 6.1 | Initial analysis from topic model | 36 |
| 6.2 | Overview of additional analysis | 37 |
| 6.3 | Review of key topics | 38 |
| 6.4 | Conclusion | 42 |
| | Appendix | 43 |

1 Foreword

We are living in profoundly uncertain times. SARS-COV-2 is a novel Coronavirus – a dangerous pathogen that scientists and health professionals are only now beginning to understand, as it approaches the end of its first year in widespread circulation. Its effects have been profound and broad ranging. None of us can be certain whether or when the ongoing public health emergency, with its equally serious implications for the economy, might be alleviated – let alone, come to an end. For now, we are having to learn to ‘live with the Virus’.

Small wonder, then, that mental health professionals have warned of potentially dramatic consequences; in the United Kingdom, an Office for National Statistics survey found that almost one in five adults were experiencing some form of depression in June 2020, almost double the prevalence recorded in the pre-lockdown period, and there is evidence of a potential widening of mental health inequalities in other studies. But, the effects of contracting the Coronavirus are first and foremost physical, and we have known for some time that it impacts those with underlying health conditions and disabilities as well as the elderly disproportionately. So, how did we approach taking care of our mental and physical health when the first wave of the pandemic struck? What role (for good or for ill) did our use of social media platforms play? What did we learn which we can usefully build upon going forward?

In this fourth in a series of reports, we draw on social media data to better understand the experience of mental and physical health in the UK during the pandemic. We explore the extent to which COVID-19 has, both in and of itself and as a result of the restrictions it has given rise to, posed challenges for the maintenance of peoples’ wellbeing. We provide a rich, qualitative analysis of their online conversations to speak to their experience of the first six months of the pandemic, and we highlight the ways in which social media might, in some important respects, have proved helpful.

In addition to the predictable anxiety expressed around the peak of the pandemic’s first wave, we can clearly discern a ‘pulling together’ of people who contribute to online communities – considerable efforts to provide advice and support as well as to articulate sympathy where appropriate. In this, we can perhaps see our inherently social selves making use of technology to reach out and connect with one another, despite the restrictions applied to physical interactions. It does, nonetheless, raise serious questions about the impact of the digital divide upon those excluded from participation in such virtual meeting spaces. Efforts to improve or maintain physical fitness, promoted and encouraged via social media, are also in evidence. However, our findings point toward more that could have been done, and sooner, to target those most at risk of poor outcomes in the event of infection by dint of physiology – a missed opportunity for advocates of preventative health measures, perhaps.

The reports we have produced speak to the value of access to social media data in order to better understand aspects of health and care, whilst highlighting some of its limitations from the point of view of policy-making. We are persuaded that there is the potential to derive significant public benefit from such data and that a dialogue with platform operators to improve access for the purposes of research about would be worthwhile.

Annemarie Naylor – Director of Policy and Strategy

Future Care Capital

2 Introduction and key findings

2.1 Background and objectives

Future Care Capital (FCC) is a charity which undertakes research to advance ideas that help shape future health and social care policy and deliver better outcomes for individuals living in the UK. FCC aims to stimulate and facilitate a national debate around health and social care provision.

This report forms one of four outputs from the *Communicating Public Health: Conversations about the COVID-19 Pandemic* research project undertaken by Ipsos MORI on behalf of FCC. The project involves analysis of social media posts over a period of five months in 2020 to assess the performance of the government's communication strategy, and to explore the impact of the pandemic on health and social care professionals, and the experience of mental and physical health in the UK.

Attempts to halt the spread of the COVID-19 have had a significant impact on the lives of everyone in the UK. The mental and physical impact of the pandemic extends beyond the clinical impact experienced by those who tested positive (though new research¹ to explore the long-term effects on patients is underway). Despite early advice and support to mitigate the impact², early results six months in to the pandemic suggest that the UK witnessed a decrease in mental health,³ which is verified through reported increases in demand for support services.⁴

This report aims to add to this emerging body of evidence, and details the findings from the final of four overarching research objectives for the project:

Draw on social media data to better understand the experience of mental and physical health during the pandemic amongst social media users in the UK

The report should be read alongside the further three outputs which consider: i) the value of conducting social media research for this purpose; ii) the performance of the government's public health messages; and iii) online conversations about and among health and social care professionals during the pandemic.⁵

2.2 Overview of approach

The objectives for this study were explored through collection of relevant social media data, drawn using a bespoke search query within the Synthesio platform. The result was a cleaned dataset of 27,497 social media posts from between 01 February and 30 June 2020. The dataset included posts from social networks, forums, and comments. Analysis of the dataset was conducted using topic modelling, factor analysis and qualitative investigation. As part of a wider investigation of implications for physical health,

¹ Research study into long-term health impacts of COVID-19 launched in the UK: <https://www.gov.uk/government/news/research-study-into-long-term-health-impacts-of-covid-19-launched-in-the-uk>

² Guidance for the public on the mental health and wellbeing aspects of coronavirus (COVID-19):

<https://www.gov.uk/government/publications/covid-19-guidance-for-the-public-on-mental-health-and-wellbeing/guidance-for-the-public-on-the-mental-health-and-wellbeing-aspects-of-coronavirus-covid-19>

³ Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population:

[https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(20\)30308-4/fulltext](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(20)30308-4/fulltext)

⁴ BBC, Coronavirus: Severe mental health problems rise amid pandemic: Coronavirus: Severe mental health problems rise amid pandemic

⁵ Future Care Capital. (2020). *Communicating Public Health: Conversations about the COVID-19 Pandemic – Report 1. Method review and overview of key announcements.* <https://futurecarecapital.org.uk/research/covidconversations-report-1/>

the initial topic model analysis was further supplemented through exploration of four additional topics on social media.

For clarity, the social media analysis conducted as part of this project is not representative of all members of the public; instead, it seeks to be reflective social media users who have posted publicly about coronavirus during the pandemic. The data, and findings, therefore over-represent the views of younger members of the public, and those from more affluent backgrounds. The findings are also reflective of the nature of social media, both in frequency of posts and in access to publicly available data. As such, the data discussed in this report is naturally weighted towards Twitter content, and towards the earlier stages of the pandemic which witnessed the highest levels of relevant posts on social media.

Despite these limitations, social media data provides a rich insight into the experience of the wider public in relation to mental and physical health. It helps provide a sense of the key challenges faced by a large proportion of the public, how these evolved over the course of the pandemic, and how these interact with key announcements and attempts to provide help and support to mitigate against the impact.

2.3 Structure of the report

This report intends to provide insight into the findings from the analysis of social media posts. It details:

- The methodology that has been used to export, clean and conduct the topic modelling
- An overview of individual topics, and clusters of topics, relevant to mental and physical health during the COVID-19 pandemic
- Analysis of the main topics highlighted by the topic modelling, and the evolution of discussion over time.

2.4 Acknowledgements

Ipsos MORI would like to extend our thanks to Annemarie Naylor, Dr. Peter Bloomfield, and Dr. Josefine Magnusson for their insight, advice and feedback throughout the project.

2.5 Key findings

2.5.1 Key implications for mental and physical health

- The experience of mental health during the pandemic was well represented on social media. This is apparent firstly by the volume of social media users' expressing feelings of anxiety, depression or exhaustion, but also by the wealth of posts that sought to raise awareness of mental health and to offer advice and support.
- Fear of contracting COVID-19 and concern over the welfare of loved ones were common themes underpinning many social media users' expressions of feeling anxious, sad, angry, depressed or exhausted. However, direct health risks were not the only cause for concern. The breadth of issues discussed in relation to mental health included the impact of changing working practices, being placed on furlough or being insecure in employment, and being isolated from friends and family.
- Social media also provides some insight into the groups of people who may have been disproportionately affected. Social media users expressed particular concern for those who live

alone, those who have difficult home lives or are at risk of abuse; children, pregnant women and new parents; and those with existing health conditions or with learning disabilities.

- The data also demonstrates the difficulty faced by the government in responding to the pandemic. Social media users discussed the potential impact on mental health caused by different policy options; and in some cases, the options available presented a lose-lose situation. This is most obvious in the debate on social media in relation to the easing of lockdown; where social media users discussed balancing the potential impact on mental health from fear of contracting COVID-19, alongside the potential impact on mental health associated with sustained economic hardship and social isolation.

2.5.2 Implications for physical health

- The implications of the pandemic on physical health were evident from the very early announcements to enforce a lockdown. The decision to restrict exercise and close sports facilities caused the greatest level of discussion on social media as the easing or enhancing of restrictions was debated.
- However, analysis of social media data points to a missed opportunity. Encouragement to improve physical health was not part of the initial strategy to help fight COVID-19, despite early evidence that obesity led to worse health outcomes. Much of the early discussion of exercise focused on what you shouldn't do, rather than what you should and can do; attempts to get the public engaged in PE lessons, whilst important for children and young people, were not targeted at the group of the population who might most have benefited from daily exercise given the risk factors associated with the pandemic; and there was little scrutiny and debate about the need to tackle obesity in order to reduce the risks associated with infection until April and May.

2.5.3 Opportunities for role of social media

- The analysis also points to the positive impact of social media during the pandemic. The data demonstrates a sustained conversation that sought to keep spirits high by showing sympathy for others, encouraging people to keep in touch and care for one another, and providing motivation and positivity around things to be grateful for. This spirit was evident in a quarter (24%) of posts analysed through the topic model.
- More broadly, social media proved to be a major resource platform for those seeking help with mental health. The data captured a wide variety of support services advertised on social media to help individuals, and those they are responsible for, through the pandemic. This ranged from relatively simple promotion of mindfulness techniques, through to “top tips” on how to work from home, and advice on how to look after employees. Those promoting support included official government channels, mainstream media coverage, charities and private sector companies alongside individuals.
- The power of social media was further evident for issues relating to physical health, where high profile initiatives such as PE lessons with Joe Wicks and the campaign ‘Couch to 5k’ were able to gain momentum quickly and easily. Social media also acted as a valuable comms channel for clubs and facilities to confirm plans. However, it also poses a challenge for dissemination of misinformation relating to poor health advice, with potentially fatal consequences.
- Finally, the research also highlights the importance of the design of the social media query and cleaning process to identify relevant conversation of interest. The query relating to physical health

was initially too restrictive. Future projects would benefit from a greater level of regular ethnographic observation to ensure that queries can be developed over time and react to events and issues, rather than remain static.

3 Methodology

This chapter provides a short overview of the methodology used to conduct the project, and key considerations for interpretation of findings. Further detail regarding the methods used can be found within 'Report 1', which provides a detailed discussion of the merits and limitations of these methods.

3.1 Our approach

The primary methodology used to explore these aims was social media analysis, which was further interrogated using topic modelling, factor analysis and qualitative investigation. The key stages to the approach are outlined below.

- **Stage 1 – Data Collection:** data was collected using the social media analytics platform Synthesio for the first five months of the pandemic (01/02/20 – 30/06/20). A Boolean search query was developed to identify relevant content on social media that was relevant to mental and physical health. The full query shown in Figure 3.1 was developed iteratively and inspired by a wider initial query that captured all mentions of the coronavirus pandemic and associated topics. The final search query identified 50,027 posts from social networks, news article comments, micro-blogging websites and forums.⁶ A breakdown of the sources of conversation is provided at section 3.2 below.
- **Stage 2 – Data Cleaning:** Based on manual coding of a random selection of 500 posts, a machine learning algorithm was used to identify highly relevant posts across the dataset. The algorithm achieved 75% accuracy when tested on the training data and so was applied to the full dataset. This generated a final cleaned dataset of 27,496 posts.
- **Stage 4- Topic Modelling:** Data was analysed using the Ipsos MORI in-house topic modelling platform, built in Python. This used natural language processing (NLP) techniques to generate a list of terms and phrases that can be analysed to uncover relationships and associations between terms and constructs (for example, noun chunks; subject and object in the sentence; terms strongly associated with other terms). Term similarity was evaluated using a machine-learning algorithm focusing on similarity; words like “good” and “great”, for example, were evaluated and classified as similar. The topic modelling initially identified 78 ‘topics’. These were qualitatively reviewed and labelled by the research team to identify 41 relevant topics.
- **Stage 5 – Factor analysis:** A statistical factor analysis was then conducted to map relationships between topics and group them based on terms commonly occurring next to or near each other within a social media post. The factor analysis produced 17 overarching clusters across 41 topics broadly relevant to the mental and physical health experiences of social media users during the COVID-19 pandemic.
- **Stage 6 – Qualitative investigation:** Qualitative review and analysis was applied throughout the research, particularly for refining the topic modelling and quality assuring the factor analysis. Once the topics and clusters were established, qualitative investigation sought to understand more about each theme within the data. This included reviewing posts over time,

⁶ Additional parameters were set to only include posts in English, and those posted from within the UK.

understanding key platforms and authors, and using automated metrics appended to the data by Synthesio such as estimated gender and sentiment of a post⁷.

This qualitative approach is also reflected in the way the data is reported. Although numerical data is provided where appropriate, for the most part a qualitative approach to findings has been taken.

Figure 3.1: Data collection query developed to capture social media posts relevant to mental and physical health during the coronavirus pandemic

```
(anxiety OR anxious OR "panic disorder" OR depression OR loneliness OR lonely OR "PTSD"
OR "post-traumatic stress disorder" OR ((substance) NEAR/2 (abuse OR misuse)) OR stress OR
((worry OR apprehension OR fear OR scared OR apprehensive OR worried) AND (future)) OR
((Mental OR psychological) NEAR/2 (health OR wellbeing OR distress OR illness OR illnesses OR
disorder OR disorders))
```

OR

```
((physical OR physically) NEAR/2 (activity OR active OR fitness OR fit OR health OR healthy OR
wellbeing OR unhealthy OR unfit)) OR ((gain OR gained) NEAR/2 (weight OR fat)) OR ((lost OR
loss OR loose) NEAR/2 (muscle OR tone OR fitness)) OR ((health* OR unhealthy OR clean OR
veg OR vegetable* OR fruit* OR wholefood*) NEAR/2 (diet OR eating OR food OR meal*))
```

AND

```
("social isolation" OR lockdown OR furlough OR quarantine OR pandemic OR wuhanvirus* OR
coronavirus* OR novelcorona* OR 2019?nCoV OR "2019 ncov" OR 2019ncov OR covid19* OR
" covid 19" OR "covid?19" OR covid) OR ((wuhan OR corona OR "cv-19" OR cv19) NEAR (virus
OR disease))
```

Following analysis of the topic model, it was clear that the original query relating to physical health was too restrictive. Additional investigation was therefore conducted across four main topics that emerged as key issues from the topic model or were identified as high-profile campaigns related to physical health. The queries for these four topics can be found in the appendix. Analysis of this data did not benefit from additional cleaning or statistical analysis; it nonetheless provides a useful record of, and introduction to, the key issues and initiatives discussed in relation to physical health during this period.

3.2 Sources of conversation

The sample of posts taken from social media for this study reflects the skew in access to publicly available social media data. As such, the majority of posts and conversations captured in relation to mental and physical health in the UK were sourced from Twitter, with 24,129 (88%) posts from this platform within the main dataset.

Forums and online comments was the second most common platform with 2,275 (8%) posts on sites such as the Student Room and, HealthUnlocked Communities. Facebook posts were a smaller proportion of conversations with 1,093 (4%) posts.

⁷ Automated sentiment within the Synthesio platform groups comments in to three categories: positive, neutral, negative.

Seventeen percent of posts within the main dataset had a gender identified⁸ in the sample. Of them, 54% of comments were posted by females and 46% by males. The topics identified through the analysis were largely discussed equally by males and females, suggesting that gender made little differences to the experiences of mental and physical health shared on social media.

3.3 Notes on interpretation

3.3.1 Representativeness

For clarity, the social media analysis conducted as part of this project is not representative of all members of the public in the UK; instead, it seeks to be reflective of those who posted publicly about physical and mental health during the first months of the coronavirus pandemic on social media.

It is not possible to identify the precise profile and characteristics of each individual social media user within the data. However, it is important to note that the data is likely to reflect the same skews in profile as that of social media users compared to the wider UK population overall. It is therefore reasonable to assume that the findings over-represent the views of younger health and social care workers and those from more affluent backgrounds.⁹

The findings are also reflective of the nature of social media data, both in frequency of posts and in access to publicly available data. As such, the data discussed in this report is naturally weighted towards Twitter content, and towards the earlier stages of the pandemic which witnessed the highest levels of relevant posts on social media.

Despite these limitations, there is considerable value in using social media data to better understand experiences related to mental and physical health. It provides a rich insight in to the daily lived experiences of a large group of the population, in near real time, without risk of error in respondent recall; it's ability to pinpoint a journey over time also provides evidence of how the experience of a proportion of the public intertwines with key events and policy announcements in response to the pandemic; and finally, it offers insight into the role of social media during a time of crisis, such as opportunities for sharing support and advice.

3.3.2 Data collection and processing

It is worth noting that the topic model is generated 'bottom-up' from the data set, rather than being imposed as a thematic framework (as would be the case for other types of qualitative and quantitative analysis). It therefore attempts to extract as much understanding and learning from the full corpus of text posted on social media as possible, based on an iterative thematic grouping. There is inevitably a 'long tail' of content that cannot be easily categorised.

From the full clean set, 86% of posts were categorised into the topics described by the topic model and are therefore included in the topic wheel. It is important to note that a single post may appear under multiple topics. The remaining data (14% of posts) could either not be categorised (irrelevant or incoherent) or was added to topics which were manually excluded (identified as irrelevant during the qualitative review of the topic model).

⁸ As part of the data collection process, social media aggregators such as Synthesio append 'gender' to datasets where they have either been provided with this by social media platforms by the API, or where this has been declared publicly available by the user. This information is not available for all social media users.

⁹ See Report 1 for detailed discussion of the profile and representativeness of social media users

4 Overview of key themes in discussion

This chapter outlines the key findings from the analysis of online posts captured as part of the main query, as described by the topic model. Here we introduce the main topics identified in the online conversation and explore what this tells us about mental and physical health in the UK during the pandemic.

Key findings

The data captures an in-depth picture of issues relating to mental health during the pandemic. Expressions of anxiety, exhaustion and depression account for the largest cluster of conversation; the cause of the feelings and experiences varies from anxiety about catching coronavirus, through to the impact of changing working practices, being isolated from friends and family, and economic hardship caused by lockdown.

However social media also provides evidence of the spirit of positivity and promotion of offers for help and support available. Those promoting support included official government channels, mainstream media coverage, charities and private sector companies alongside individuals.

In contrast, there was little discussion of the wider implications for physical health outcomes specified in the initial search query, such as diet and weight. Though there is strong evidence of efforts to use social media to galvanise action on taking exercise (see chapter 6), these are largely disconnected from a discussion of the poor physical health outcomes that might result from the policies and restrictions imposed in response to the pandemic.

4.1 Introduction to topic model

A topic wheel summarises a topic model and factor analysis and, as such, is a visual representation of a conversation on social media. In this case, the topic wheel gives an overview of the online conversation relating to mental and physical health in the UK during the pandemic.

The inner ring is divided into 41 different segments – these are ‘topics’ of conversation as identified by the initial topic analysis. The outer ring groups these topics into 17 ‘clusters’ as identified by the factor analysis¹⁰. The size of each segment is proportional to the number of posts captured in the corresponding topic and cluster within the model. It is important to note that a single post may appear under multiple topics, therefore topics and clusters add to more than 100%.¹¹

4.2 Topic model overview

The topic wheel (Figure 4.1) and frequency table (Table 4.1) show the online conversation of the UK public in relation to mental and physical health, as generated by the initial main search query (see Figure 3.1). They show that the conversation mostly consists of nine topics, all of which represent at least 10% of the conversation. This includes posts which discuss anxiety, depression and exhaustion; living in

¹⁰ The 41 topics (inner wheel) and 17 clusters (outer wheel) were created based on the most frequently occurring terms in the data, which were identified using algorithm, then qualitatively reviewed by Ipsos MORI researchers (as outlined in the previous chapter). Where labels for topics are not shown this is for formatting purposes only. Further information about the method used can be found in chapter 3 of this report, and in Report 1.

¹¹ The multicoding of posts is intentional to allow for more than one theme to be extracted from a single post.

lockdown; keeping positive; coping strategies; the government response; economy and employment; help and support for mental health; loneliness and clinical health.

Compared to the volume of discussion relating to mental health, there is relatively little volume of discussion on social media about the implications of the pandemic on physical health as prescribed by the initial search query. Four per cent of posts specifically mentioned issues relating to weight, smoking and drinking; a further two per cent reinforced positive messages about enjoying exercise. This is likely to be an underestimate of the true volume of discussion of physical health, driven in part by a restrictive query design. Chapter 6 explores some of the key issues and flagship announcements relating to physical health. However, it is clear that these wider comments largely appear disconnected from specific debate about the direct impact of coronavirus, and the resulting lockdown, on wider health issues such as diet, weight and level of fitness. This is in clear contrast to discussion of mental health, where symptoms and outcomes were discussed alongside attempts to raise awareness of impact on mental health and offer help and support.

The online conversation also consisted of smaller topics such as the role of media and TV in causing anxiety, or difficulties for those in education or needing to home school, but also the positive impact of opportunities to learn new skills. This demonstrates the diversity of online conversations related to mental and physical health during the COVID-19 pandemic.

Table 4.1 below shows these topics and clusters and includes the counts and percentages for each. Please note that, as posts could be multi-coded, many will appear in more than one topic. Percentages should therefore be treated as broadly indicative of volume only across similar themes.

Table 4.1: Topics model counts and percentages

| Clusters and Topics | Count | Percentage |
|---|--------------|------------|
| Anxiety, depression and exhaustion (total) | 15907 | 42% |
| Sad, angry, anxious and stressed | 1449 | 39% |
| Tired and burnt out | 1354 | 4% |
| Low mood and energy | 621 | 2% |
| Living in lockdown (total) | 10298 | 31% |
| Impact on mental health | 6396 | 21% |
| Pressure of the pandemic | 2820 | 10% |
| Affected daily life | 2048 | 6% |
| Keep positive (total) | 9204 | 24% |
| Sympathy | 6753 | 18% |
| Positive vibes | 1506 | 5% |
| Keep in touch and care for others | 1323 | 4% |
| Coping strategies (total) | 7050 | 21% |
| Online help and support | 5886 | 17% |
| Promoting mindfulness | 1037 | 3% |
| Awake at night | 905 | 3% |
| Government response (total) | 6087 | 19% |
| Easing lockdown | 2130 | 7% |
| Government action | 2122 | 7% |
| Death and infection rates | 1274 | 4% |
| Follow guidelines and advice | 1053 | 3% |
| Economy and employment (total) | 5886 | 17% |
| Economy | 3240 | 10% |
| Employment and money | 2942 | 9% |
| Help and support for mental health (total) | 4367 | 13% |
| Mental health support | 3475 | 11% |

| | | |
|---|-------------|---------------|
| Donations | 841 | 3% |
| Role of digital tech | 394 | 1% |
| Loneliness (total) | 4166 | 13% |
| Help to tackle loneliness | 3468 | 11% |
| Effects of diminished social interaction | 832 | 3% |
| Clinical health (total) | 3796 | 11% |
| Clinical impact | 2624 | 8% |
| Symptoms / health conditions | 1066 | 3% |
| Discussion of medication | 409 | 1% |
| Media and TV (total) | 2994 | 9% |
| News and media coverage | 2200 | 7% |
| TV as entertainment | 927 | 3% |
| Learning (total) | 2373 | 6% |
| Education | 1854 | 5% |
| New hobby and skills | 551 | 2% |
| Experience inside and outside home (total) | 2078 | 6% |
| Living conditions | 1089 | 4% |
| Promoting exercise | 594 | 2% |
| Travel | 473 | 1% |
| Physical health (total) | 1359 | 4% |
| Weight | 552 | 2% |
| Promoting better health | 426 | 1% |
| Drinking, smoking and drugs | 421 | 1% |
| Safety (total) | 657 | 2% |
| Risk of abuse | 443 | 1% |
| Role of police | 225 | <1% |
| Care homes (total) | 372 | 1% |
| Facemasks (total) | 197 | <1% |

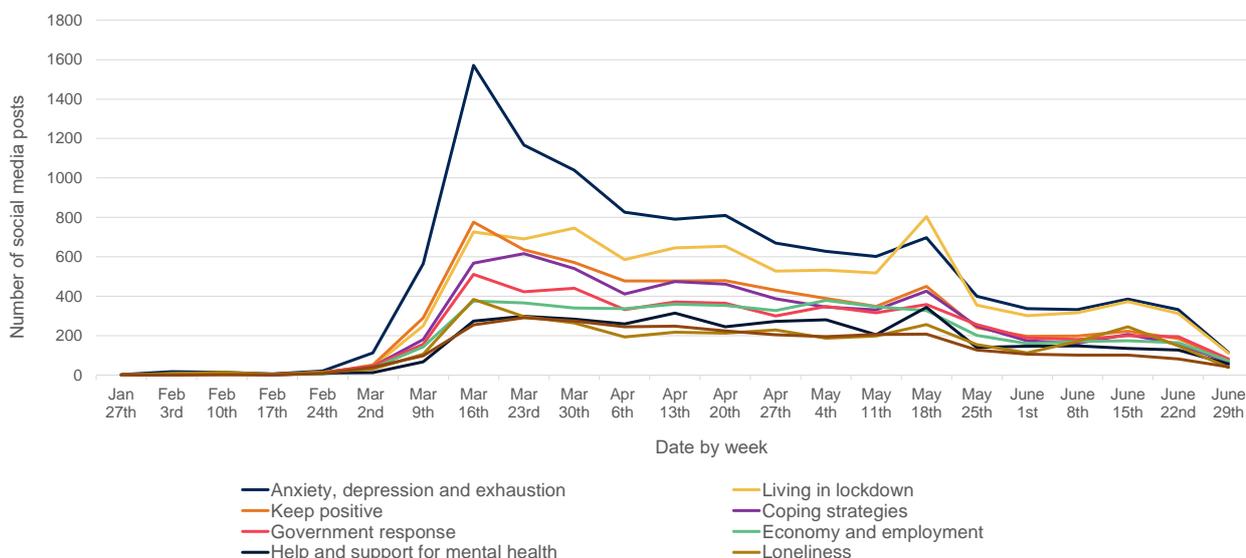
4.3 Trends over time

Figure 4.2 shows the volume of social media posts related to topics which comprise more than 5% of the online conversation. Looking at the volume of posts over time, we can see that the volume of social media posts increased from week five onwards, reaching a peak in week twelve before gradually declining over time. Week twelve relates to the time period from Sunday 15 March to Saturday 21 March, which is the week before Prime Minister Boris Johnson announced a lockdown of the UK.

The chart shows the number of social media posts building as the UK continued to grapple with the COVID-19 pandemic in February and March. This suggests that, in the period preceding the introduction of a nationwide lockdown, there was a growing volume of discussion around mental and physical health.

Overall, the broader decline in the volume of social media posts related to mental and physical health reflects a wider decline in posts about COVID-19 on social media during this period. As discussed in Report 1¹², both the number of social media posts and Google search queries relating to the COVID-19 pandemic peak in the middle of March and slowly decline into June 2020.

Figure 4.2: Volume of online posts related to mental and physical health in the UK (10%+)

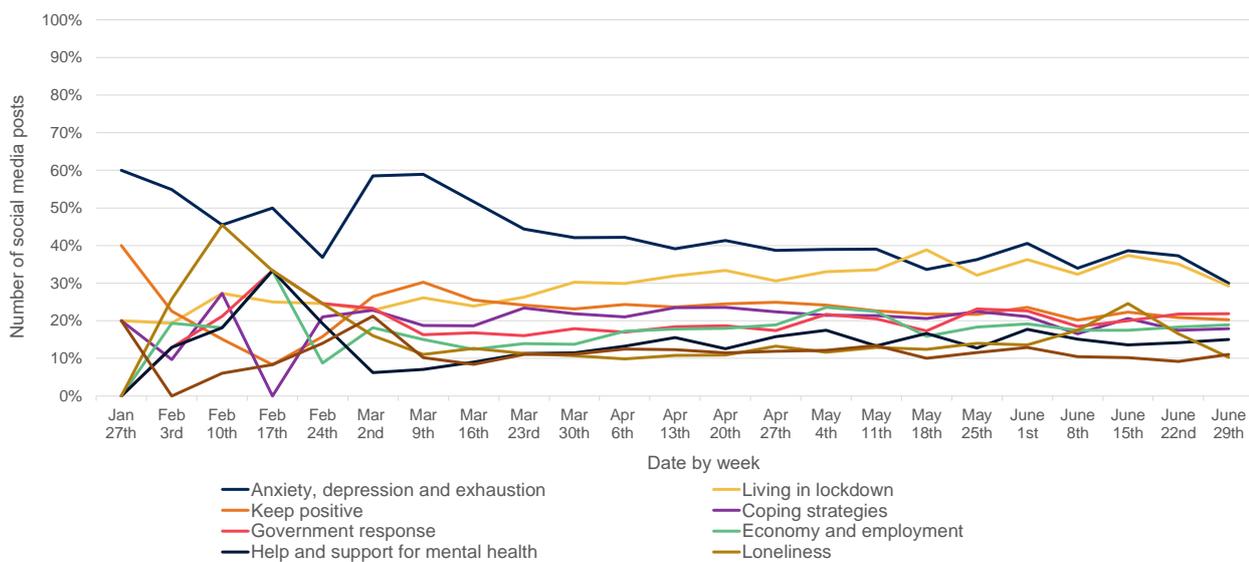


However, as shown in Figure 4.3, when looking at these topics as a proportion of all social media posts relating to mental and physical health, a slightly different pattern emerges. The volatility in early discussion about the impact of the pandemic may reflect the relatively small volume of comments posted prior to week 12; yet, it is interesting to note that posts that express feelings of anxiety, depression and exhaustion were consistently high across the first phase of the pandemic as a proportion of the overall conversation, whereas loneliness was particularly high as a proportion of the overall conversation in the first few months before levelling off from week twelve onwards.

The topic of ‘living in lockdown’ also became more prominent as time went on, peaking in mid-late May. The evolution of each topic between February-June is explored in the following chapter.

¹² Future Care Capital. (2020). Communicating Public Health: Method review and overview of key announcements. <https://futurecarecapital.org.uk/research/covidconversations-report-1/>

Figure 4.3: Topics as a proportion of all social media posts related to mental and physical health



4.4 Conclusion

Social media data does provide valuable evidence of the experience of mental health in the UK during the pandemic, for social media users and their wider friends and family. This extends far beyond expressions of anxiety associated with concern about falling ill with coronavirus and the potential loss of life associated with the virus. Associations with mental health stretch to a wide variety of aspects of life and are the result of measures taken to try to mitigate the impact of the virus.

The wide range of authors posting on the topic of mental health suggests that organisations, both public and private, were quick to recognise the need to raise awareness, discuss and offer help relating to mental health.

The level of conversation follows the same broad trajectory as the wider conversation relating to coronavirus on social media. It is unclear whether the fall in levels of conversation over time reflects an improvement in the emotional state of social media users; a drop in interest in discussing the implications of mental health openly on social media; or a positive response to the large amount of early promotion on how to seek support for mental health. It is most likely to be a combination of all three.

The data collection query designed for this project did not yield high levels of conversation about the experience of physical health during the pandemic. This will in part reflect the restrictive nature of the query which focused only on terms relating to fitness, weight, and diet. Though this has been re-examined in Chapter 6, future projects to explore physical health during the pandemic would benefit from a broader query which includes a more comprehensive set of terms relating to poor physical health outcomes – for example, there was some niche spontaneous discussion on issues relating to drinking, drugs and smoking, this could potentially be extended to include other forms of addiction.

Nonetheless, although the topic wheel analysis is likely to underestimate the number of posts relating to physical health, there remains a stark contrast in the volume of discussion between mental and physical health. Help and support for mental health was identified spontaneously within the same posts that discussed feeling anxious, sad, or depressed (N.B the terms 'help' and 'support' were not specified in the initial search query); this was not the case for physical health. As explored in chapter 6, there is strong evidence of initiatives to promote better exercise, but these are disconnected from specific discussion of

poor outcomes from the pandemic relating to physical health such as the risks of putting on weight and raising awareness that obesity is linked to a higher risk of hospital treatment for coronavirus.

5 Experience of mental health

This chapter provides a narrative description of each of the topics most prevalent in the topic model relating to mental health during the pandemic. Where online posts are shown, these have been redacted and altered as necessary to retain anonymity.

Key findings

A high proportion of posts discussed how social media users were feeling during the pandemic. These included feelings of anxiety, stress, depression, exhaustion and burn-out. Though discussion of these feelings spiked in mid-March, at the start of lockdown, the nature and cause of these feelings evolved. This is most apparent in concern about economic uncertainty and whether lockdown should be extended. As such, the data also demonstrates the difficulty faced by the Government in responding to the pandemic. Many of the policy interventions undertaken have a direct impact on mental health; and in some cases, the options available present a lose-lose situation

Social media also provides some insight into the emotional response of people who may have been disproportionately affected by the pandemic – including those who live alone; those who have difficult home lives or are at risk of abuse; children, pregnant women and new parents; and those with existing health conditions or with learning disabilities.

As well as providing a forum for users to share their lived experience of the pandemic, social media provided a platform for wider help and support. This ranges from expressions of sympathy and sharing positive thoughts, through to tips of advice and more formal routes for support.

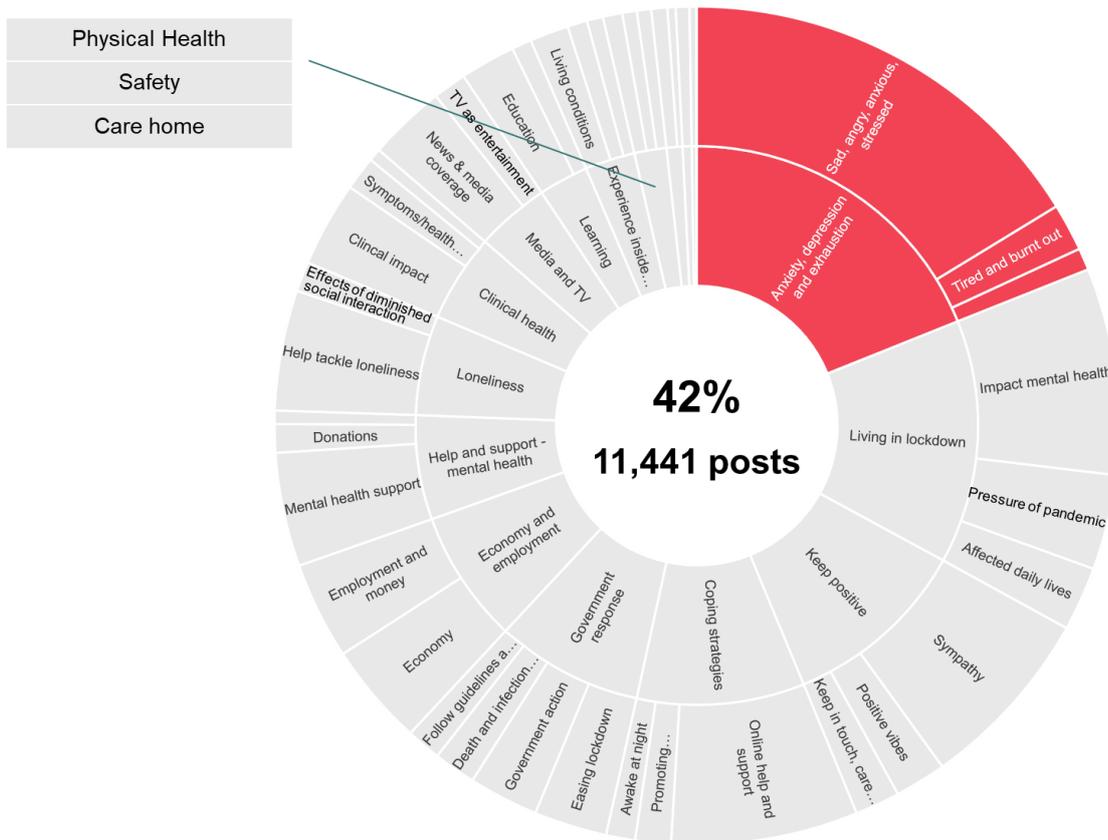
Within the 17 topic clusters identified by the factor analysis, 4 broad themes emerged relating to mental health:

1. Discussion of feelings during the pandemic
2. Life under lockdown
3. Help and support
4. Impact of government response

This chapter considers each of these in turn.

5.1 Theme 1: discussion of feelings during the pandemic

Figure 5.1: Discussion of feelings within the Topic Wheel



5.1.2 Overview – volume and trends over time

Two in five (42%) of the social media posts that were analysed mentioned topics relating to how social media users were feeling. Many social media users described the way that they were feeling using words such as "frustrated", "anxious", "sad", "angry", "bored", "guilty", or "worried". Posts using these terms represent by far the largest cluster of discussion captured within the study.

Most posts relating to how people feel during lockdown originated from accounts belonging to individuals, and these individuals disproportionately identified as female (59%).¹³ However, several media outlets and mental health organisations also appeared within the most frequent authors. These included The Independent, Stylist Magazine, Parents' Voice, Anxiety UK, The Mental Health Foundation and Young Minds.

Across the cluster of discussion relating to how social media users were feeling, three key topics emerged. The largest of these included posts mentioning feelings of "sadness", "anxiety", "stress" and "anger" (39%). There were also smaller conversations in which social media users described feeling tired and burnt out (4%) and having low mood and energy (2%). The wide variety of terms, and strength of emotion used to describe this experience is evident in the word cloud presented at Figure 5.2.

¹³ where gender could be determined (17% of posts).

Some individuals described how the pandemic heightened symptoms of pre-existing mental health conditions. However, some posts described how some of those with pre-existing mental health conditions were coping relatively well; because they already had coping strategies in place or because, during lockdown, situations which had previously caused anxiety were removed.

In other cases, social media users described how, it was not COVID-19 itself, but the impact of lockdown restrictions that had resulted in changes to their mental wellbeing. For example, several students described how having the academic term curtailed had impacted many aspects of their lives. Those who had been furloughed described the impact of the lack of structure and purpose that their job provided.

There was also evidence of a range of concerns surrounding the mental wellbeing of children. Some social media users were concerned that their own feelings during the pandemic would have an adverse impact on their children. Others suggested that the experience of the pandemic could trigger ongoing mental ill health in children, or that lockdown and the associated lack of social interaction and education could slow children's development.

Figure 5.4: Illustrative quotes that mention feeling sad, angry, anxious or stressed

“ Just browsing through posts on social media. Freaking myself out about COVID-19. My anxiety is high.
Feeling anxious, Twitter, March

“ I am 70 and never suffered with panic attacks or anxiety in my life before covid-19 and lockdown started. I have panic attacks most days, and a terrible pressure at the back of my head.
Feeling anxious, Health Unlocked, March

“ Nearly had a panic attack today when my grandma began sneezing. Anxiety and COVID-19 do not mix
Feeling anxious, Lipstick Alley, May

“ I can't stop thinking about those children for whom this pandemic is going to be the trigger for a lifelong battle with obsessive-compulsive disorder. It honestly makes me so sad. Please can we put more funding into mental health services when this is all over?
Concerns for children, Twitter, March

“ This whole coronavirus has made me so so so sad. Had to leave my job that I genuinely enjoy, my Uni flat mates who I adore, my course mates who I won't see til September.
Impact of Lockdown, Twitter, March

“ Lockdown is extremely hard for me. I was furloughed so the lack of work has been wondering what to do with my days. I wake up with anxiety about how I'm going to get through the day with nothing to do. Even though I have plenty of things I need to do around the house, I can't bring myself to doing them as I get overwhelmed just thinking about it. It's honestly been the worst experience for me.
Impact of Lockdown, Twitter, March

5.1.4 Tired, burnt out, and low energy

Social media users also described feeling exhausted, or burnt out, and complained of low energy or mood levels. Posts suggested a range of causes, including work rate and intensity of the workplace, being out of routine, and low motivation to focus on mental and physical wellbeing. Even social media and video calls were reported to add to the sense of fatigue. Mood and energy levels were also the topic of several positive posts, which aimed to raise awareness and share coping strategies.

Figure 5.5: Illustrative quotes mentioning feeling tired, burnt out or having low-energy

“ Video chat fatigue may be responsible for draining our energy, according to the BBC...
Tired and burnt out, Twitter, March

“ Lockdown has unsettled our regular routines, including our exercise and eating behaviours, which can leave us feeling anxious or low.
Low mood and energy, Twitter, March

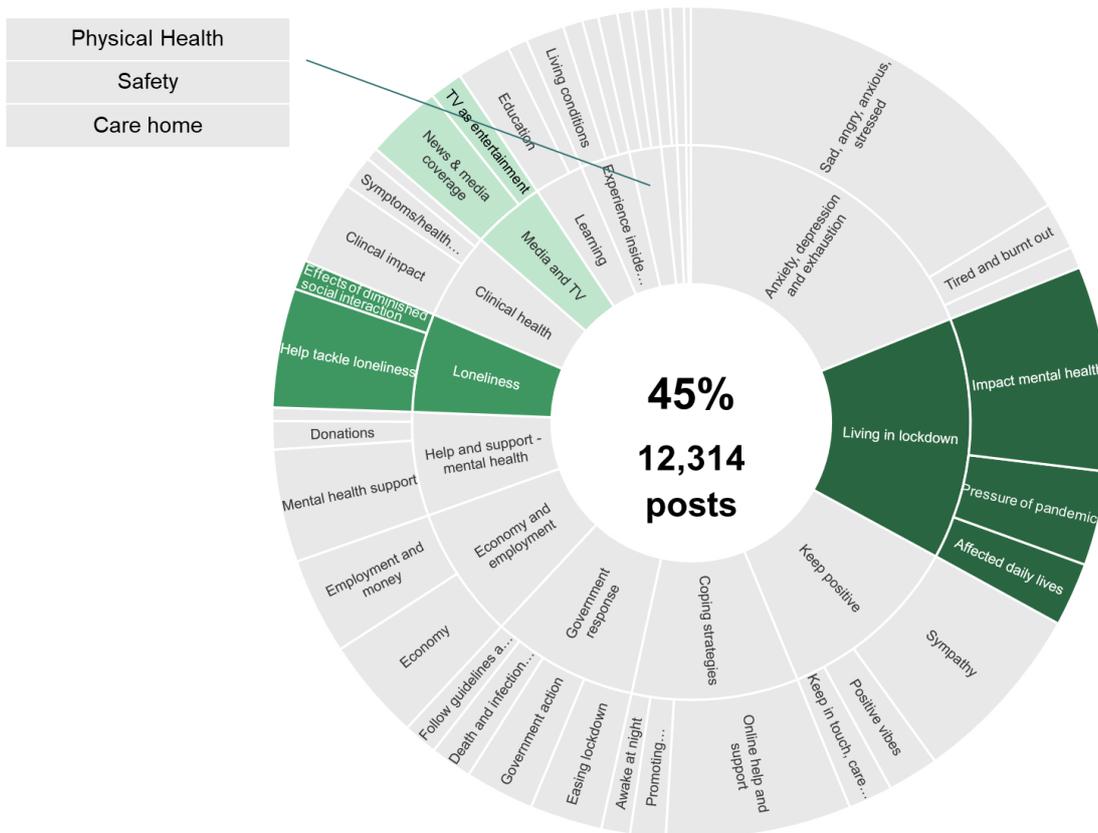
“ My "Learning the Psychology of Happiness " during Coronavirus is coming soon on my website. We can all overcome low mood and anxiety, so let me show you the mental health hacks to use everyday #happiness
Low mood and energy, Twitter, April

“ As lockdown continues, I become increasingly unstable, some days it seems that everything is okay and others it just becomes overwhelming and the scary thoughts come back. Haven't had a good nights sleep in months and have dreams that seem pretty lifelike (they don't make much sense either). Showering and dressing up barely happen. I feel bad for loved ones because it's just a repetitive cycle.
Low mood and energy, The Student Room Forums, April

“ Now more than ever, #EveryMindMatters. To access an NHS Mind Plan, visit <https://www.nhs.uk/oneyou/every-mind-matters/> for extra support to help you deal with stress, boost your mood and help you feel on top of things #coronavirus
Impact mental health, Twitter, June

5.2 Theme 2: life under lockdown

Figure 5.6: Discussion of life under lockdown within the Topic Wheel



5.2.2 Overview – volume and trends over time

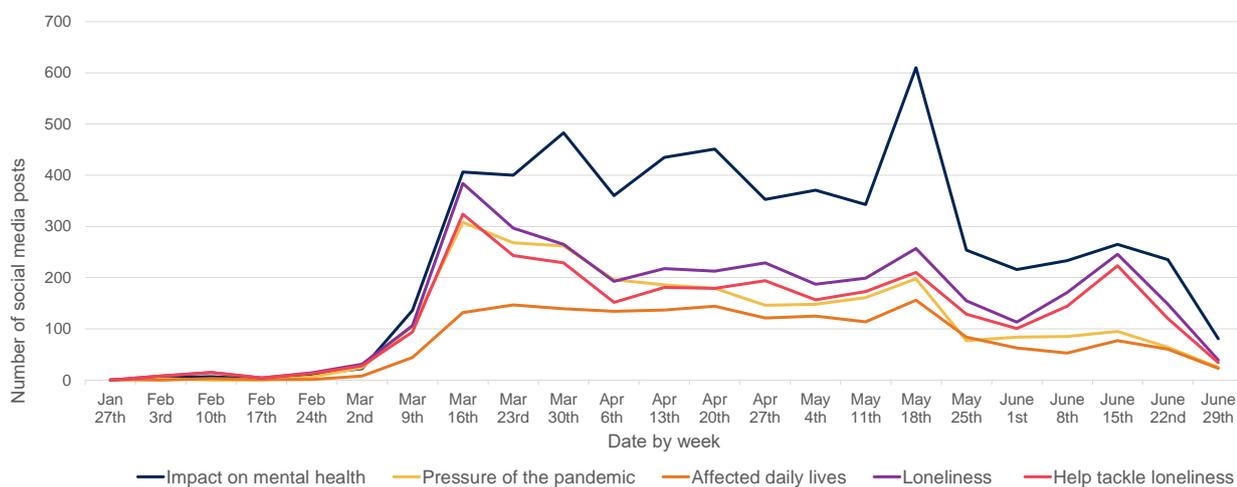
Just under half (45%) of the social media posts that were analysed mentioned life in lockdown. Conversations within this topic centred on discussions of the impact of lockdown on mental health (21%),

the pressures caused by the pandemic (10%) and the effects of the pandemic on daily life (6%). Overall, social media posts mentioning loneliness represented 13% of the topics analysed, within this 11% referenced help to tackle loneliness whilst 3% discussed social interactions. Many social media users discussed loneliness in relation to vulnerability and the experience of quarantine.

Most posts relating to life in lockdown originate from personal accounts belonging to individuals. However, several mental health organisations and professional organisations appeared within the most frequent authors. These included Anxiety UK, the Mental Health Foundation, MQ: Transforming Mental Health, the Academy of Medical Sciences, and the British Psychological Society. The Campaign to End Loneliness and Independent Age were also prominent within discussion of loneliness.

The trajectory of these conversations over time is shown in Figure 5.7. Posts relating to feelings during lockdown peak in mid-late May, which was mental health awareness week. Posts about the pressure of the pandemic, loneliness and social interaction peak in mid-March, as lockdown started, and peak again in mid-June. Again, this reduction in posts corresponds with the relaxation of social distancing rules.

Figure 5.7: Volume of social media posts related to life under lockdown, over time



Base: 10,067 social media posts captured between 01/02/20 – 30/06/20

5.2.3 Impact on mental health and pressure of the pandemic

Posts relating to the pressure of the pandemic mentioned feeling increasingly overwhelmed or anxious over time. This often related to the pace or volume of change, or future uncertainty. Many posts stated that this was a natural feeling to express at this time or displayed sympathy that everyone would be feeling some pressure in different ways. Others highlighted specific challenges that appeared to exacerbate the pressure of the pandemic, for example constant news bulletins.

Social media posts also highlighted challenges that lockdown and the pandemic more broadly placed on specific sectors of society. One frequently cited example was pregnant women and new parents. Social media posts raised awareness of how the challenges associated with new parenthood – including postnatal depression, loneliness, and tiredness - would be exacerbated by lockdown. Hospitals offered reassurances to pregnant women that they were taking necessary precautions to keep them and their babies safe.

Another frequently mentioned group were those with cancer or other conditions requiring surgery. There were concerns that delays to operations would lead to worse outcomes, that the pandemic would lead to poorer mental health among these groups.

Social media users also cited concerns that the lockdown restrictions would have a disproportionate impact on individuals with learning disabilities, autistic spectrum disorder or attention deficit hyperactivity disorder (ADHD). The 14 April announcement that the lockdown restrictions were relaxed specifically for these groups was welcomed by some social media users, who expressed relief that they would be better able to look after individuals in their care.

Figure 5.8: Illustrative quotes relating to pressures of the pandemic

“ During this situation we're in with Covid19/quarantine. Let's not forget the people who are struggling with cancer, being homeless, hunger, domestic violence, postpartum depression.
Pressure of pandemic, Twitter, April

“ Its so terrifying! Childbirth is scary enough as it is, let alone if the hospitals are struggling and full of Coronavirus. I'm also anxious about getting childcare for our other children so my partner can actually be at the birth.
Pressure of pandemic, Health Unlocked, March

“ There will be suicides because of lockdown, as well as permanent harm to the mental health of many. Saying 'stay inside or people will die' isn't enough.
Pressure of pandemic, Urban75 Forum, April

“ Thousands of cancer, heart, liver, kidney patients have had their diagnosis and their treatment pushed back. Operations aren't currently happening.
Pressure of pandemic, Facebook, April

“ Extending the lockdown further will not have any beneficial effects on the country, its population or the economy.... there has been a massive rise in mental health issues, suicides and domestic abuse because of lockdown..
Pressure of pandemic, Facebook, April

“ Children/adolescents with disabilities (including autism, learning disabilities and ADHD) may find the impact of coronavirus more difficult. Changes must be explained in order to manage any anxiety and distress.
Sad, angry, anxious, stressed, Twitter, June

5.2.4 Affected daily lives

Posts relating to the effect of lockdown on daily life covered a range of factors related to lockdown. Again, many of these related to the impact that social isolation had on the way that many social media users felt. Specifically, there were mentions of people who live alone (including those of working age), those who have difficult home lives, and those at risk of abuse.

There were many mentions of the impact of the lack of routine that the lockdown created. This was particularly a concern for those referring to existing mental health conditions, or those who were no longer working due to being furloughed or losing their jobs. The challenges to children of a lack of routine were also frequently mentioned.

In response to these challenges, many posts offered suggestions for how to maintain routine during lockdown. These included suggestions about the importance of eating, sleeping and exercising at regular intervals, as well as the importance of structuring days to maintain motivation.

Figure 5.9: Illustrative quotes relating to affected daily lives

“ Ah well, 3 weeks of loneliness begins. I understand why its necessary, but no-one cares about those who are by themselves and the impact it will have. Not everyone can play board games with housemates every night.

Help tackle loneliness, Digital Spy, March

“ My sleep schedule has been ruined - sometimes I can't sleep but am tired during the day so I take a nap. Then I wake up in the night because I napped. But it isn't too much of a problem because I'm not going anywhere. I'm finding it tricky to stay busy for a whole day without going out.

Awake at night, Twitter, April

“ I am worried my child will not have the type of carefree childhood I had, life is different. Schools are shut, people are wearing masks, we can't go to parks, church, festivals, shopping, parades, etc. etc. I'm just so sad for the kids living through this nightmare.

Affected daily lives, Lipstick Alley, April

“ I normally love to go and browse Waterstones for new books, or CD shops for the latest releases. I have mental health problems and being going to my favourite shops gave me a huge confidence boost. But now I can't do that anymore.

Affected daily lives, Digital Spy, April

“ Life is very unknown, and we as humans like to plan & predict. This isn't easy now. Routine is vital, & maintaining this is the best way to lower anxiety.

Affected daily lives, Twitter, April

5.2.5 Loneliness

The largest group of posts that specifically mentioned loneliness focused on how to support people who may be feeling lonely. This includes providing online services such as workshops and sharing tips to reduce feelings of loneliness.

Social media posts related to loneliness also focused on the needs of older people who may have had minimal social interaction before the lockdown and how best to support them throughout lockdown.

Figure 5.10: Illustrative quotes mentioning loneliness

“ #NationalLottery funded charity, @Rethink_ is helping young people tackle loneliness during #COVID19 with mental health & wellbeing online workshops. #LetsTalkLoneliness

Help tackle loneliness, Twitter, June

“ Simple tips and good advice for #LonelinessAwarenessWeek RT @NHSuk: This week is #LonelinessAwarenessWeek, and Every Mind Matters has put together some tips to help you if you're feeling lonely during the coronavirus / #EveryMindMatters #LetsTalkLoneliness

Help tackle loneliness, Twitter, June

“ For so many of your elderly/disabled neighbours, #lockdown is just like any other day. Break the cycle of loneliness - say hello! Social distancing doesn't mean emotional distancing. A conversation through a window can make all the difference.

Help tackle loneliness, Twitter, June

“ Loneliness and isolation can have a negative impact on your mental health. If you know someone who is alone during lockdown, why not reach out and spread some #CoronavirusKindness

Help tackle loneliness, Facebook, March

“ It is difficult once you start feeling lonely. Try not to focus on that and keep looking for positives. Can anyone post you letters or magazines? Can you video call loved ones? Do you have any hobbies or puzzles you could do?

Help tackle loneliness, Diabetes UK, March

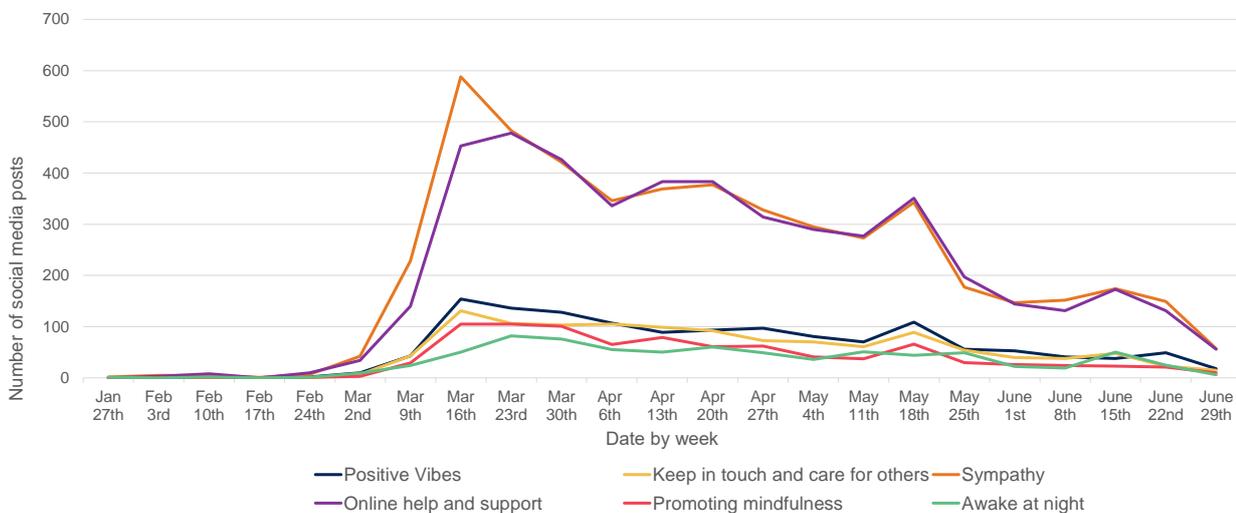
The calls on social media to help tackle loneliness are merited when triangulated with other research from those who were in receipt of care. For example, research from Alzheimer's Society identifies the significant impact of lockdown on the mental health of people living with dementia and their carers. Many felt more lonely, with significant stretches between face to face contact or meaningful conversations.

The main factors which tie these topics together are recognition and empathy with negative COVID-19-related issues that others are facing, and posting about this or sharing resourcing and ideas of how best to cope as a result. Sympathy and promotion of mindfulness were linked to those experiencing anxiety, depression or increased stress due to the social isolation and uncertainty; whilst promotion of efforts to keep in touch and caring for others focused on loneliness. Positive vibes included posts intended to motivate others to keep going despite difficulties faced, for example, identifying smaller things to be grateful for daily. Tips promoting online help and support involved sharing resources to cope with a range of stressors; these included sharing tips on coping with day-to-day changes, such as working from home to severe anxiety.

As Figure 5.12 below shows, posts around keeping positive peaked between the 16th and 22nd March, broadly in line with the overall spikes in conversation relating to coronavirus. Over the course of the first six months of the pandemic, expression of sympathy for others declined as its negative effects became more normalised and widespread. However, keeping in touch and caring for others, and spreading positive vibes remained relatively consistent, tapering off gently. This might suggest that, although smaller topics overall, there is a sense of community and wider support networks that have emerged and lasted throughout the pandemic.

The promotion of coping strategies and help and support remained relatively stable over the middle months of the pandemic, peaking throughout the second half of March and then decreasing gradually. This suggests that online help and support was crucial to many across this period.

Figure 5.12: Volume of posts related to keeping positive and coping strategies



Base: 10,067 social media posts captured between 01/02/20 – 30/06/20

5.3.3 Keeping positive

Sympathy is the most discussed topic within this cluster, and hosts the greatest peaks over the period, particularly in the early stages of lockdown. Conversation centres around sympathising with others' experiences and offering support, experience-based advice and solutions. This is most often regarding mental health issues, such as anxiety and depression, and stress due to the isolation and uncertainty.

Staying connected and supporting others remained a consistent topic of discussion over the period. Reducing loneliness in others was the key issue within this, with many ensuring they made regular

Figure 5.16: Illustrative quotes relating to online help and support

“ Our counselling team are pulling together resources to help people cope with #CoronavirusLockdownUK
Online help, Twitter, April

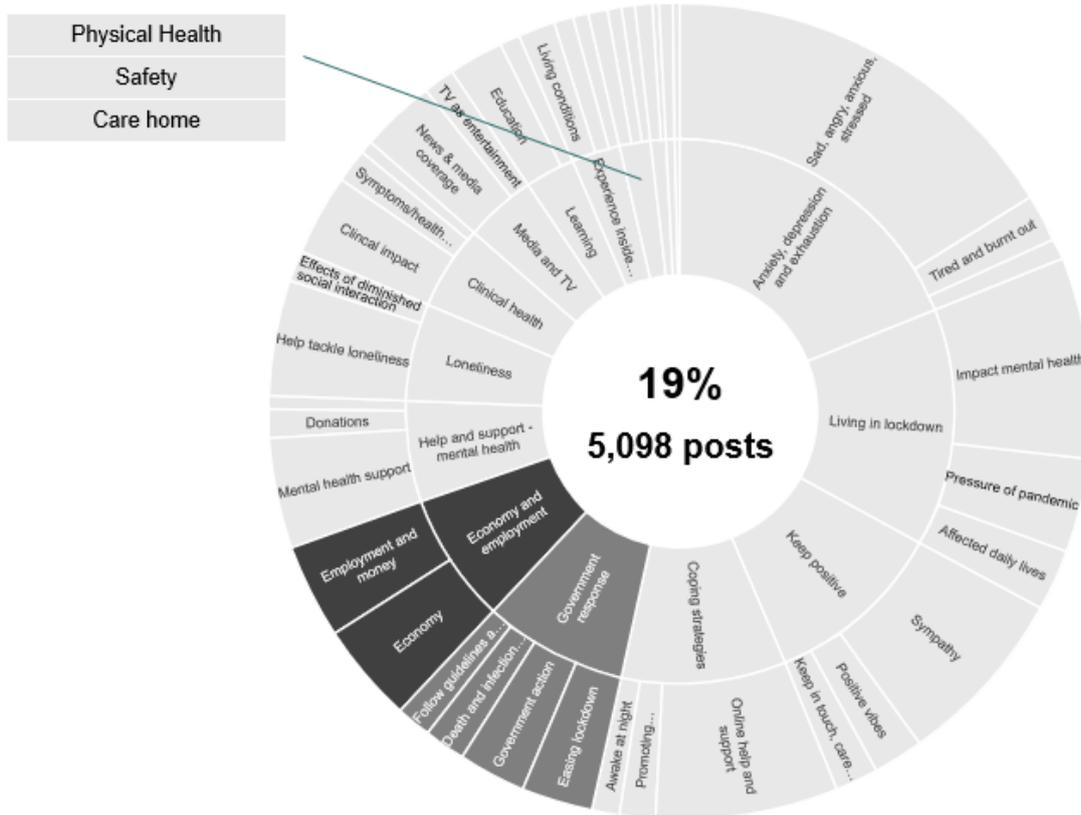
“ There are things you can do to take care of your #mentalhealth. Read our #TuesdayTip on how to cope with COVID-19 stress
Online help, Twitter, April

“ Turn off the TV, get out in to nature and the environment, practice #mindfulness, keep to a routine, and avoid stress
Online help, Twitter, May

“ People around the world are facing unprecedented stress and anxiety, from financial worries and anxiety, to loneliness amid social distancing, and a lack of sleep
Online help, Twitter, May

5.4 Theme 4: Impact of government response

Figure 5.17: Discussion of impact of government response within Topic Wheel



5.4.2 Overview – volume and trends over time

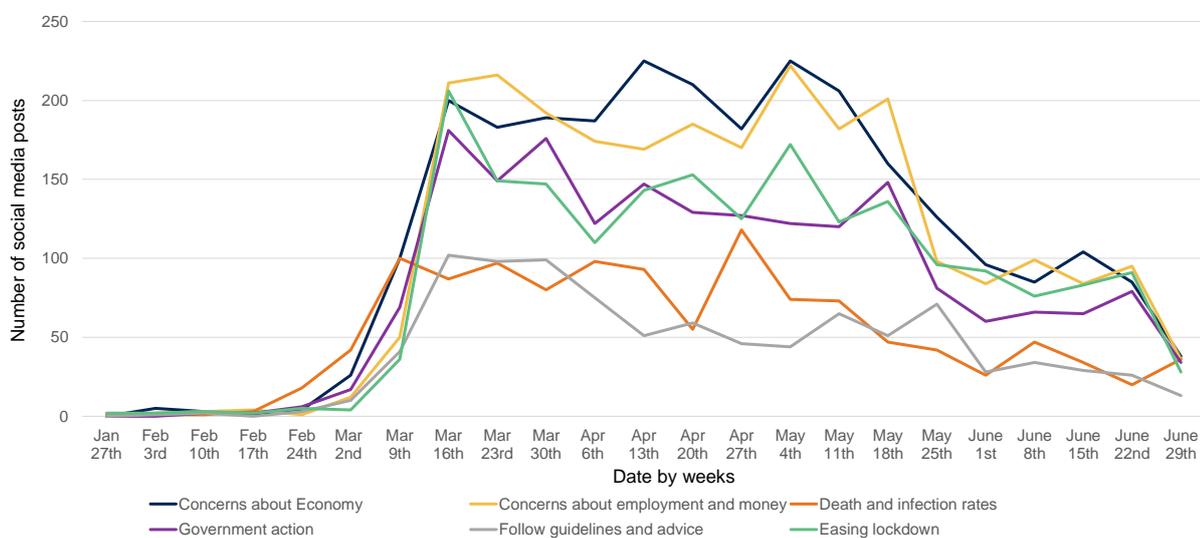
Posts discussing the implications of the government response to the COVID-19 pandemic account for 19% of overall conversation. Key topics within this theme include discussion of easing lockdown (7%), and the impact on personal finances and employment (10%), or the wider economy (9%)

A common factor that connects these topics of conversation is the impact on mental health as a by-product of government policy and action; yet the nature of and concerns raised within these discussions

evolve over time. For example, conversation around death and infection rates began as fear of the virus itself before becoming a more general fear of the rise in issues caused by the lockdown itself, such as a rise in depression and suicide rates. Furthermore, conversation relating to economy and employment peaks as the government first announced national lockdown measures, with initial concern relating to the immediate impact on business and jobs and the impact of those placed on furlough and working from home. This switches over time to a longer-term discussion about the perceived trade-off between the economy and health as lockdown is extended, and dies down after the government ends speculation about whether or not it will extend the furlough scheme.

In contrast to the wider corpus of social media posts relating to the coronavirus pandemic (which slowly decline from a peak in mid-March), the volume of conversation relating to government handling of the pandemic (and particularly in relation to the economy) is sustained from the middle of March through to the middle of May.

Figure 5.18: Volume of posts relating to the Government response



5.4.3 Economy and easing of lockdown

Posts in these topics largely debated whether or when the government should ease lockdown to support business and the wider economy. A key intervention appears to be media coverage in early May which reported the increased suicide risk attached to the pandemic, including relating to job security and finances.

Though some posts commented only on the adherence relating to lockdown, as restrictions continued, comments on social media captured the often-polarised opinion across the country as to whether the government's priority should be to minimise deaths, or to mitigate the economic impact of the pandemic. The quotes below are illustrative of the exchanges between social media users, and the strength of feeling associated with both perspectives.¹⁶

¹⁶ It should be noted that the debate that ensued on social media reflects the views of skewed proportion of the population – noting the younger, more affluent profile of Twitter users. This may help explain the visibility of arguments promoting economic recovery over health concerns.

Figure 5.19: Illustrative quotes relating to economy and lockdown

“ COVID-19 has increased suicide risk because of isolation, anxiety, job/business loss, financial crisis, so suicides are likely to rise over coming months – unless we invest more in Prevention!
Economy and lockdown, Twitter, May

“ I hope everybody stays safe and uses their common sense once lockdown is eased.
Economy and lockdown, Facebook, May

“ I've noticed those calling for further lockdown are not the ones facing mental health issues, social isolation, poverty, business collapse, despair, and relationship breakdown. You have no skin in game.
Economy and lockdown, Twitter, May

“ Keeping the lockdown is the right decision, but there are many people out there who are not coping - through destitution, a lack of access to essential goods, mental health deterioration and many other reasons.
Economy and lockdown, Twitter, April

“ We are behind the rest of world because the Govt put the economy before people, and they think exceptionalism is enough.
Economy and lockdown, Twitter, March

5.4.4 Employment and money

A significant proportion of conversation in this topic related to workforce pressures. This included praise for how hard frontline ‘key workers’ were working and changing working practices for those working remotely. To this end, social media provided a forum for advice and support to employers on how best to support their employees through this difficult time. Advice and support came from a wide variety of sources, including from government, private sector human resources companies, local authorities and charities, covering topics such as mental health, efficiency when working from home, and supporting vulnerable employees back in to the workplace.

One of the lines of support that received attention was the launch of an app for adult social care workers in England, which provided coronavirus information and guidance. Several posts also used Mental Health Awareness Week in late May as a springboard for calls to action.

A related but separate discussion focused on the financial concerns of social media users. Those on furlough were worried about the future of their job, others were concerned about loss of income and the impact on their ability to pay bills and rent. All of these issues had the potential to lead to greater anxiety and stress.

Figure 5.20: Illustrative quotes relating to employment and money

“*Knowing how to approach COVID-19 as an employer will help relieve anxiety among employees. Refer to the government advice for employers #BusinessAdvice #Covid19UK*
Employment and money, Twitter, March

“*With more people working from home, how can employers ensure the wellbeing and support mental health? Listen to our podcast to find out more*
Employment and money, Twitter, May

“*I am surprised at the attitudes of people, key workers are stressed and worried about getting covid and spreading it, those on furlough are stressed about spreading the virus and losing their job, so everyone has their own thing happening like childcare, money worries etc.*
Employment and money, Facebook, May

5.4.5 Government action and guidance

Conversation around following government advice is mixed. A large proportion of conversation encourages others to stay calm and follow government guidelines to keep everybody safe and alleviate stress, this is particularly prevalent in the early days of the pandemic. However, some social media users begin to criticise government guidance as the situation progresses, questioning the logic of the rules (e.g. keeping two meters apart) and whether following government guidance at the risk of exacerbating mental health problems was worth it.

Some comments go further and call for greater action to be taken by the government and public sector organisations to address long-term effects of the pandemic, notably the increased risk of mental health issues. There is also conversation criticising government handling of various issues, from questioning the criteria for who to include on the shielded list to the anticipated effects on the UK economy. One in five posts discussing government action express negative sentiment (20%), with a minority of positive posts (5%).

Figure 5.21: Illustrative quotes relating to government action and guidance

“*We are asking the government to work to establish a Mental Health Renewal plan in response to COVID-19.*
Government action and guidance, Twitter, June

“*Due to the incompetent response of the Prime Minister and the government, there are 50,000+ deaths and thousands seriously ill*
Government action and guidance, Twitter, June

“*Follow the guidance and we will see a light at the end of the tunnel. Follow the advice.*
Government action and guidance, Twitter, March

“*No one believes the COVID-19 lies and only complete sheep wear masks and follow guidance.*
Government action and guidance, Twitter, June

5.4.6 Death and infection rates

Discussion around death tolls and rates of infection, and the potential effect of these on mental health is prevalent throughout the pandemic. While the discussion centres around fear of the virus itself in the early stages of the pandemic, these worries spread to the increased potential for deaths caused by issues other than the virus itself. This includes concern about issues such as suicide due to the potential impact of lockdown on mental health. There were also calls for more government support to prevent these additional issues from causing further deaths, relating to both mental and physical health.

Figure 5.22: Illustrative quotes related to death and infection rates

“ We are about to have increases in cancer deaths, suicides, care home deaths - all in higher numbers and affecting the young more than any excess deaths realted to COVID.
Death toll, Twitter, June

“ Highest death toll in Europe, the economic impact of a longer lockdown and an increase in social isolation, and mental health problems.
Death toll, Twitter, May

5.5 Conclusion

Despite the distressing situation that many members of the public found themselves in during the pandemic, there are a number of positives to take from the lived experience of the pandemic as told on social media. Firstly, many social media users were open to talking about their experiences, their feelings and emotions; this gives us invaluable insight in to the different experience of mental health during the pandemic, and helps provide an understanding of how the actions of government in response to the pandemic may interlink with poor mental health outcomes. Secondly, it demonstrates the wave of informal and formal support that was ready and available from the very early stages of the pandemic. Mental health was a significant part of the equation from the start.

However, we should be wary of suggesting that the same challenges were experienced, or that the same benefits were afforded to those who do not use social media. The comments and posts do point to services that were readily available offline, and to enthusiasm to help elderly members of the public that might feel particularly isolated. Yet, it is important to note that social media is not reflective of all groups of the public. The speed and ease of access make promotion of advice and services on social media particularly appealing; further research is needed to explore whether there was a digital divide in access to help and support relating to mental health.

6 Experience of physical health

This chapter takes inspiration from the initial findings from the topic wheel and provides an overview of additional analysis conducted to explore implications on physical health in more detail. To some extent, much of the conversation relating to coronavirus on social media could be categorised as relating to physical health – for example discussion of symptoms, how to prevent infection, or of death and recovery. The intention in this report however, has been to consider the wider implications of the pandemic on the ability of the public to keep physically healthy.

Key findings

The initial data collection and topic modelling analysis underrepresented a wider conversation relating to the implications for physical health on social media. Much of the spikes in this wider conversation were driven by key announcements relating to restrictions on exercise, and the publication of studies that explored the risk factors of COVID-19 associated with risky health behaviours and obesity.

Social media provided a positive communications tools to help create momentum for initiatives to keep active – these include PE lessons from Joe Wicks and the Couch To 5k campaign. However, discussion of exercise was often framed within the context of users needing to adhere to new lockdown restrictions; furthermore, positive initiatives often failed to stress the benefits of staying active. This is further evident in the comparatively small discussion of risks associated with obesity, or efforts to raise awareness of improving physical health as a key tool to help fight against the coronavirus pandemic.

6.1 Initial analysis from topic model

Compared to the wealth and variety of conversation relating to the topic of mental health, only 4% of all social media posts collected through the initial topic modelling were related to physical health. Within this discussion, topics were evenly split, with mentions of weight comprising 2% of the conversion, whilst promoting better health and discussions around drinking, smoking and drugs making up a further 1% each.

The themes described within the topic model mainly captured social media users using the lockdown and pandemic more generally as an opportunity to improve physical fitness and to lose weight. This also contained messages from the NHS promoting better health and weight loss. In relation to smoking, drinking and drugs, posts captured a focus on the dangers of increased drinking during lockdown. This included the potential use of alcohol as a coping mechanism with loneliness, depression, anxiety or stress.

An initial hypothesis from these small volumes might be that the challenges and opportunities relating to physical health were not a key topic of discussion on social media. However, further analysis would suggest that this underrepresents the conversation relating to implications for physical health. This is in part because the initial query was too restrictive (focussing on weight, fitness and diet), but also because many posts were focused on topics that didn't directly discuss the implications or outcomes for physical health (for example gaining weight), instead focusing on positive initiatives that promoted improved physical health (for example, ways to 'stay active' or 'keep fit' during lockdown).

One of the benefits of using social media data for research purposes is that the data collection process can continue to be refined, even late on in analysis. Having noticed the absence of key initiatives or

discussion of key policy announcements, and inspired by the early findings from the conversation identified in the topic model, further data was collected to explore four key topics in relation to physical health¹⁷:

1. Impact on exercise and efforts to keep fit
2. Impact on access to sports facilities
3. Impact on risky behaviours
4. Discussion of obesity

6.2 Overview of additional analysis

Together, the four topics of investigation generated 297,000 posts. Though this did capture some less relevant content relating to the restart of competitive sport and use of alcohol gel¹⁸, it verifies earlier assumptions that discussion of implications on physical health were underrepresented within the topic wheel. As with data collected elsewhere across the project, posts captured from social media were skewed towards discussion on Twitter – accounting for 75% of conversation.

Within the four topics of investigation, the largest portion of discussion related to ‘exercise’ and efforts to ‘keep fit’ (accounting for 124,600 posts). As shown in Figure 6.1, this was driven largely by key policy announcements relating to restrictions on exercise during lockdown. Spikes in other topics were also event driven, either in reaction to media commentary or the publication of studies which discussed the risk factors associated with catching or suffering badly from COVID-19.

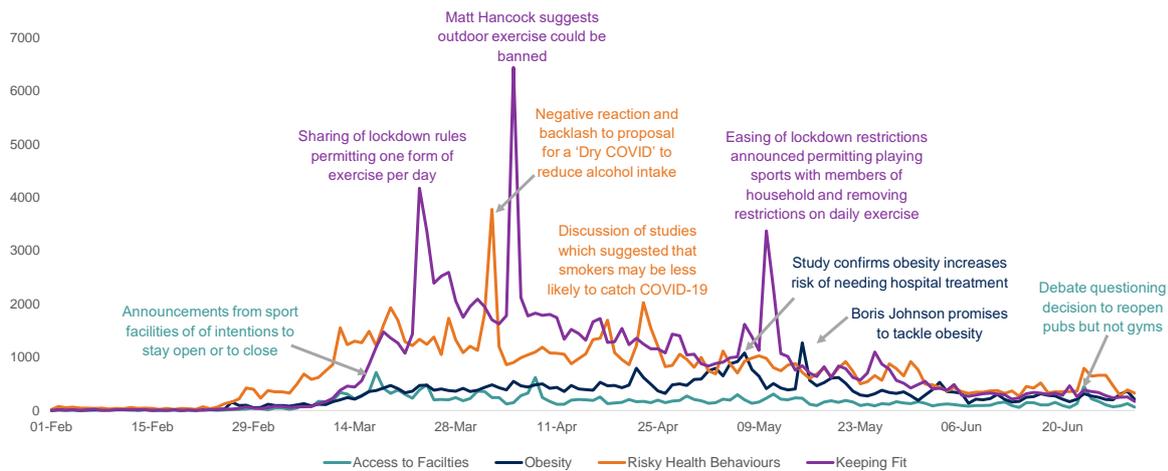
The timeline also shows the relatively low, and late, level of conversation linking coronavirus with obesity. This topic represented 48,100 posts overall, and did not spike until May following publication of a study by University of Glasgow showing that obesity definitively increases the risk of needing hospital treatment for COVID-19.

Social media also provided a platform for local sports facilities to keep in touch with users, alerting them to their status, when they might be reopening, and seeking to advertise their services once open again. This reflected a smaller continuous bubble of conversation, accounting for 22,900 posts.

¹⁷ The search queries for each of these topics can be found in the appendix.

¹⁸ See section 3 for more detail on method. The additional analysis conducted here did not benefit from additional cleaning.

Figure 6.1: Overview of key spikes in conversation relating to implications for physical health



Base: Social media posts relating to physical health in the UK, between 01 Feb 2020 and 30 June 2020

6.3 Review of key topics

6.3.1 Impact on exercise and efforts to keep fit

Discussion relating to exercise can broadly be grouped into two categories. The first is discussion of the impact of lockdown restrictions on the nation's ability to undertake exercise – this included the closure of sports facilities and limitations on how often and where people can exercise. This was initially restricted to one form of exercise a day, within walking distance from your home.

The initial focus on social media was to reinforce the message to stay at home and only undertake one hour of exercise. Posts with the highest level of interactions at this stage included messages from Nicola Sturgeon, Piers Morgan and the BBC – these generated 49,000, 33,000 and 32,000 interactions respectively. The conversation quickly morphed into attempts to clarify how and when the public could take exercise. As shown in Figure 6.2 below, accounts from police forces were among the most prevalent and visible at this stage. Up to this point, discussion of exercise was a by-product of messages that sought to enforce social distancing guidelines and communications. Interaction with phrases such as 'help' related more to requests to 'help keep the nation safe' rather than 'offering help and advice on how to stay fit and active.'

The 'privilege' of being permitted to undertake exercise once a day was a sensitive topic, demonstrated by the volume of reaction to Matt Hancock's suggestion that this could be removed if social distancing rules were not observed – this followed coverage of crowded places as people sought to enjoy a heatwave. Confusion among social media users was further evident in early May, the third and final spike of discussion, with many posts questioning the advice to ease restrictions on exercise or asking for clarification over what was and wasn't permissible.

Figure 6.2: Illustrative quotes relating to policy of lockdown and implications for exercise and keeping fit

“ PLEASESTAYATHOME- except for these limited reasons: -To shop for basic necessities -For one form of exercise a day -For medical/care needs, or to help a vulnerable person -To travel to and from work but only if it is a necessity. LIVES REALLY DO DEPEND ON IT. #coronavirus
Exercise, Nicola Sturgeon, Twitter, March

“ I still don't think people quite understand what is about to happen in the UK (or the US). Stay home to save lives & observe strict social distancing if you go out for exercise or essentials. Don't be a selfish, reckless moron. This is going to get very nasty very soon.
Exercise, Piers Morgan, Twitter, March

“ There's been some confusion around whether people can visit and exercise in the Staffordshire countryside, including Cannock Chase, the Roaches and other country parks. We're asking you not to visit these areas and to stay close to home to exercise for the daily exercise, as per the government guidelines on social distancing. We understand that there's a small number of people who live within these immediate areas who may continue to walk dogs and exercise, but cars should only be used for essential journeys and not to travel somewhere to exercise. We all need to work together to prevent the spread of Covid-19, protect the NHS and save lives. Thank you for your support in staying at home and avoiding unnecessary travel. The beautiful Staffordshire countryside will still be there in a few weeks for us all to enjoy
Exercise, Staffordshire Police, Facebook, March

“ Don't threaten to ban outdoor exercise just do it. We have been in lockdown since March and everyday people break lockdown. We MUST take further action in order to save lives.
Exercise, Twitter, April

“ #Coronavirus: "If you don't want us to have to take the step to ban exercise of all forms outside of your own home then you've got to follow the rules" says Health Secretary Matt Hancock #Marr <https://www.bbc.co.uk/news/uk-52162490>
Exercise, BBC Politics, Twitter, April

The second category of discussion concentrated on efforts to improve fitness and keep people active. Two good examples of these were the high-profile initiatives to take part in virtual PE lessons with Joe Wicks, and to take part in the 'Couch to 5k' challenge.

Both social media and google search data point to an initial spike in conversation about taking part in PE lessons hosted by Joe Wicks during the first two weeks of lockdown, when the public were seeking new ways of keeping themselves and their children fit. High interaction posts over this period were either by Joe Wicks, discussing upcoming sessions/raising awareness, or by those enjoying the sessions themselves, or with their children. The initial post by Joe Wicks on Facebook asking people to promote his sessions (in Figure 6.3) gained 277,000 interactions (likes or shares) – this demonstrates the power of social media in promoting positive initiatives for exercise. Furthermore, search terms over this period include breakout terms like 'joe wicks seniors,' suggesting a broad audience.

However, it is also important to note that discussion of PE lessons with Joe Wicks was very pragmatic. It was common for social media users to post about the structure it gave to their day, especially those home schooling – Joe Wicks described himself as the 'nation's PE teacher'. There was little direct conversation about the overall value and purpose of keeping fit during the pandemic.

In contrast to discussion about PE sessions with Joe Wicks, which declined over time, conversations and search activity relating to 'Couch to 5k' grew over time. As shown in Figure 6.4, social and search data on 'Couch to 5k' increases over the pandemic period, with conversation increasing around relaxations in lockdown exercise restrictions. The majority of high interaction posts over this period on social media consist of raising awareness and sharing experiences with Couch to 5k, particularly in an effort to get others exercising post-lockdown. Search terms over this period include breakout terms like 'what to do after couch to 5k,' suggesting both that the lockdown period had given people enough time to complete the programme, and that it had succeeded in creating a legacy for increased appetite to be active once completing the challenge.

Figure 6.3: Illustrative quotes relating to Joe Wicks PE lessons and Couch to 5k

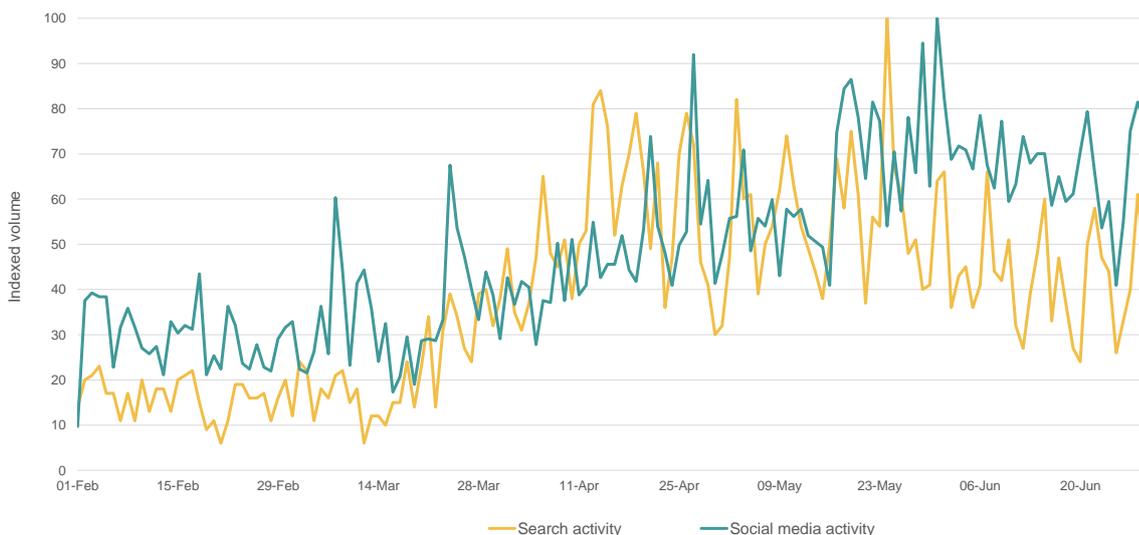
“ I produce so much free fitness content online and I never ask for anything in return but today I need your help 🙏 I need your support to help spread this online so as many parents as possible know that this is an option for them to use next week. I am holding LIVE PE lessons at 9am Monday to Friday on my YouTube channel for children of all ages. All I need is for you to screen shot this and post it on your wall, story, Twitter, Facebook, WhatsApp, linked in and anywhere else. Parents are going to be under pressure next week and for 30 minutes a day I can take over and inspire and energise the kids to get active, bounce around and have fun. You can even join in with the kids. Please share away. This is going to help millions of children and parents feel happier for 30 minutes and beyond everyday ☺️❤️
Initiatives, Joe Wicks, Twitter, March

“ Fun PE lessons for the kids! It's a #PEwithJoe at 9am every morning on YouTube! Thanks @thebodycoach #joewicks #schoolclosuresuk #LockdownNow
Initiatives, Twitter, March

“ Want to get fit during lockdown? #CouchTo5K could be for you. The app will get you running 5K in nine weeks (even if you've never run before)
Initiatives, Twitter, May

“ I went for a run after some time off! I can still do 5k - at least I can thank coronavirus for one thing! #lockdownrunner #couchto5k
Initiatives, Twitter, June

Figure 6.4: Overview of social media discussion and Google Trends search activity relating to ‘Couch to 5k’



Base: Google searches of 'Couch to 5k', in the UK / Social media posts relating to 'Couch to 5k' in the UK, between 01 Feb 2020 and 30 June 2020

Source: Ipsos MORI analysis of Google Trends/Synthesio data

6.3.2 Impact on sport facilities

One of the ways in which the response to the pandemic had a direct impact on physical health was in the closure of sports facilities. This topic represented a small but steady discussion on social media. The largest peak in conversation was on March 17th and was caused by announcements released by various sports facilities, either reassuring the public that they were staying open, or announcing plans to close in light of government announcements. The decision to close sports facilities was largely supported until the latter stages of the pandemic, where some social media users questioned the decision to open pubs before sports facilities.

As lockdown eased a few months later, social media provided the same platform to organisations to announce their intentions to return to action and confirm how they would still be adhering to social distancing restrictions. Throughout the first six months of the pandemic in the UK, social media was a valuable communication tool for small and large sports facilities and clubs who had to remain agile.

After a few weeks of lockdown, users took to social media to raise concerns about funding. This included a number of high-volume posts around challenges faced by sports clubs, as well as support provided through funding, causing a peak in early April. The most significant of which was the support fund announced by Sport England. High interaction posts over this period typically refer to the fund, either raising awareness around options available to clubs, or clubs sharing funding received. Google Trends search data shows that interest in the fund was sustained over the course of the pandemic. Search terms over this period reflect this too, with ‘sport England community emergency fund’ being a breakout term, followed by ‘sport England grants’ and ‘sport England community asset fund’.

6.3.3 Impact on risky health behaviours

Discussion of the implications of the coronavirus pandemic on risky health behaviours such as drink and drugs was dominated less by discussion of personal experience and more by relevant news coverage.

The largest peak in conversation involves the discussion that occurred on April 2nd with high interaction posts consisting of negative reactions to an article published in The Independent suggesting a Dry COVID by closing off licences to help the nation reduce its alcohol intake. There was another peak in conversation on April 23rd discussing studies which suggested that smokers may be less likely to catch COVID-19. This led to debate around the findings, and reports that Nicotine patches were to be tested on patients. There was also some discussion and sharing of articles which examined the policies in South Africa to ban cigarettes and alcohol.

Furthermore, social media provided a platform for both the spreading of misinformation, and for attempts to try and counter incorrect health advice. The included prominent posts by media outlets such as the BBC which tried to fact check some of the theories circulating online, and coverage of stories from outside of the UK where members of the public had been taken ill for following poor health advice.¹⁹ This again demonstrates the challenges present in the key battleground of the ‘infodemic’, discussed further in Report 2.

Figure 6.5: Illustrative quotes relating to risky health behaviours

“
Is this the hill you want to die on?
https://www.independent.co.uk/voices/coronavirus-lockdown-off-licence-alcohol-alcoholism-a9440011.html?utm_term=Autofeed&utm_medium=Social&utm_source=Twitter#Echobox=1585773762
Risky health behaviours, Twitter, April

“
X Garlic, X Miracle minerals, X Drinkable silver, X Drinking water every 15 minutes, X avoiding ice cream. The fake coronavirus health advice you should ignore.
Risky health behaviours, BBC, Facebook, March

“
‘Bizarrely’ strong evidence suggests smoking may protect against Coronavirus
Risky health behaviours, Daily Mail, Facebook, April

“
Who had “take up smoking to avoid COVID-19” in 2020 Dystopia Bingo?
Risky health behaviours, Twitter, April

6.3.4 Discussion of obesity

Compared to widespread promotion to ‘stay active’ and ‘keep fit’ there was less conversation on social media which directly called for action to be taken to tackle obesity. This appeared to be a slow burning issue. Although there is evidence of users trying to raise awareness of the link between obesity and

¹⁹ Such as dying from ingesting methanol in Iran. <https://www.aljazeera.com/news/2020/04/iran-700-dead-drinking-alcohol-cure-coronavirus-200427163529629.html>

increased health risks associated with coronavirus in March and April, these posts failed to gain early traction.

The first peak in conversation on April 22nd occurred when a consignment of Krispy Kreme doughnuts were delivered to a hospital for staff, leading a cardiologist to post his disapproval publicly due to its contribution to obesity and therefore COVID-19 death rates. This led to ‘retaliation’ online from members of the medical/nursing profession and debate amongst the public about care for frontline staff. The second peak on May 7th was caused by a study conducted by the University of Glasgow showing that obesity definitively increases the risk of needing hospital treatment for COVID-19 causing online debate.

The largest peak in conversation around weight gain and obesity occurred on May 15th when Boris Johnson announced that they would tackle the problem of obesity using a more interventionist approach in response to COVID-19. However, as illustrated in Figure 6.1 above, these generated only a fraction of the interest in conversation about lockdown and exercise.

Figure 6.6: Illustrative quotes relating to obesity

“As predicted, UK data shows nearly two thirds in critical care are overweight or obese. 37% UNDER 60! Once this is over, the government must tighten up industry food guidelines that’ are killing people.
Obesity, Twitter, March

“Being obese doubles the risk of requiring hospital treatment, according to data collected from hundreds of thousands of people in the UK.
Obesity, Twitter, May

“Absolutely disgraceful. Feeding junk food to already overweight and obese #NHS staff? I will forward this to CEO of @NHSEngland
Simon Stevens personally and I can assure you he won’t be impressed especially as THESE foods a root cause of increased death rates from #COVID19
Obesity, Twitter, April

“#Boris Johnson has promised to tackle obesity - after contributing his overweight condition as the reason he suffered so badly with #Covid19.
Obesity, Twitter, July

6.4 Conclusion

The implications of the pandemic on physical health were evident from the very early announcements to enforce a lockdown. In many cases, social media platforms played a positive role in promoting initiatives to improve physical health and fitness, generating a huge spike, and sustained interest and togetherness between groups of social media users seeking to stay active.

However, analysis of social media data also points to a missed opportunity. Much of the early discussion of exercise focused on what you shouldn’t do, rather than what you should and can do; attempts to get the public engaged in PE lessons, whilst important for children and young people, were not targeted at the group of the population who might most have benefited from daily exercise given the risk factors associated with the pandemic; and there was little scrutiny and debate about the need to tackle obesity. Encouragement to improve physical health was not part of the initial strategy to help fight COVID-19, despite early evidence that obesity led to worse health outcomes. The obesity strategy released by the government was published outside of the window of the data collected for this research; this in and of itself suggests that more could have been done earlier to raise awareness of the risks of poor physical health in the battle to overcome the virus.

Appendix

The social media queries for the four additional topics explored relating to physical health were as follows:

Exercise and keeping fit

(((((keep OR get OR stay OR maintain OR be OR increase) NEAR/2 (fit OR fitness OR active)) OR ("fitness level" OR "fitness levels" OR exercise OR exercising OR workout OR "fitness class" OR "PE class" OR treadmill OR yoga OR pilates)) AND (("social isolation" OR isolation OR "social distancing" OR lockdown OR furlough OR quarantine OR pandemic OR wuhanvirus* OR coronavirus* OR novelcorona* OR 2019?nCoV OR "2019 nCoV" OR 2019ncov OR covid19* OR "covid 19" OR "covid?19" OR covid) OR ((wuhan OR corona OR "cv-19" OR cv19) NEAR (virus OR disease)))) NOT (right OR caution OR restraint OR authority OR how))

Risky health behaviours

(((((drug OR drugs) NEAR/2 (addict OR addiction)) OR (alcoholic OR alcoholism OR drinking OR drunk OR alcohol OR smoke OR smoking OR nicotine OR tobacco OR cig OR cigarette)) AND (("social isolation" OR isolation OR "social distancing" OR lockdown OR furlough OR quarantine OR pandemic OR wuhanvirus* OR coronavirus* OR novelcorona* OR 2019?nCoV OR "2019 nCoV" OR 2019ncov OR covid19* OR "covid 19" OR "covid?19" OR covid) OR ((wuhan OR corona OR "cv-19" OR cv19) NEAR (virus OR disease)))) NOT (bleach OR isopropyl OR disinfectant OR cleaner))

Obesity

((obesity OR obese OR diet* OR ((weight OR fat) NEAR/2 (gain OR gained OR "put on"))) AND (("social isolation" OR isolation OR "social distancing" OR lockdown OR furlough OR quarantine OR pandemic OR wuhanvirus* OR coronavirus* OR novelcorona* OR 2019?nCoV OR "2019 nCoV" OR 2019ncov OR covid19* OR "covid 19" OR "covid?19" OR covid) OR ((wuhan OR corona OR "cv-19" OR cv19) NEAR (virus OR disease))))

Sports facilities

(((((Sports OR sport OR gym OR pitch OR court OR "sport facility" OR "sports facilities" OR "sport facilities" OR "sports facility" OR ((our OR my OR grassroots) NEAR/2 ((football OR cricket OR basketball OR rugby OR golf OR tennis OR netball) AND (team OR club)))) AND (open OR reopen OR restart OR start OR closed OR shut OR fund OR funding)) AND (("social isolation" OR isolation OR "social distancing" OR lockdown OR furlough OR quarantine OR pandemic OR wuhanvirus* OR coronavirus* OR novelcorona* OR 2019?nCoV OR "2019 nCoV" OR 2019ncov OR covid19* OR "covid 19" OR "covid?19" OR covid) OR ((wuhan OR corona OR "cv-19" OR cv19) NEAR (virus OR disease)))) NOT ("professional sport" OR "professional sports" OR sportsdirect OR "sports direct" OR "mike ashley" OR "closed doors" OR watch OR "skysports" OR "sky sports" OR "live sport" OR "live sports" OR "premier league" OR Bundesliga OR Chelsea OR "Manchester united" OR united OR Liverpool OR arsenal OR "Manchester city" OR Tottenham OR "leeds united" OR "Leicester city" OR everton OR "aston villa" OR "west ham" OR "Newcastle united" OR "wolves" OR brighton OR burnley OR "crystal palace" OR "Sheffield" OR Southampton OR "champions league" OR UCL OR "UEFA Champions league" OR "Europa league" OR "euro 2020" OR "euros" OR "UEL" OR "la liga" OR "serie a" OR "hundred" OR "100" OR "IPL" OR "Big bash" OR "Indian Premier League" OR "county championship" OR "ODI" OR "test match" OR "six nations" OR "Wimbledon" OR "French open" OR "roland garros" OR "queens" OR "T20" OR "twenty 20" OR EFL))

For more information

3 Thomas More Square
London
E1W 1YW

t: +44 (0)20 3059 5000

www.ipsos-mori.com
<http://twitter.com/IpsosMORI>

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