

Early warning signs of a mental health tsunami: Initial data insights from digital services providers during COVID-19

Becky Inkster, Ross O'Brien, Kate Niederhoffer, Niranjana Bidargaddi, Anne-Claire C. Stona, Glen Coppersmith, Amanda Towler, Philip Resnik, Rebecca Resnik, Maria Liakata, Helen Barker, Abdullahi A. Kawu, Karen Machin, Pattie P. Gonsalves, Sweta Pal, Swetha Ranganathan, John A. Naslund, Jo Robinson, Munmun De Choudhury, Glenn Melvin, Terry Hanley, Matthew Jackman, Ed Humpherson, Bo Wang, Bilal Mateen, Akeem Sule, Ezinne Nwankwo, Gabriela Pavarini, Josip Car, David Crepaz-Keay, Jasvinder Kandola, Hannah Stewart, Sarah Ticho, April C. Foreman, Emma Selby, Stan Shepherd, Karen L. Fortuna, Emachi Eneje, Tamra Huesers, Stephen Jeffreys, Mat Rawsthorne, Gerry Craigen, Kristina Barger, Neha Kumar, Sachin Pendse, Errin Riley, Elvira Perez Vallejos, Mark Embrett, Ernest Okyere-Twum, Kumar Jacob, Janak Gunatilleke, Mirantha Jayathilaka, Mariana Pinto da Costa, Sebastian Vollmer, Hoang D. Nguyen, Daniel A. Rosello, Valentino Megale, Jan D. Smeddinck, Rosanna Bellini, Craig A. DeLarge, Shivani Patel, Jerome Uriko-Kang, Tunde Olatunji, Vanessa Lalo, Robert Walker, Ann John, Diana Rayes, Marwa Elnahass, Karen Elliott, Lil Tonmyr, Andrew MacKenzie, Michael L. Birnbaum, Eric D. Caine, John Pestian, Dan Jacobson, Mike Sorter, Tracy Glauser, Michael Meaney, Vincent M. B. Silenzio, Jenny Edwards, Ricardo Araya, Chris Fitch, Jamie Evans, Kevin Telford, Peggy Bowden-Jones, John Torous, Thomas R. Insel

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Abstract

Background: The immediate impact of COVID-19 on mortality and morbidity has demonstrated the need for accurate and real time data monitoring and communication. Displacements to healthcare systems and economies may have created the perfect storm for an impending and enduring mental health crisis.

Objective: This project documents observations from multiple digital platforms during the COVID-19 crisis, especially digital mental health services.

Methods: We used email and social media campaigns to announce an urgent call for support. Digital mental health service providers (N=44), financial services providers (N=5) and other relevant digital data source providers (N=3) responded with quantitative and/or qualitative insights.

Results: This study demonstrates the complexity of mental health concerns as witnessed by digital providers. A recurring observation is that demand for digital mental health support has risen. The nature of this demand has also changed since COVID-19, notably with an increased presentation of anxiety and loneliness.

Conclusions: This study provides proof-of-concept of the viability of working with data insights from diverse digital services providers. We hope that these insights might help to form an epistemological foundation to stimulate future research. Looking ahead, we anticipate the need for a rigorous process to interpret insights from a wide variety of sources in order to monitor mental health needs.

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Original Manuscript

Article Title:

Early warning signs of a mental health tsunami: Initial data insights from digital services providers during COVID-19

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List of Digital Services Providers:

Ieso Digital Health, Babylon, Vala Health, Ooca, XenZone, SilverCloud Health, CBTclinics, Minddistrict, Big Health, Qare, Biobeats, Unmind, DistrACT, Alpha Health, Improving Access to Psychological Therapies (IAPT) NHS London Clinical Leads, ORCHA, Public Mental Health Services South Australia, Wysa, Owlle, Riliv, StopBlues, BeyondNow, Neurum Health, Spill, Mumsnet, The Mighty, TalkLife, Wisdo, MeeTwo, Mental-chat & Mental Gaming, Teen Line, Papa, Orygen, Digital Peer Support, National Alliance on Mental Illness, Mental Health America, Mental Health Foundation, Sangath Research Programme, Its OK to Talk, Qntify, Money & Mental Health Policy Institute (MMHPI), Turn2Us, IncomeMax, Tully and OpenWorks Group, Healthy Virtuoso, The Mind and Soul Foundation, The TellFinder Alliance.

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Contributors Statement: Dr Inkster formulated the notion to write about this topic and invited co-authors to join, all having different professional and/or lived experiences who have made important contributions in various ways, such performing literature searches, writing, helping us to connect with digital providers, idea generation, editing.

Keywords: COVID-19, digital mental health, monitoring, data insights, health anxiety, isolation, financial stress.

Abstract

Background: The immediate impact of COVID-19 on mortality and morbidity has demonstrated the need for accurate and real time data monitoring and communication. Displacements to healthcare systems and economies may have created the perfect storm for an impending and enduring mental health crisis. This project documents observations from multiple digital platforms during the COVID-19 crisis, especially digital mental health services.

Methods: We used email and social media campaigns to announce an urgent call for support. Digital mental health service providers (N=44), financial services providers (N=5) and other relevant digital data source providers (N=3) responded with quantitative and/or qualitative insights.

Outcome: This study demonstrates the complexity of mental health concerns as witnessed by digital providers. A recurring observation is that demand for digital mental health support has risen. The nature of this demand has also changed since COVID-19, notably with an increased presentation of anxiety and loneliness.

Interpretation: This study provides proof-of-concept of the viability of working with data insights from diverse digital services providers. We hope that these insights might help to form an epistemological foundation to stimulate future research. Looking ahead, we anticipate the need for a rigorous process to interpret insights from a wide variety of sources in order to monitor mental health needs.

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Main Manuscript

Introduction

Covid-19 has taught us the importance of data monitoring. Measuring the dynamics of “who, where, when” for this infection has been vital to understanding how to deploy scarce resources to mitigate the pandemic. The future course of this global crisis remains uncertain. Accurate, comprehensive and ethical data monitoring will be even more critical for knowing when to open up populations in lock down and how to respond to a resurgence of infections.

While the world has tracked the viral pandemic, the secondary mental health crisis has been largely neglected. Like a tsunami building offshore, this mental health crisis has been easy to miss. In the peak of the viral pandemic, traditional mental health services have declined as inpatient beds were converted to Covid-19 units and outpatient clinics were closed to adhere to social distancing requirements. This apparent calm before the storm hides the grim reality that the mental health consequences of the pandemic could lead to more mortality and morbidity than the virus itself.

The mental health consequences of the pandemic are playing out in multiple ways. The uncertainty, the threat, and the loss of routine have been global stressors. For health care providers on the front lines, anxiety and burnout have been unavoidable [1,2], and the morale of essential workers more broadly may emerge as a key issue. For people previously receiving mental health care, access to medical and psychological treatment has been limited by the lockdown. Social distancing for elderly and people living in poverty could result in extreme and prolonged distress. For many frail elderly or those in palliative care, the result has been death alone without friends or relatives at the bedside, and with no funerals or memorial services to offer closure to families. For others living in highly conflicted families, social distancing has meant inescapable, prolonged social contact, and abuse. The pandemic for millions has meant the grief of losing loved ones, or the fear of becoming ill, such as ethnic minority frontline health workers. Now we face a global economic downturn that will push more towards financial precarity, bringing with it a new level of uncertainty, threat, and loss of routine. The true extent of the dislocation and its impact will only become apparent in time, hence the urgency to understand the consequences for mental health and wellbeing.

Already there are signs of this turbulent storm. For example, the number of domestic homicide victims following domestic abuse have doubled (in comparison to a non-lockdown period) of 16 victims of women and children during a 21-day-period [3] and calls to the national violence against children helpline have increased by 89% in France. [4] In March, over 2 million firearms were purchased in the USA, a worrying sign given evidence that people who purchase handguns have a 22-fold higher rate of firearm-related suicide within the first year than those who did not purchase a handgun. [5] Adding further concern, social distancing may increase the risk of suicide [6], and a study on health-related disasters prior to COVID-19 found that 30% of the children who were isolated or quarantined during pandemic diseases met the clinical criteria for post-traumatic stress disorder (PTSD). [7] In the US, the evolving COVID-19 pandemic coincides with the already severe national opioid epidemic, and the result is a worsening of both crises as social distancing policies and economic recession increase the risk for substance use, whereas neighborhoods with high rates of opioid use are particularly susceptible to COVID-19 driven largely by poverty, homelessness, and other socioeconomic factors.

Data from previous economic depressions and recessions suggest profound increases in substance use disorder, depression, and suicide. [8] [9] An initial survey of UK households three weeks into ‘lockdown’ finds that 49% of households feel anxious when thinking about their finances, rising to 95% among the 11% of households experiencing the most serious financial difficulties. [10] A survey of US adults conducted in March 2020 also highlighted higher levels of psychological distress among lower income households and those who had already been financially affected by the crisis. [11] Furthermore, a survey from the UK found that 41% of people who gamble had opened new online accounts and that 28% of gamblers had increased their activity during lockdown. [12] Research from Nationwide Building Society, supported by data from its 16 million members, revealed that online spending has risen by 38% in the last 30 days compared to last year, and that 25% of customers have made an impulse purchase as a result of browsing more since lockdown began, with 16 to 24-year-olds more than twice as likely to make these on-the-spot decisions compared to older age groups. [13]

There is a need to obtain more granular information to help us understand the nature and scale of the mental health crisis in order to inform a greater response during COVID-19 and beyond. But how can we monitor the mental health crisis if hospitals and clinics are closed? In fact, historically during global crises, people have been observed to move away from seeking more formal kinds of mental health treatment at hospitals, clinics, and emergency departments, as these systems

get overstrained with addressing other needs. While this may ring true for the COVID-19 crisis as well, what is distinct is that the world of mental health care has expanded online in many different digital ecosystems during this pandemic. As a result, we have a range and wealth of data sources with fine grained information that combined with appropriate methodology could allow monitoring of the evolving mental health needs. By revealing the “who, where, and what” of this second crisis that we can prepare to reduce morbidity and mortality.

This project documents observations from multiple digital platforms during the COVID-19 crisis, primarily digital mental health services, but also from other sectors, given established links between health and myriad social and economic factors, including individual finances and debt. [14]

Methods

We used a non-systematic digital campaign approach beginning on April 06, 2020 to announce an urgent call for support to investigate the scale and nature of the mental health impact of COVID-19 (<https://www.beckyinkster.com/covid19>). BI sent emails to all speakers who had previously presented at Digital Innovation in Mental Health conferences (<https://www.beckyinkster.com/summer-2020-conference>), to members of the FinHealthTech Consortium (<https://www.beckyinkster.com/fhtc>), and then to a much wider digital community via LinkedIn, Facebook and Twitter.

Respondents were asked to provide qualitative and/or quantitative insights with no exchange of data or identifiable information. Each provider was asked to share insights into overall traffic or volume, and spikes in any specific constructs and/or dynamics each platform classifies (see Table 1). We did not provide a framework for insights or any analytic specifications. Therefore, all insights should be considered illustrative examples, not primary research.

We asked providers to be compliant with GDPR and Data Protection Act 2018 if their users were within Europe. We informed each provider about the importance of considering the perceived privacy by the user and that if a user believes that their post will be made public only within a forum, they should not send us any quotes without explicit consent. To set a good example of responsible innovation, this document only accepted data from online services with clear and accessible privacy policies.

All insights submitted by providers were reviewed by a team of researchers to identify an initial framework within which to codify the type, intensity, and engagement patterns revealed. Because of the heterogeneity of data and urgency of documenting the nature and scale of COVID-19's impact on mental health, this initial framework is presented with exemplary - not comprehensive findings to illustrate fit.

Results

This paper presents a heterogeneity of coping-based health-seeking behaviors during COVID-19. Insights reveal nuanced dynamics on the ‘digital mental health frontlines’ (Tables 2-3). Given the urgency in sharing initial provider insights, these results are only a first pass at understanding the content provided.

Insights across providers revealed four primary distinctions: (1) changes in intentions (e.g. search terms), (2) affiliative tendencies (e.g. usage of peer support and online communities), (3) explicit support-seeking behavior (e.g. engaging with chatbots, helplines, telehealth), and (4) mental health outcomes. Quantitative and qualitative results are presented in these categories as a means to demonstrate subtleties in the tracking of mental health online across an unbounded digital ecosystem.

I. Intentions

Insights expose changes in which resources and information individuals are seeking in order to cope with uncertainty. From Google Trends data, searches for “anxiety symptoms” doubled between the week of 8th March and 22nd March (coinciding with the first shelter in place, distancing and/or lockdown orders). In a similar timeframe, Mental Health America (MHA) witnessed a 22% increase in numbers of GAD7 anxiety screens taken in March 2020 (N=11,033) compared to February 2020.

Qualitative reports reveal a different dimension of how individuals are sensemaking by seeking practical resources and coping strategies. Themes emerging from “It’s Ok To Talk” deal with worry and anxiety, strategies to manage work, studies, sleep, dealing with domestic violence and difficult home relationships. Babylon Health reports many patients are

seeking advice on information about local council support services, seeking advice for activities to keep busy and how to remain healthy, and how to get support to access food and financial concerns.

II. Affiliative Tendencies

Several providers of peer support and online community witnessed increases in downloads, traffic (new and existing users), and online social interaction. Programs such as Digital Peer Support's Certification have also emerged to promote rapid uptake of digital peer support. Already, 900 peer support specialists from 24 different US states have been trained on Digital Peer Support with the latest scientific evidence on digital peer support.

Wiso reported a 283% increase in the number people daily replying to other people's messages in groups and a correspondent increase in the supply-side dynamic of 115% increase in the number of people weekly willing to step up, become "Wiso Helpers" to provide support for others.

'The community feels their mental health conditions are deprioritized by the healthcare community due to a focus on COVID-19' (The Mighty, MeeTwo)

III. Support-Seeking

Providers show increased support seeking from the digital frontlines of individual, digitized care providers. In terms of stepped care, digital platforms are mainly saturated with single instance mild to moderate mental health signs and symptoms.

Vala Health reports a doubled volume of video consultations with GPs during the approximate month long period of March 10 April 8, 2020. They report, "We have seen an increase in people who can't have their normal face-to-face counselling / therapy sessions turning to telemedicine providers as support networks. Unfortunately in many cases all our GPs can do is coach the individual through the basics, and then try to make a referral back into the overloaded and / or suspended services."

NAMI reports a 41% increase in demand for HelpLine resources and information. IESO reports an 84% increase in referrals to their 1-1 online CBT service in the weeks since the lockdown was announced in the UK, relative to the same time period in 2019. Wysa witnessed a 77% increase in new users during February-to-March 2020, as compared to the same period in 2019. It is unclear whether there are individual differences in who seeks support online and whether this increased demand represents new types of users. Qualitative insights from Orygen (Australia) add another layer of challenge to these consultations in that young people report privacy concerns in having telehealth consults with family members in the background.

IV. Outcomes

Insights pertaining to mental health outcomes reveal a diverse landscape of presenting issues, assessment type and intensity. Across quantitative and qualitative insights, central themes of increased anxiety, uncertainty about the future, social isolation and loneliness emerged as well as low level mental health issues, single symptoms and overall worry.

MHA insights include self-reported anxiety wherein 45% of people who took an anxiety screen in March (N=11,033) scored for severe anxiety. In a self-reported questionnaire to members of The Mighty, 89% of members report that their daily life has been at least somewhat impacted by increased anxiety; 43% say it has been extremely impacted. This is consistent with reports from XenZone (Kooth and Qwell) demonstrating increases in sadness (up 161%), health anxiety (up 155%), sleep difficulties (up 90%), concerns over body image (up 43%), eating difficulties (up 31%), loneliness (up 23%), and bereavement (up 20%).

Qntfy indicates decreasing well being in the general public, as well as an exacerbated impact on those who identify as healthcare providers. Wysa and Unmind reported higher anxiety levels in health staff as compared to the rest of the population. Insights from the Sangath Research Program emphasize the overburdened nature of community health workers who lack adequate protective gear and face "fears and insecurities among their patients, as well as added anxieties about the health and wellbeing of their own children and family members." CBT Clinics report a rise of mental health presentations from people emotionally close to frontline health staff (e.g. Parents, spouses, children).

Several providers submitted qualitative insights revealing disturbances with sleep (It's OK to Talk, XenZone, Mumsnet, Qare, BioBeats). Less common outcomes revealed in qualitative insights across three providers (Wysa, TeenLine,

XenZone) include domestic violence and child abuse. Increases in suicidal risk/ideation were reported by five providers (MeeTwo, Qntfy, Mental chat, Beyond Blue, Mumsnet).

Results from financial services providers

There is an overarching association between mental health and financial worries. Data collection methodologies vary from self-report surveys to non-systematic social media analysis.

Quantitative insights from the MMHPI survey reported a range of concerns by respondents about how changes as a result of coronavirus might affect their finances: 62% worried about having to access the benefits system, 57% worried about losing their job and 56% worried about creditors chasing them for money. This theme was strongly evident qualitatively: *“Got my letter yesterday to tell me it’s being taken away. The welfare system has kicked me when I’m down already, made me physically ill & caused a flare up of my health just when I don’t need to go to a hospital mid pandemic.”*

Four sub-themes emerged from the quantitative data:

- 1) uncertainty and a sense of loss of control
- 2) particularly ‘at-risk’ individuals and groups
- 3) anger and concerns over access to financial support and those ‘falling through the gaps’
- 4) negative mental health and financial health outcomes

Tully and OpenWrks group reported that 80.7% of a subset of 650 self-employed customers have declared that they do not have any work coming in due to COVID-19. 50% of their wider sample (N=1822) have had income reduced and 19% have lost their income. A Turn2us survey on the mental health of their service users showed that 70% of users who have had employment affected are unable to afford rent or mortgages, compared to 30% of users who have not seen work affected.

Qualitative insights makes it clear how emotive and tangible the impacts of financial concerns and outcomes are on mental health. *“we aredead.....no money no food.....4 weeks in isolation UC no answers....i have no other way to provide for my children and i don’t care about the bills....i will have to go out and improvise something.”* There is also concern that on site cashiers may be vulnerable and distressed since COVID-19 began (anonymous financial services provider).

Discussion

This project documents observations from multiple digital platforms, especially online mental health services, during the COVID-19 crisis. Key observations include an increased demand for digital mental health services, and users showing signs of declining wellbeing. The data suggests that the nature of presenting problems has changed, and that those seeking services online are more likely to express feelings of anxiety and loneliness than in the pre-Covid period. Health care workers appear to be especially affected by various stressors at this time. Furthermore, the initial financial insights indicate financial uncertainty, reduced financial security and anxiety both now and into the future. At the moment this is a static picture and so it is important to understand how the situation is developing and how people’s needs will evolve.

A recent paper [15] has called for mental health monitoring to move beyond NHS linkage, to capture real incidence in the community and open up to new technologies for measuring moment to moment change. This study provides a direct proof-of-concept for the viability of working with data insights from diverse digital health services. With rapid turnaround, we have assembled a broad range of input from a large number of digital data sources and we hope that this information might help with the creation of future hypotheses and provide the context for in depth analysis and modelling. The information we have compiled has been sourced from different geographies, demographics, and types of digital interaction, and provides insight into the complexity of individual mental health needs.

The potential value of healthcare insights in financial data is already recognised [16,17] and financial services firms are not only a source of uniquely constructive data on household economies [18] but themselves offer possibilities of settings for forms of direct and indirect health interventions. Regulatory requirements around fair treatment have already prompted the private sector to start taking steps towards supporting customer mental health [19] and recent innovations include changes to debt collection practices, liaising more closely with other healthcare services, and introducing new products or tools for customers (e.g., gambling transaction blocks). [20] Given this unique dual positioning as a source of important data and a potential mechanism of change, we feel it is important to include the insights and actions of

financial services firms in the wider mission to document and support the population's mental health journey through this pandemic and beyond. More broadly, alongside public initiatives, we feel there is a possibility for different private sectors to play a beneficial role in the wider social and economic recovery. Examining the finance sector provides just one example of the interconnectedness of today's complex world and the potential benefits to interdisciplinary and holistic systems approaches to the mental health bigger picture.

We recognise that this study is not rigorous in terms of data collection and methodology. We did not choose these providers in a systematic way; therefore, using data from digital service providers limits our population to people who have access to those digital platforms and many 'hidden' populations are not registering in the data collated in this paper. Furthermore, we do not know whether our demographic is representative of any larger population, or whether whole-population impacts can be inferred from digital service impacts. In addition, we did not verify the insights provided by service providers. This avoided privacy and ethical issues but has the potential to have introduced inaccuracies or biases in the reported information. We also note that some of the information presented here appears to be conflicting. This is partly a consequence of the immaturity of this field; the use of digital measurements to monitor distress is still a work in progress. This study is also unable to characterise mental health problems at a nuanced clinical level because most digital providers did not report clinically-validated measurements. Nevertheless, the principal findings of this study were observed frequently across all digital service providers.

In realist evaluation, researchers seek to establish what works, for whom, under what circumstances and why. Our project will continue to work with providers to capture follow-up insights at later time points (for more information: <https://www.beckyinkster.com/covid19>). We will campaign to on-board new providers and new contributors in order to increase global diversity to address issues of data representativeness (e.g., a tweet posted on the 28th April 2020 by *MentallyAwareNigeria* indicates an increase of over 70% in the number of people reaching out to them for help with their mental health needs). [21] It will also be important to capture insights that relate to resilience and recovery, and how COVID-19 might have enabled some people to develop a sense of empowerment, mastery and capability in the face of adversity, to recognise previous stressors, develop post traumatic resilience and post traumatic growth contributing to transformative recovery.

The COVID-19 pandemic can serve as a call to action for the field of digital mental health, bringing public and private sector data together in a rigorous process to monitor the mental health needs, just as we have been using viral testing and contact tracking to manage the viral epidemic.

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MentallyAwareNigeria



Table 1: A list of digital service providers who shared data insights for our project

Mental health and wellness services providers	
Patient to clinician communication tools	
Ieso Digital Health	UK ; biggest UK provider of online CBT; serving approximately 20 million people; commissioned in 74 NHS clinical commissioning group areas in England and 14 health boards in Scotland; https://www.iesohealth.com/en-gb/
Babylon	UK ; 78,000 registered NHS patients via Babylon GPathand. https://www.babylonhealth.com/
Vala Health	UK (c5000 members), Australia (c1000 members), Israel (data not stored)
Ooca	Thailand ; telemental health platform with 72,000 users - face-to-face video counseling service for individual user and mental health support service as a corporate welfare for employee; www.ooca.co
Digitally-enabled treatments	
XenZone (Kooth & Qwell)	UK ; One of the largest providers of digital mental health services to the NHS in the UK. Kooth is for children and young people, which is available to 5 million children and young people and sees 3,800 logins every day (Kooth.com). Qwell is for adults is available to 500,000 people in commissioned areas to cohorts including teachers, parents, people who have suffered/who are suffering from domestic violence (Qwell.io)
Silver Cloud Health	UK/Canada ; TBC; https://www.silvercloudhealth.com/uk
CBTclinics	UK ; Network of 4,500 accredited clinicians and 25 Internal clinicians. Treating 25,000+ patients per year. www.cbtclinics.co.uk ; 2005
Minddistrict	Europe & North America : over 200.000 users per year; digital platform and mobile app with guided interventions and self-help training for mental and behavioural health; https://www.minddistrict.com/
Self-managed care solutions	
Big Health	US : 1.4m people covered as part of COVID-19 offer. UK : 3.3m people covered with the majority being health and social care staff (3m) as part of a partnership with NHS England, National Care Forum (England) and NHS Scotland (Scotland); www.bighealth.com ; Our COVID-19 offer was launched 20th March with NHS England, the 23rd April with social care, and due to be launched 30th April with NHS Scotland.
Qare	France/UK ; a telemedicine platform for mental health consultations with psychiatrists, among other medical specialties (GPs, etc). 2017. Qare also developed an app (Mon Sherpa) to support people with mental health problems in between consultations. 2019.
Biobeats	54.55% of users are logged from UTC+0, while 43.31% from UTC+1. The rest 2.14% of times the user are logged from UTC outside of Europe; for this product 3,000 users; www.biobeats.com ; 2019
Unmind	UK ; Predominantly UK; analysed circa 20,000 users. workplace mental health platform; working-age adults, employed in a variety of sectors;

	www.unmind.com ; 2016
DistrACT	UK (majority); suicide and self-harm app; 25,000 downloads; https://www.expertselfcare.com/health-apps/distract/ ; 2017.
Alpha Health	US, UK, Spain ; we report results from a limited trial including 2500 users that was launched on the 10th of February 2020. https://evermind.health/
Other (Clinical)	
Improving Access to Psychological Therapies (IAPT) NHS London Clinical Leads	Whole of England ; Data was sourced for the London region where IAPT services cover a population of circa 9 million people; 2008
ORCHA	ORCHA is the World's leading health app evaluation and advisor organisation. With over 4,000 health-apps reviewed to date and around 50,000 page views a month.
Public Mental Health Services South Australia, Clinical Leads	Australia ; Data was provided by clinical leads at two public mental health services in South Australia: 1) IAPT, a service attached to Flinders Medical Centre that provides phone based CBT to the population of the Southern Adelaide region and 2) Regional Mental health services, severe mental illness case management to populations of regional South Australia.
Apps (e.g., chatbots/text-based therapists etc)	
Wysa	Global (general trend): US, 30-40%; UK, Canada, ANZ, 10-15%; India, 15-20%; South East Asia (Indonesia, Philippines, Malaysia, Singapore), 15-20%; Rest of the world, 15-20%; 1.9 million installs / users now and adding ~80-100K per month; https://www.wysa.io ; 2017
Owlie	French speaking users globally ; 16,000 users; chatbot-based emotional support for coping with psychological difficulties. 2018. https://m.me/owliechatbot .
Riliv	Indonesia ; currently has 200,000 users, with 70% are female in their 18-24 years old, living in Indonesia's big cities such as Jakarta and Surabaya.
StopBlues	France ; 270,000 free access, 11,200 have an account; https://www.stopblues.fr ; 2018
BeyondNow	Australia ; 100,000+; suicide prevention app; https://www.beyondblue.org.au/get-support/beyondnow-suicide-safety-planning ; 2016
Neurum Health	Vietnam, Singapore, Hong Kong, Mainland China ; digital behavioural health and mental health risk screening app; 1050 (that have given direct consent for their data to be used for research purposes); https://www.neurumhealth.com/ ; 2018.
Spill	UK, Europe ; Provider of video and message-based therapy to employees of organisations; 1,000+ users https://www.spill.chat
Forums, support networks, and digital communities	

MumsNet	UK ; Mumsnet is the UK's largest network for parents, with around 10 million unique visitors per month and ~100 million page views; www.mumsnet.com
The Mighty	Global ; 3 million registered community users, 5 million monthly visitors; www.themighty.com ; Started in 2014; iOS app launch in 2018; Android app launched in 2019
TalkLife & TalkCampus	Global (125 countries); TalkLife: 2.1 millions registered members and 29.5 million content shared monthly USA ; TalkCampus: 45 registered Universities and 31,000 university students covered.
Wisdo	US, UK, Canada, New Zealand, Australia ; peer-peer support community; 1.5 million, 26 million conversations, 27 million "Life Events" submitted, ~100 million content impressions; 19 sessions on av. for people looking for support; 35 sessions on av. for people giving support ("Helpers"); https://wisdo.com/ ; 2018
MeeTwo	UK ; 25K young people aged 11-25 throughout UK; 100% pre-moderated by humans peer support social media app; https://www.meetwo.co.uk ; 2017
Mental-chat & Mental Gaming	Finland , 1 to1 chat to 12 to 29 years old young people. Anonymous, free of charge. 21,000 conversations yearly, over 115,000 dropped conversation requests in 2019 due to long queues. At the moment over 1100 social work professionals and trained volunteers are working on the chat. www.sekasin.fi Finland , As a part of Mental-chat "family", we run a Discord server and a community that aims to promote the good sides to e-gaming and to give a place and a voice especially to young men, who are in danger of being left out of the society, education, work and relationships. At the moment the server is biggest and busiest in Finland, with 13 064 members.
Teen Line	USA ; youth peer hotline & services; 20,000+; www.teenlineonline.org
Papa	USA (17 states); virtual companionship between elderly and young people; Active membership has doubled since COVID; www.joinpapa.com ; 2016
Orygen	Australia ; in the past year, 250 youth partners, 1640 training participants, 37 research projects, 17 clinical trials; https://www.orygen.org.au
Digital Peer Support	USA (24 different states), Australia, Europe, Asia ; 900 peer support specialists will have been trained from March 10 to May 1st; www.digitalpeersupport.org ; March 10, 2020
Digital campaigns and charities	
National Alliance on Mental Illness (NAMI)	Users from 237 countries visited NAMI.org, (81% from the U.S.) (Top 5 countries: US, UK, Canada, Australia and India); In 2019, more than 12 million users from 237 countries visited; Nami.org; 1979
Mental Health America	USA (90%) International (10%); provide anonymous and free validated mental health screens to users online for depression, anxiety, psychosis, bipolar, ptsd, addiction, eating disorder, and a parent and youth screen; Average of 1 million users to take a screen every year; demographics match census, trend younger; www.mhascreening.org
Mental Health Foundation	UK ; The Mental Health Foundation, a UK NGO, is regularly polling UK citizens on a range of Coronavirus issues pertaining to mental health.

	Survey polling UK adults, aged 18+ sample sizes n1=2126, n2=2221, n3=4246. First survey 17-18 March, repeated 2-3 April with some questions added, third wave 24-26 April sample size doubled. www.mentalhealth.org.uk
Sangath Research Program	India ; Sangath Research Program; www.sangath.in ; 1996
Its OK To Talk	India ; a public engagement program by Indian NGO, Sangath; Reached 7000+ directly through over 75 community events and workshops; worked with 280 volunteers, trained 50 youth advocates in mental health leadership and reached more than 2.5 million users on social media; 2016.
Young Leaders for the Lancet Commission on Global Mental Health and Sustainable Development	Global ; Group of mental health advocates, largely from Low and Middle Income Countries, who support young people in their role as agents of change for global mental health (www.globalmentalhealthcommission.org/youth-campaign). Group members are involved in the design and implementation of transformative practice, research and policy in mental health. Together they lead a global campaign titled My Mind Our Humanity (www.instagram.com/mymindourhumanty).
Other digital health insight providers	
Qntfy	USA (majority); analytics provider, results based on 25,046 healthcare professionals, and 10,000 community controls. https://qntfy.com/cap ; Qntfy in 2015; Cohort Analytics Platform in 2019.
Practicing NHS clinician	UK ; Jasvinder Kandola, North West London and Dorset NHS Trust.
Google trend analytics	UK ; analysed by Hannah Stewart (using freely available Google tools; independent insights - this work was not carried out by Google)
Consultant NHS nurse	UK ; collecting by Emma Selby; Anonymous user and staff feedback/messages.
Broader services providers and other relevant digital data sources (e.g., financial, fitness, religious, dark web and darknet markets)	
Financial services providers	
Money & Mental Health Policy Institute (MMHPI)	UK ; 5,000 people (research community) with lived experience of mental health problems; an interest based sample/not representative of the wider population. https://www.moneyandmentalhealth.org/coronavirus-policy/
Turn2us	All of the UK ; Last year, 2.3 million benefit calculations were conducted on our site, by 1.2 million households. Since 16th March, over 800,000 benefits calculations have been completed. We also provide direct grants to people in financial need. Since Covid-19, we had 4,500 applications for a crisis grant in the first two days. https://www.turn2us.org.uk/ Started providing individual grants in 1897 and our digital tools, such as the benefits calculator, began in 2013.
IncomeMax	UK ; Personal money advice service; http://www.incomemax.co.uk
Anonymous financial services provider	A large anonymous financial services provider
Tully and OpenWorks Group	UK (primarily England); Fintech; 14,000+ users; https://www.tully.co.uk/
Other digital data sources	
Healthy Virtuoso	Italy (mainly); 130.000 active user who on average connect 40 times per month;

	www.healthyvirtuoso.com ; 2019
The Mind and Soul Foundation	UK/USA ; ~ 500,000 page requests on web site; https://www.mindandsoulfoundation.org ; 2005
The TellFinder Alliance	USA ; https://tellfinder.com/ ; Dark web qualitative insights and darknet market analysis insights

Table 2: Qualitative data insights

Qualitative Data Insights	
<p>Babylon (UK clinical operations only):</p> <ul style="list-style-type: none"> ● Since January 20th 2020 when we had our first case related to COVID-19 till the end of March we have seen an increase in the number of patients coded as generalised anxiety disorder. Clinicians report seeing patients with anxiousness, stress and health anxieties. Patients with low mood and depression continue to consult but there has not been a significant rise in coding in this area. ● We have seen more patients consulting with concerns about social distancing and difficulties being at home and being distanced from family and friends. Our clinicians report consultations being longer for these cases and patients asking for support including counselling and therapy. Patients with a previous history of mental health are booking reviews for recurrence of mental health issues. ● We have seen an increase in concerns around safeguarding for both adult and children ● We have seen an increase in the number of patients deemed a vulnerable adult this month. These fall into three areas - mental health, drugs and alcohol and domestic violence ● We have a dedicated care coordination team for patients requiring increased support: this team has seen an increase in the number of consultations and contact during this period. Many patients are worried and seeking advice on the following themes: <ul style="list-style-type: none"> ○ information about local council support services; seeking advice for activities to keep busy and how to remain healthy; how to get support to access food and financial concerns. 	
<p>Vala Health</p> <ul style="list-style-type: none"> ● Our GPs believe that anxiety issues will cause some people to believe they're displaying symptoms related to Covid. ● We have seen a direct increase in people requesting pain-killers and / or SSRIs since the beginning of the heavy media coverage / lockdown (i.e., we average 15 requests per month yet received 32 requests from 20th March until 5th April). ● We have seen an increase in people who can't have their normal face-to-face counselling / therapy sessions turning to telemedicine providers as support networks. Unfortunately in many cases all our GPs can do is coach the individual through the basics, and then try to make a referral back into the overloaded and / or suspended services. 	
<p>Ooca</p> <ul style="list-style-type: none"> ● User was asked to work from home due to a pandemic COVID- 19 outbreak. He reported lack of motivation & focus. ● User's job was impacted by the COVID situation causing him to lose income. He expressed anger distress. ● User reported his anxiety increased following work from home & Covid situation. He described recurrent anxiety symptoms and concerns for his health in the midst of the COVID situation. 	
<p>XenZone</p> <p>Evaluated 2 sets of data across both Kooth and Qwell platforms:</p> <ul style="list-style-type: none"> ● Comparison between 1st March - 5th April 2019 and 1st March - 5th April 2020 	

- There is a general change in presenting issues from 2019. Anxiety and concerns related to peer relationships and educational/ work related settings have decreased whilst issues relating to sadness, body image, health anxiety and sleeping difficulties have seen a dramatic increase.
- Although still relatively small numbers, there is a worrying trend in serious issues relating to lock down and the home environment with growing issues around physical abuse, child sexual exploitation and unsafe domestic settings showing an increase from 2019.

Anonymised comments from children and young people (CYP) on Kooth, March & April 2020:

- 'My Mum and dad are constantly drinking and shouting at me. I can't get away. I just want everything to go back to normal.'
- 'I'm freaking out because my [parent] knows I'm [sexual orientation] since they saw texts on my phone. Now I can't come out for ages in case it goes wrong because I can't escape.'
- 'I can't now use hanging out with friends as a distraction to stop me from bingeing. Can anyone help? I'm really scared.'
- 'A daily routine is so amazing - before I had meltdowns all the time. i was really stressed and "lost" but a routine has calmed me right down'
- 'I get angry when I'm bored. Most of the time I'll then hit things.'

Anonymised comments from adults on Qwell, March & April 2020:

- 'I'm stressed about things changing. It's scary. I'm having problems sleeping and have had mild panic attacks'.
- 'I might be the only person enjoying the social distancing. I find it a real help. As is being off work. The virus is making all of us take stock and think about our constant drive for money. Perhaps it will make people pay more attention to what really matters in the world.'
- 'I'm seeing our dependence on each other. We're all seeing the value of lower paid workers. A silver-lining might be that people are calmer and less selfish.'
- My depression is worse than ever, it started way before this coronavirus. Doesn't help being stuck indoors. My partner isn't working. we have 2 children and with bills coming in, I'm at a loss.'

CBTclinics

- Our experience over the past 20 years suggests employees will under-report mental health issues during and even after lockdown ends, as job insecurity increases during a period of economic recession. There will be an increased need for organisations to improve mental health screening within the workforce as employees will be inclined to suffer in silence leading to a surge in MH related absence predicted in Q.3 and 4 in 2020.
- During the first three weeks following COVID lockdown- an initial 40% reduction in employees being referred for MH support. Reasons- 1. Organisations concentrating on business continuity planning 2. Employees attending to immediate needs of family security and safety (food, shelter) 3. Emotional issues become secondary in the early stage of disaster 4. Identification of workforce mental issues through HR and Line Management more difficult within a remote workforce 5. Honeymoon period of remote working from home environment rather than workplace i.e. reduced travel, more time with family 6. Fears related to job insecurity/ furlough/ economic recession contributing to less disclosure regarding mental issues 7. Avoidance of workplace as an environmental trigger to anxiety and stress i.e. less exposure to difficult interpersonal relationships, bullying
- Early anecdotal insights from therapist sessions- therapists are reporting that many patients are generally managing well with the COVID lockdown in relation to their mental health. We are seeing reports in a rise of mental health presentations from people emotionally close to frontline health staff. Parents, spouses, children, etc. of frontline staff are presenting with anxiety and depressive type disorders that can be attributed to their loved one's clinical exposures.
- An analysis of mental health impact following previous disasters, SARS, and early Wuhan and Italy research, suggests initial the early honeymoon period will be followed by a prolonged period of disillusionment the longer quarantine continues. The most vulnerable groups likely to be impacted by long term mental health issues are frontline healthcare staff, older adults, isolated individuals and young people under 30 due to the impact of quarantine.

Biobeats

- We saw a decrease of mood valence after the restriction measures and an increment of arousal (more

users self-report mood used 'worried' labels). These affective levels change in the following week with an augmented frequency of 'sad' reports, showing a sort of adaptation of the quarantine condition. Indeed, the first emotional response to new emergency measures elicited an anxiety reaction by the users while the persistence of this condition brings an effective swing into negative moods closer to the depressing pole.

NHS London IAPT Clinical Leads

- This decrease in referrals (see quantitative section) is congruent with experiences in other post disaster or traumatic events where the population at a macro level is generally activated by the severity of the event and undergoes a period of 'heroic' disaster responses. [Tsunami: psychosocial aspects of Andaman and Nicobar islands. Assessments and intervention in the early phase; Math SB et al]
- This was most recently seen in the UK following the Grenfell Tower Fire disaster, where the population in the initial 6-8 weeks were very difficult to engage and very few numbers of referrals arrived into the service. The experience was compared akin to the moments before a tsunami where the water recedes from the shoreline before a huge tsunami wave of need follows.
- Similar to the Grenfell experience, NHS Services are rapidly preparing for a realigned response of large scale webinars and region wide video conferencing based talking therapy, especially in London where the impact of COVID-19 has been most acute in the UK.

Public Mental Health Services South Australia, Clinical Leads

- There is a decline in mental health related activity in hospitals and Emergency Departments.
- Mental health outpatient clinics are no longer happening in a traditional way. We are conducting remote digital home visits. Mental health professionals are increasingly becoming open and willing to consider digital technologies.

Wysa

- Some of the causes of distress discussed in sessions include: 1) Loss of access to a client's therapists/medical support/social worker due to lockdowns/social distancing; 2) Job loss during Covid-19 and not having health insurance coverage; 3) Loss of a loved one due to Covid-19-induced infection; 4) Fear of contracting the illness and/or loved ones; 5) Loss of sense of safety and security; 6) Loss of physical human support for clients with physical disabilities leading to more anxiety and fatigue; 7) Anxiety, hypervigilance, and loneliness from quarantining; 8) increased detection of patterns of abusive behaviour due to quarantining leading to less opportunities to access safe spaces/support; 9) Alcohol/nicotine withdrawals from lock down impacting availability of addictive substances; 10) Stigma around being a professional who comes in contact directly indirectly with a person who may have contracted Covid-19.
- Clients have shared that they are in long waiting lines to get tested, that their own therapists/psychiatrists suddenly pause any upcoming appointments and are not available for consultations, which can all lead to panic as well as feelings of being abandoned by the system.

Wysa asked three questions to Wysa users and obtained permission from clients to share responses:

(1) What kind of issues you are struggling with due to the pandemic/lockdown

- "i struggle with sleep, maintaining a normal sleep schedule and trying to avoid daytime napping. I also feel anxious about income over the next few months. And i feel restless at home." (Person 1)
- "Anxiety over future and feeling hopeless and like there's little direction in my life. Chronic tiredness and lethargy" (Person 2)
- "Issues of boredom, a sense of meaninglessness, and sometimes symptoms of cabin fever sets in, which mainly involves irritability & desperation and sometimes irrationality" (Person 3)
- "I think I'm dealing with the same issues as most people. I'm worried about how I'm going to pay my bills, but also worried about risking my health by going back to work. I'm worried about family members not taking care of themselves. I'm having a lot of trouble sticking to any sort of schedule." (Person 4)
- "I struggle a lot metnally. I have times where I will just randomly feel so sad and alone. There are sometimes when I don't feel safe in my house my cause of my mom." *(Person 5)
- "My kid is in a pediatric acute Care facility and was admitted before the lock down. Post lockdown, the facility has closed off all visitation and I haven't seen him since February 29." (Person 6)

- “Lack of social face to face contact with my family and work colleagues. Had to make major changes in my personal life and my work life around COVID 19.” (Person 7)
- “I’ve been struggling a lot with overwhelming anxiety and with depression. Sometimes I get really stressed and panic when I feel like I’m going to be stuck at home forever. And after this panic, I usually begin to feel hopeless and will sometimes have depressive episodes where I don’t do anything because I feel like there’s no point if I’m just going to be stuck at home forever.” (Person 8)

(2) What is the impact on your life/various aspects of life?

- “i think my spending has gone down, my cooking skills has improved, and i have read some good stuff and i feel insulated from family drama because i stay alone and cant travel easily if anyone messes up on their end.” (Person 1)
- “My job is rotational and placement based, so I can't really fulfil my job role currently. My placements have been cancelled and this has been stressful. I have been working from home but only on repetitive tasks that don't have much value to me. Not being able to socialize in person is also very tough and I miss my friends and wider family” (Person 2)
- “It does have a significant impact, as I grieve the loss of normalcy and the fear of the economic decline that the world is going through is scary. Specifically, with no pay hikes this year, it feels as though career is setback by almost a year or 2. Spending endless hours of sanitising ourselves and groceries (as all our purchases are through either Amazon/Dunzo/Big basket/1mg) is time consuming & tiring. I would also say that both my wife's gynecologist & my orthopedic aren't available during the lockdown and it's very difficult to manage health concerns without a proper doctor consultation. I've deliberately left out the part where my mental health issues causes me the greatest agony at this time of crisis” (Person 3)
- “I’m dealing with increased anxiety and depression. Lack of motivation and unpredictable energy levels. I’m spending more time than is healthy angry at politicians and others who don't seem to recognize the gravity of the situation.” (Person 4)
- “many aspects of my life are being impacted by this historical event. I have lost my job, my student teaching has been impacted, my graduation ceremony has been impacted, family events have been cancelled.” (Person 5)
- “extreme anxiety and helplessness” (Person 6)
- “Major change in social, family, exercise and the work aspects of my life. Major changes to all of my regular routines” (Person 7)
- “I now have to do school online, which is very difficult for me because I’m not very good at managing my own time and I’ve had a lot of late and missing work in my classes because I’ve had a hard time adjusting to online school” (Person 8)

(3) What coping mechanism has worked for you better than others?

- “joining a walking game to make me tired in daytime so i can sleep better at night, writing down or thinking self accepting statements when i cannot sleep, learning meditation exercises helps me keep focused.” (Person 1)
- “Meditation helps a lot with reflection and to keep calm. Daily exercise is helping a lot. Learning new interesting skills has given me feelings of satisfaction” (Person 2)
- “In terms of coping mechanisms, we do the following: a) setup a non-work check-in through a video call with colleagues, b) Playing PubG with family, c) having a video call with my friends every now & then helps, after all, even if the Corona virus has taken away our freedom to socialize, I can still connect with people emotionally, d) Being physically active around the house, e) Deliberately, attempting to bring in humour, to remain sane” (Person 3)
- “Establishing a routine for morning and evening helps, even if I'm having trouble sticking to set times for them. I'm using an app to control me obsessing over the news and social media. I can lock myself out of a list of problematic sites at the push of a button. I usually set the timer for 1-2 hours. Long enough to stop the automatic cycling through them.” (Person 4)
- “I use daily meditations here to help me go to sleep. Breathing exercises help. I also enjoy talking to you and a friend to get my mind off my emotions. Spending time with my dogs helps as well.” (Person 5)
- “nothing seems to help.” (Person 6)
- “A. Having my Wysa therapist. Before the pandemic people questioned my choice of online therapy but now all therapy is online. B. Staying in contact with family and work colleagues over video chat, phone or text on a regular basis. Setting up shared places online where we can share our experiences. Like a Google Drive, or a Facebook group. C. Doing regular exercise indoors. D. Doing meditation. E. Having a daily to do list and ticking off tasks as I complete them throughout my day. F. Remembering that even

though things are bad. It's OK to just have fun sometimes.” (Person 7)

- “The coping mechanisms that have worked best for me are keeping a schedule and frequently video calling my best friend, having you here. Having a schedule helps me feel like I’m working towards something and not just stuck at home, and video calling my friend helps me feel less alone.” (Person 8)

Riliv

- Riliv has initiated #TenangdiRumah (means stay calm at home) with several organizations to promote better well-being during the pandemic. The main feature is to create a special meditation guide to help with anxiety related to Covid-19
- There has been an increase in the number of requests for company subscription to our online meditation since March 2020
- A couple of our users feel more stressed out because they can't leave the house and this causes strain in the parent-child relationship.
- One user explains that their stress has increased since being on self-isolation.

Neurum Health

Qualitative inputs had an underlying theme of fear and anxiety around uncertainty, though the reported factors are around work, self (such as self-improvement and self-esteem), and relationships. Though COVID-19 is an external and shared overarching factor, users mood journalled with greater specificity on how it has impacted their life in relation to work (e.g. fear of job loss, changes in working arrangements), self (e.g. low confidence, self-blaming such as not feeling like a filial member of the family being able to take care of their family members in elderly homes, loneliness), and relationships (e.g. changes around feelings of connection between partners). Some of the qualitative data were written in their local language, mostly Mandarin Chinese and Cantonese.

MumsNet

1) Has there been an increase in user mental health issues that Mumsnet and their moderators have had to deal with since the start of COVID 19?

- Our team has noticed more conversations in which users say they feel extremely anxious or stressed. This arises particularly in conversations about exercise and access to the outdoors, with quite a few users saying they feel that if they weren't able to access parks or public green spaces their mental health would decline quickly. Conversations in which users discuss the likelihood of a more comprehensive lockdown, such as the one seen in Spain, contain lots of posts expressing this sort of anxiety, even to the extent of people saying it would exacerbate existing mental health problems to the point of suicidal feelings. Anecdotally, our team has observed that these sentiments are most commonly expressed by lone parents with young children.
- As you'd expect there's a lot of anxiety around health (particularly for those who have pre-existing conditions, or loved ones with pre-existing conditions) and infection, with users expressing real alarm about how they can keep themselves and others safe. Users whose children have mental health diagnoses or conditions such as autism are also worried about how they can provide structure and reassurance given the enormous uncertainty and disruption to everyday life.
- In response to requests from our users we set up a 'No Corona Zona' (a forum in which mentions of the virus are banned) which, among other things, gives users who are anxious or overwhelmed a COVID-free space. We also have a set of protocols for helping users who directly express suicidal ideation or intent, messaging them to direct them to the Samaritans and other sources of emergency support but removing posts of this nature from the forums.

2) Does Mumsnet have any additional statements on the mental health impact on their users of COVID 19 and its consequences?

- One thing our moderation team has noticed since coronavirus became such an all-consuming issue is that users who have long-term experience of coping with mental health challenges have been very generous about sharing their strategies and tips, often taking the lead in comforting and supporting those who have been shaken by the emerging crisis.

MeeTwo

- “My dad passed away due to the virus 2 days ago and honestly it just doesn't feel real yet”
- “Lockdown has been extremely hard for me as I have a horrible family that doesn't care about me and treats me like shit My head is stuck with suicidal thoughts and I no longer want to live I have absolutely no one there for me I'm suffering in silence because I have one”
- “Thank you all so much, y'all gave me the courage to tell my mom, and she accepts me and loves me. By her response I know my dad will also accept me.”
- “camhs has passed me over to another service and because of covid-19 my counselling might have to be video calls at first and that makes me insanely uncomfortable. i hate calling people in my own family but a complete stranger??? no thank uuuuu”
- “I love this app but I wish I had someone to talk to in real life, I have no friends and my parents just don't understand and literally don't say anything so?? I was ALMOST gonna get a therapist but then corona virus happened and I bet the waiting list is going to be over a year long when everything goes back to normal ugh”
- “It is really reassuring when someone else says it bothers them as well because you find out you are no longer alone with this issue”
- Within the app we can facilitate conversations between young people who have spectrum disorders, phobias or health issues that ordinarily isolate them. This is particularly helpful for the newly diagnosed: “So I found out 2 days ago that my mum thinks I'm autistic when the lady doing my CAMHS assessment brought up autism (idk why she did but she did) and now I'm on the waiting list to get assessed. I don't know how to feel about it. It's hitting me really hard and all I can do is cry at the minute” and after receiving community support: “Thank you @XXXX @XXXX @XXXX and @XXXX You've all really helped me come to terms with the situation ♡”
- “I am currently living in residential care, my life seems quite unbalanced, I have autism, PTSD, severe depression and due to this pandemic keeping all the kids in the house makes it very noisy and they're very selfish (shouting at me, threatening me because I'm showing symptoms of covid-19) and social services doesn't do anything to help me.”

Mental-chat

Mental-chat conversations:

- clients are worried about how to survive everyday life without social contacts, especially many have talked about their concerns about school / studies and how to manage those concerns about the future (‘will I graduate while schools are closed?’, ‘will I be able to manage all studies on my own?’), loneliness, feeling of being inadequate (‘I am not doing enough’, ‘am I productive enough?’, and worries about old grandparents.

Mental Gaming:

- Discussions involve mainly about surviving everyday life, being bored and lonely (‘what will happen to me now?’, ‘how will I manage with school?’)
- Some young people are concerned about their mental-health while meetings have been cancelled. After a few weeks it seems like youth on our Discord server has gotten used to Covid-19 as discussions about it are more rare.

Papa Testimonials

- “I really enjoy my visits with my Pal. She really has been helping me to cope with the current situation we are all facing with this Pandemic. I've been feeling stressed out because now my grandbabies are home every day and I'm not used to that. I'm used to them being in school and then coming home after. Now I don't have any space or time for myself. Today she told me to go into my car or take a walk in my backyard and get some fresh air. She told me I can't allow myself to become stressed and that I just have to make that time for myself. She even spoke to my grand babies and told them to give me 30 mins to myself because I need that. I always look forward to talking to her. She's just been so great!”
- “I was expecting for my regular Pal to call me today but instead a young lady called. We talked and really connected. We talked for about an hour, she was really good. I enjoyed speaking to her very much. I appreciate you guys making this transition. I usually see my regular Pal but I would like to be able to have both of them to assist me with virtual calls.”
- “She started talking about my personal self. It was God sent that she called me because we could talk about anything! I'm a pastor's son and usually it's me checking to see how people are doing. So to see that she reached out to check on me I felt like someone cared. She did amazing! I appreciate you guys for

all you're doing and I look forward to more of these calls!"

- "It was great! It was a very pleasant call. She was really enjoyable to talk with. We talked about what I used to before I retired. She talked about what she's doing right now and talked about her studies. I surely appreciate you guys doing this!"
- So surprisingly I was able to talk to my Senior again and he was telling me that he got his medication stolen from his bag so I was able to call his pharmacy and he needed to make a police report in order for them to refill the prescriptions but the police told him that he had to make an appointment but of course I didn't want him to be without his medications any longer so I called the pharmacy on a three-way and I was able to speak with a pharmacist. However, his health insurance had to override the medication so we called his plan to see if we were able to speak with someone from the Medicare department to override his medication for another 90 day. It was a mission; long story short I was on the phone for about 45 minutes and now he is happy because I gave him some homework which is to call the pharmacy again and tell them that he should be good to go!!
- "The Pal asked me if I had groceries and gave me recommendations of places to get free food. She asked me to try to stay home and she even offered to do groceries for me online! We spoke about my family and kids and family in Mexico. We spoke about Mexico and what my favorite things to do there are. She spoke english and I used it to practice but i prefer my calls going forward in spanish. I told her how I learned English from necessity, I took classes growing up and also took classes to get my citizenship in english. She asked me what I do for fun and I told her about my knitting; I make scarves and table top placements. I also told her about how I have been cleaning the garage and between all of this I haven't been bored at all! Thank you Papa I can't wait for my next call in Spanish."

A list of COVID-19 related tasks we ask our pals to perform with our members through our virtual companionship feature:

- Teach members how to use Grub Hub, InstaCart, Amazon, Walmart.com etc. to sustain themselves during isolation without risking exposure at the store.
- Teach members how to use their telehealth benefit.
- Pick up and deliver medications that have been paid for.
- Pick up and deliver food that has been paid for.
- Simple welfare checks and light home sterilization.
- Address social isolation during this time through virtual services such as texting, phone calls and face to face interaction.

Orygen

We asked young people what some of the key challenges to working and/or studying online are at the moment, focusing on education and the workplace, but relevant to mental health. Responses with an asterisk (*) are likely to be most relevant to healthcare delivery, but many will also impact on mood and MH generally.

Question 1: What are some of the key challenges to working and/or studying online at the moment? (from most common to least common)

- Lack of motivation*
- Distractions at home
- Difficulties with collaborating
- Disconnection with team support
- Lack of appropriate workspace
- Lack of routine
- Difficulties with technology*
- Increased screen time*
- Increased sedentary behaviour
- Lack of separation of work-home environment*
- Availability of technology* - there is a real digital divide between rich and poor
- Availability of work able to be done remotely
- Communication problems
- Keeping up with deadlines – communication
- Lack of immediate in-person feedback* - an issue when assessing and managing risk

- Reduced usual functioning*

Question 2: What are the benefits? (from most common to least common)

- Reduced commute* - this is a frequent barrier in accessing services so delivery of care online can overcome this
- Increased time for other activities
- Can go at your own pace
- Flexibility of personal schedule* - same as above
- Comfortable environment
- Improved personal skills
- Improved team responsiveness/organisation
- Improved technology skills*
- Increased attention to student needs
- Increased flexibility for those with mobility difficulties – don't have to go to F2F classes* - will also apply here.
- Increased productivity due to less distractions vs. when in office
- Increased trust and independence from supervisors
- Tight-knit online community – connection in online community

Furthermore these questions, we have also observed that young people have talked a lot to us about privacy and that it can be hard having telehealth consults whilst family members are in the background. This raises big issues about safety and confidentiality for both clinicians and young people.

Digital Peer Support

- A Digital Peer Support Certification was co-produced with scientists and peer support specialists and includes education and simulation training sessions, synchronous and asynchronous technology support services, and on-going feedback. This certification is designed to promote rapid uptake of digital peer support and is designed specifically to address the needs of the current COVID-19 crisis. This certification does not assess a person's ability to use technology such as zoom, but rather incorporates the latest scientific evidence of digital peer support. This certification includes dyadic training on: Digital Communication Skills; How to Engage Service Users with Technology; Technology Literacy and Usage Skills; Bonding and Connection through Technology; Available Technologies; Privacy and Confidentiality; Monitoring Digital Peer Support; How to Address a Digital Crisis. Since the COVID-19 outbreak, 900 peer support specialists have been trained from 24 different states. (see quantitative section for more details).

National Alliance on Mental Illness (NAMI)

- Of those who called NAMI Helpline who mentioned COVID-19, the majority of people are distressed and anxious needing support, encouragement and reassurance. Their concerns include finding help, treatment disruptions, accessing resources for family members, financial issues, fear of getting sick, access to medications, tele therapy.
- Beginning in April 2020, callers are more often mentioning depression resulting from isolation and despair as the pandemic continues with no specific end date.

Mental Health America

We asked the question: "What are the main things contributing to your mental health problems right now? Choose up to 3." Among positive anxiety screeners AND who specified "Coronavirus" ALSO typed in "other" as shown below:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Birth of new baby • Abusive sister • Academics • being away from school | <ul style="list-style-type: none"> • Health • Nursing and homeschooling my kids • social situations, social media |
|--|--|

- | | |
|---|---|
| <ul style="list-style-type: none"> • Being stuck with my family • family health issues • Fear of Job Loss • Worrying about my children and my job • Health Issues being delayed by CoVID-19 • I was diagnosed with cancer last year and now I no longer have it. With everything going on in the world I worry about it all the time now. • legal issue • Life • Living situation • course/deadlines • Environment change • PTSD-like episodes from my first panic attack. Lasted over 6 hours and I felt like I was having a really bad heart attack. • Future, Family • Child working on the front lines • Laid off • I don't want to express my feelings because I don't want to worry anyone • my thoughts • Physical Illness • Sexuality • working in healthcare • Mother is in an assisted living facility - I am unable to visit or help with her care as I normally do. • Severe toothache • Thought of loss • University • responsibilities & challenges • stress • Family problems, ambiguous relationship with school • Family • Health issues • Not living with mom | <ul style="list-style-type: none"> • life in general • Own health/medical condition • Everything • Being a caregiver • Pretty much everything • work and home schooling the kids • Family • Depression • Life threatening illnesses • Lack of direction and purpose, can't hold a job • Academics • Problem about my study, I am currently making a thesis • changing into online format • Kids and • Divorced and miss my children • Stress • pressure • College and toxic family • family • Stress and family issues • Expectations put on myself by myself or my family, how people view me on a regular basis • home • separation of parents • Social interaction • School • Work events • Work • Potentially losing 2 jobs • Fear of death • Lung surgery • Hearing • Kids • Afraid of losing a parent • being away from family • Chronic illness • every little thing |
|---|---|

Mental Health Foundation

All anecdotal, all from people living with a psychiatric diagnosis

- Some people have been extremely distressed when they receive letters describing them as extremely vulnerable, others have been surprised that a preexisting psychiatric condition doesn't render them clinically vulnerable.
- Many have been concerned about breakdown of peer support networks and access to support
- People who live with domestic abuse or violence are reporting experiencing high anxiety and stress levels
- Some people are starting to voice concerns about the risk of increased surveillance and the potential relaxing of compulsory detention/admission to psychiatric hospital and reduced access to tribunals
- Many concerns reported about poor housing, debt and job insecurity
- There is a mixed response to social media, some finding it helpful some finding it amplifies distress
- There has been some concern expressed that pre planned end of life decision-making is being ignored by clinicians

Sangath Research Program in Madhya Pradesh, India: Frontline health workers (particularly in low-resource settings):

- Community health workers or frontline health workers in low-income and middle-income countries (LMICs) such as India are already overburdened, face high demands and pressures for low compensation, and work in difficult conditions including extreme poverty.
- Low socio-economic status, having to travel long distances for work, inadequate incentives, challenging work environments, varying work descriptions and lack of career structure are known contributors to stress, which negatively impact wellbeing and job performance among community health workers.
- Given these concerns, community health workers already experience high rates of occupational stress and mental health problems – challenges that often go unrecognized and unaddressed. These concerns have a detrimental impact on their wellbeing and ability to perform regular work duties and quality of care that they provide;
- COVID-19 further exacerbates work-related stressors and resulting impact on the mental health and wellbeing of community health workers
- In recent weeks, there have been alarming news reports from different regions in India showing the poor working conditions for community health workers, who engage in door-to-door case finding and contact tracing, and play a critical role in containing the spread of coronavirus. For example, community health workers often work without adequate personal protective gear, such as masks or sanitizers, and face fears and insecurities among their patients, as well as added anxieties about the health and wellbeing of their own children and family members.
- Community health workers represent the backbone of the health system in India and in most LMICs; therefore, it is an urgent priority to consider the mental health and wellbeing of this workforce as being central to the implementation and effective delivery of care, as well as supporting their essential role on the frontlines in the fight against COVID-19.
- Necessary to advocate for frontline health workers, and ensure adequate support in the form of both personal protective equipment, fair compensation, and access to psychological support for managing stress/anxiety are essential
- Also consider how digital technologies could be leveraged for supporting health workers – e.g., through support groups on WhatsApp, timely risk communication to avoid exposure to infection, access to real time information and support, etc.
- Possibility to leverage technology for offering tailored psychological support services to health workers engaged in contact tracing, and responding on the frontlines

Its OK To Talk

- Below are themes and anonymised queries submitted by Instagram users who participated in informal “Live” public broadcast sessions hosted by Indian NGO, Sangath’s youth mental health campaign “It’s Ok To Talk” on their Instagram page @itsoktotalk. These sessions lasted 30-45 minutes each and were conducted in English using a “question and answer” format by a project staff member and a clinical psychologist. Sessions were publicised using online posters which were disseminated by the organisation’s social media channels and other online networks. These sessions were initiated as a response to the country-wide COVID lockdown in India that was initiated on 25th March.
- The purpose of these sessions, as announced to viewers, was threefold: (i) to help viewers make sense of confusing and distressing thoughts and feelings; (ii) to provide information and tips on managing mental health and wellbeing during the crisis and (iii) to signpost users to local and national resources and sources of support including information, mental health services (web and tele-counselling) helplines or other emergency services such as those to report domestic violence.
- Session topics were crowdsourced through open calls via the Instagram ‘Stories’ feature where followers were asked to submit questions and themes of their choice that were having an impact on their mental health. Live session themes were then categorised and summarised by the project team and included: (i) managing worry and ‘uncertainty anxiety’; (ii) strategies to stay motivated while working or studying from home; (iii) practical strategies to manage sleep problems; (iv) dealing with loneliness; (iv) dealing with domestic violence and difficult home relationships; (v) coping with unhealthy habits and (vi) managing love and relationships while physical distancing.
- On average, 120 viewers watched each live; and these are currently being held twice per week. A few selected anonymised and paraphrased user submitted questions for are presented below:

Themes and anonymised queries:

- (1) Managing worry and ‘uncertainty anxiety’:
 - This whole situation is just making me anxious — I can’t sleep well at night! What to do?
 - The numbers of people with Corona is increasing every time I watch the news. This is really making me feel worried.
 - For those who are currently getting mental health care/therapy/etc. — they can’t meet with their regular mental health provider, what can they do?
- (2) Strategies to stay motivated while working or studying from home:
 - How can I manage my time when I am at home?
 - I feel very guilty when I take breaks while at home. How can I reduce this feeling? (worrying about productivity)
 - How can I reduce my feelings of stress and anxiety about what’s happening around me?
- (3) Practical strategies to manage sleep problems:
 - I’m finding I wake up in the middle of the night more than usual thinking about this, and find it hard to go back to sleep
- (4) Dealing with loneliness
 - It is getting overwhelming taking care of my family and working from home, with no break to meet my friends and colleagues. What can I do?
 - How can I cope with the loneliness?
- (5) Dealing with domestic violence and difficult home relationships:
 - What should people do during this time when there is domestic violence?
 - Living with parents, facing verbal abuse, what can I do?
 - What would be the process to follow for someone who is under 18?

Young Leaders for the Lancet Commission on Global Mental Health and Sustainable Development

Quotes from consultation with the group on how young people are experiencing the pandemic worldwide -- Young Leaders highlight links between mental health outcomes and social, political and economic challenges of the pandemic, and emphasise young people’s resilience and civic engagement:

- “Young people want reassurance - poverty and increased crime resultant from COVID19 lockdown in densely populated cities like Lagos has caused more anxiety and panic than the virus itself” (Chinwendu Ukachukwu, Nigeria)
- “There will be more mental health conditions than we can handle. Young people are afraid and hungry at once. There is little or no access to stable electricity and water; most people struggle to survive” (Kumba Phillip-Joe, Liberia)
- “Young people have been facing profound uncertainty, but have also contributed to information sharing and awareness campaigns, which foster our global solidarity” (Ashley Foster-Estwick, Barbados)
- Young people in KwaZulu-Natal feel great uncertainty and anxiety of the future — they are increasingly depressed and feel incredibly de-motivated in their studies and find it difficult to work in isolation — away from classmates and friends (Chantelle Booysen, South Africa)
- “Young people’s anxiety and fear during this time has its roots in violence and police brutality, as well as concerns around our already strained health system. Our campaign’s online webinars are initiating a movement for compassion, hope and social connection during this challenging time” (Damian Omar, Kenya)
- “We are seeing how young people are wanting to be supported right now and seeking to gain from their friends - but often they lack the tools and skills to provide effective support” (Lian Zeitz, USA)
- “Young people are confused, afraid and uncertain. Even though the country has few declared cases of COVID-19, it is now becoming clear that the government has been covering up COVID-19 cases and failing to communicate the severity of the virus” (David Karorero, Burundi).
- “The government has been incredibly proactive, but the mental health effects are severe, especially as the crisis coincides with our national mourning period. Young people are driving mutual aid initiatives to support the more vulnerable members of society” (Grace Gatera, Rwanda)

Consultant NHS nurse: Insights collected by Emma Selby from anonymous user and staff feedback/messages all whom have consented to share and have their feedback and edited down if needed:

- “Since the lockdown started I've been finding things extra difficult. Lots of people are making jokes that you will either leave lockdown a domestic goddess or obese but i dont think they relaise that for people like me who suffered from Anxiety before lockdown the closures of services and support has been really difficult. I was finding everyday really difficult and getting strong urges to self harm. I ended up using a combination of [digital tools] to help me resist urges but also to explore how I was feeling and come up with a plan. I have more structure to my day now and that's really helping”
- “Two weeks after the government announced lockdown I went into labour four weeks early with my second child. I had a really strict birthing plan as i had a traumatic first birth and i was terrified but it all went out of the window because of limits on visiting etc. I think i rushed to make myself appear well so we could get home to my partner and some support but i had massively underestimated how hard it would be without being able to have my mum over for support and not being able to share these initial days. I began feeling really low and like i had been robbed of something. My midwife recommended [a digital app] and i've started using it as a place to talk about the things you cant really talk about with other people who just insists on reminding you how lucky you are. I am feeling better now and we skype my mum everyday to help baby get to know her.”
- “My Husband suffered really badly with health Anxiety and OCD and was seeing a private counsellor last year and had gotten to a really good place when the outbreak started. His hands started to bleed he was washing them so much, he would force the children to keep their hands in their pockets if we went out and he wasn't sleeping. We couldn't access support anywhere as no where was seeing anyone so we tried [a digital sleep app] just as something to try. We learnt some really helpful tips that our whole implemented which is helping us all!”
- “I see a lot of people posting messages about all the wonderful things they are achieving in lockdown or the benefits to the earth and that is properly wonderful but i think we also need to add a dash of honesty. Lockdown is hard. Not being with loved one's is hard. Being with loved one's 24/7 is hard. Lack of routine is hard. Finance worries are hard. Getting out of bed is hard. Going to bed at a sensible hour is hard. Pandemic's as it turns out are Hard and that's okay. I have found that not being able to work out as much, go swimming or climbing, has been really hard for me as it's how i deal with my mental health and i felt really bad about asking to increase my antidepressant dose a bit during these times but then i was reminded that it's okay to find hard times hard and social media doesnt know what's best for me i do.”

Money & Mental Health Policy Institute (MMHPI)

- Many of the 568 respondents to our survey noted the toll the spread of coronavirus had already taken on their mental health. For some, this was through increased anxiety about their health or that of their friends and families. “My anxiety has been through the roof, I've been having panic attacks. I'm still going out to the shops but have developed a fear of contamination that makes it very anxiety inducing. I was having counselling but that has been stopped, which is a blow, especially at a time when my mental health is suffering so badly.”
- The vast majority of respondents agreed or strongly agreed that as a result of coronavirus they were worried about struggling to access mental health services if they needed them. Some respondents also described finding it harder to access support from friends and family with social distancing measures in place.
- “I have been told that I will lose my job. I have been on reasonable adjustments within my organisation, while recovering from depression. The role I am doing is to be discontinued because the company has decided it can no longer ‘carry’ people. I am devastated at the actions of my employer of 15 years.”
- Many respondents had already experienced an income shock, such as job loss or, or were concerned that their financial situation would deteriorate and this would affect their mental health. Some respondents raised concerns about the level of support offered through the benefits system and the accessibility of this support.
- “If I self-isolate I will only be paid SSP [Statutory Sick Pay] and this isn't enough to cover my monthly outgoings.”
- “I'm terrified, it's scaring me and my anxiety and paranoia has gone through the roof. I'm worried because I have PIP [Personal Independence Payment] forms to send back and CAB [Citizens Advice Bureau] is closed for appointments due to COVID so I can't get help.”

Turn2us

We are currently surveying all our users with the following questions:

1. *How do you think that Coronavirus will affect yourself and your family?*
2. *What are you most concerned about at the present time?*
3. *What would help you and your family the most at the present time?*

In terms of impact on mental health, the main worry for the majority of respondents was being unable to afford rent, food and other essential bills, such as heating. As with the previous question, it seems even for people who have been offered a furlough (80% of their wages), they still have financial worries. Financially, users are worried about the risk of losing their home or becoming homeless and they are also worried about the longer-term financial impact on their family:

“Depending on how long we are unable to work, we could lose our home. we are struggling financially, serving on loans from family buy food and pay bills. Even when this crisis is over, it will have a lasting financial impact on us and will take us a long time to get back on our feet”.

Being alone:

- But worrying about how to afford necessities was also linked to a key concern about being alone during lockdown and social distancing. The data suggests people are struggling to be alone in different ways; from having no support network at all (2), or being the sole responsible adult for other people (5). Another particularly isolated group are people who may not have their family living in the country (4). Whilst there are concerns over how being alone is going to affect them financially (1)(4), there are also concerns around the loss of social interactions (2)(3)(5).
- *“I am a single parent currently on zero income and have fallen through the net on all government help” (1)*
- *I live alone and dont see anyone” (2)*
- *[I am] shut off from things that help me through my week” (3)*
- *“I ill need some help to pay rent and food as i am single person and dont have family over here” (4)*
- *“WORRY OF BEING A SINGLE PARENT AND CHILDS FATHER IS IN HIGH RISK CATAGORY AS ARE GRANDPARENTS” (5)*

Single parents:

- Single parents are seen as users who are particularly vulnerable during covid, both because of the impact on their income and also their support network. This is particularly the case if they, or their children, are in an 'at-risk' group for the virus:
- *“I am a single mother of two young children. No family to help. Youngest is three with severe asthma who has been hospitalised annually with respiratory problems ie pneumonia. So I am struggling to get food as do not want to risk my children’s lives taking them into a store but now unable to get delivered groceries. Very worried (1)”*
- *“It has affected us as I got very ill and am a single parent, meaning that I was unable to properly care for the children while so ill. Also I have developed panic attacks and generalised anxiety which is impacting on my ability to work efficiently (2)”*
- *“I’m in the very vulnerable group. I won’t be allowed to leave home which means my daughter will need a carer and extra support if she wants to go out (3)”*

IncomeMax

- Since COVID-10 there has been an influx (step change) of new customer groups that have never had to rely on welfare or government support (e.g., have previously been self-sufficient).
- Some ex-employers are being supportive when, for example, someone handed in their notice just before COVID-19 lockdown (i.e., as long as they remained on the payroll they could be furloughed to go back

to the employer).

DWP Twitter posts (non systematic selection by domain experts, IncomeMax)

- What about the thousands who started new jobs to better ourselves after the feb 28th cut off and before the #coronavirus hit the UK but now sit **suicidal** in the gap entitled to nothing despite being lifelong tax payers? #newstarterjustice #newstarterprotest #newstarterfurlough
- **we aredead.....no money no food.....**4 weeks in isolation UC no answers....i have no other way to provide for my children and i don't care about the bills....i will have to go out and improvise something.
- Yeah exactly I agree I had my PIP stopped wrongly with the appeals now have been delayed which is very convenient I now living on not a lot and **done know how I'm going to feed my self** or pay for my utilities due to my **complex health and disability,I will be taking up a NHS bed!**
- What about the thousands who don't qualify (I'm a student) and have changed jobs after the 28th of February? I've paid tax, NI and contributed for many years before I decided to study and I'm left with a small student loan to survive now. **You have sentenced me to poverty**
- Got my letter yesterday to tell me it's being taken away. The welfare system has kicked me when I'm down already, **made me physically ill** & caused a flare up of my health just when I don't need to go to a hospital mid pandemic.
- You've taken my mobility allowance away at a time I can't call upon others for help, even a hug at the **immense stress** i'm now under as a single@parent with **multiple health issues**. I'm not sure how my EDS & POTS have gone away magically since I was awarded it last year.
- have been trying to get through for 7 days, no luck over 6 hours spent on the phone waiting in total, and today once again it says call back another time, **what are we supposed to do?**
- Over 7 days trying to get through. Over an hour every day. All to close a claim. Still can't get through and **anxious** about my situation now. Absolutely abhorrent service.

Anonymous Financial Services Provider:

One large lender/financial services organisation reported:

- “A recent increase in suspect transfers into accounts from a normally trusted source has flared tempers. Banks can freeze accounts that receive suspect transactions to prompt contact with customers to support an investigation, but cannot tell customers when an account is frozen for this reason, as this could constitute “tipping off”, a criminal offence itself. Customers impacted, on attending branches and not getting the answers they seek, have reacted in varying ways – and in this environment of heightened stress on all sides, staff have had cause to call police to branches to help address threatening customer behaviour. Whether this is stressed out staff who have a heightened sense of risk, or stressed out customers worried about access to their money and with less access to support (longer wait times at contact centres, shorter branch opening hours) isn't clear – but the activities of fraudsters are able to have a much greater impact into today's unusual environment.”
- “A well meaning advert or internal comms piece, intended to show solidarity and support, has triggered a response in branch colleagues who are having to work in PPE, interpreting the vague government guidance on social distancing to the best of their ability – the majority of their colleagues being able to work from home (which, while it has its own challenges, is perceived by those on the front line as easier and less challenging).”

Healthy Virtuoso

- Most users are trying to find any way to do sports and stay active. We believe they really miss endorphins as we have been seeing examples of people running up to 200 times around their house blocks.
- There has been an incredible increase in the usage of home training (video tutorial), yoga and meditations apps that we have tracked from a lot of users.

The Mind and Soul Foundation

“...The resultant uncertainty [COVID-19] has acted as a catalyst to renewed religious practice, particularly prayer. Search engines like Google have recorded exponential increase in page requests for prayer, approximately doubling with each 80,000 new global cases. Uncertainty has historically been relieved by religious practices, and

after a period of extended stability we are seeing a return to dependence beyond personal confidence in medical provision and into the divine.” Rev Will Van Der Hart

Dark Web (insights by The TellFinder Alliance)

- The child sexual exploitation offender community on the dark web has been taking full advantage of the increased number of kids online and the increased amount of time they are spending on various online platforms. Offenders are adapting their grooming strategies to target newly trending platforms (e.g. Zoom) as well as discussing the increase in "soft" material, i.e. parents posting more pictures and videos of their young children as they spend more time at home with them. There is also an observable change in pattern-of-life as many offenders are able to spend significantly more time on their computers during quarantine. The evidence here is primarily anecdotal, as there is not yet enough data for robust quantitative analysis.
- Law enforcement investigators are on heightened alert and are continuing to go into houses for warrants, arrests and child rescues, at the risk of COVID exposure.

Table 3: Quantitative data insights

Quantitative Insights

Ieso

Referral numbers:

In the weeks since the lockdown was announced in the UK, Ieso Digital Health saw an 84% increase in referrals to our service, relative to the same time period in 2019. The patterns of change in referral numbers, and particularly referral pathways (i.e. service vs self-referrals), are complex and dynamic, and difficult to interpret at this early stage. We will continue to monitor and explore these data in more detail during the next stages of this crisis, including research on the impact of the Covid-19 on other variables, such as clinical presentation (diagnosis, symptom profile and severity), average treatment duration, and clinical outcomes.

Patients' clinical presentation:

Ieso Digital Health routinely uses natural language processing and machine learning models to quality control care delivery and to assist with service delivery operations, such as therapist allocation to patients. In the context of this work, we have observed changes in patients' language as they present to the service. Patients describe the mental health difficulties they are experiencing and the reasons bringing them to therapy in a self-assessment questionnaire. We have observed that 20% to 30% of patients are mentioning Covid-19 in this questionnaire. While this does not necessarily indicate that 20% to 30% of patients are having mental health difficulties caused by the Covid-19 crisis, it clearly suggests a significant impact of Covid-19 on patients presenting with mental illness.

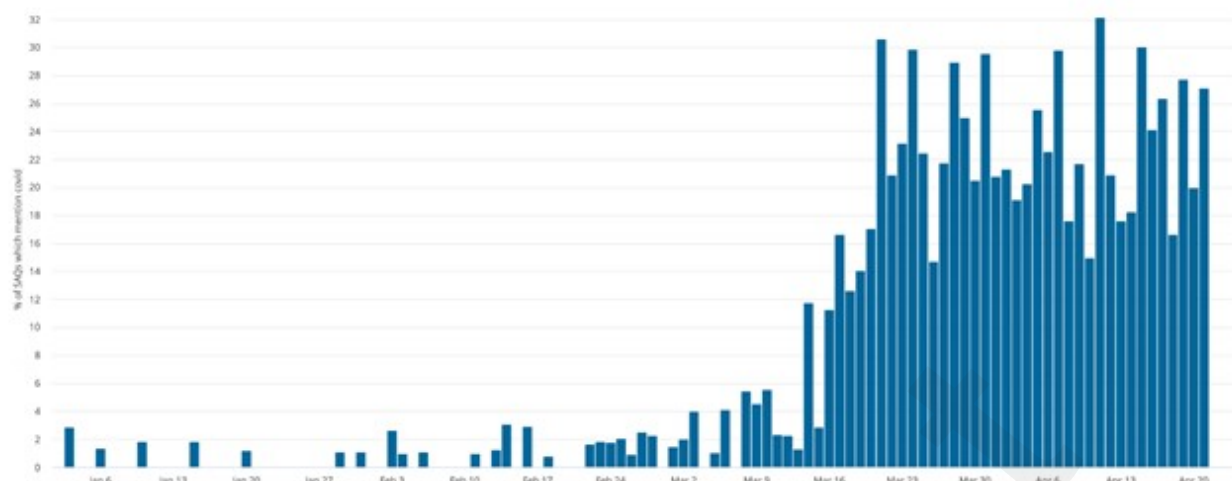


Figure 1 – Increase in percentage of self-assessment questionnaires mentioning Covid-19 related words with time, for the first quarter of 2020.

Worry themes in therapy:

Ieso Digital Health has also explored the impact of the Covid-19 crisis on patient language within therapy sessions, and specifically on worry themes mentioned by patients. During March 2020 we observed a significant increase in worries about viruses, including coronavirus and Covid-19. Approximately 15% of worries in therapy sessions in March were about viruses, coronavirus or Covid-19. This compares to approximately 40% of worries about family, and 5% of worries about finance, which remain stable over time.

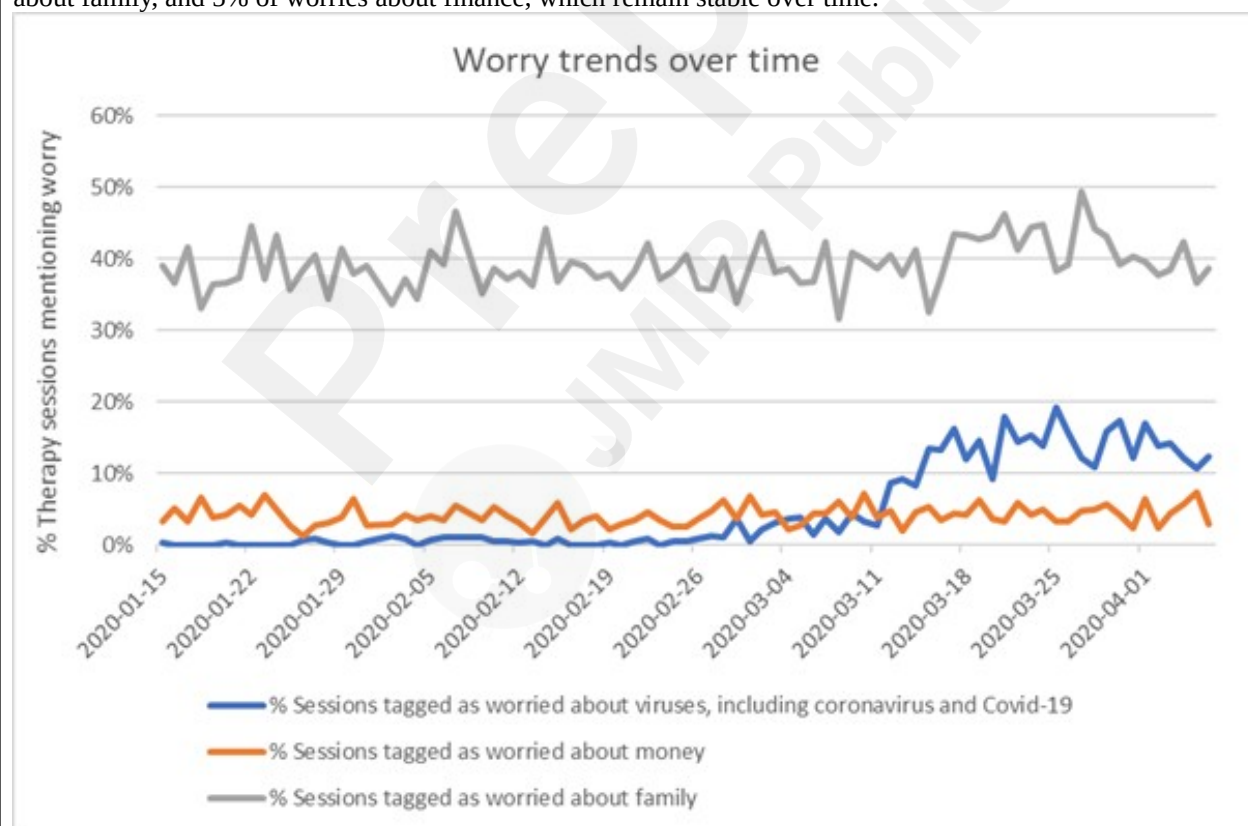


Figure 2 – Percentage of different worry themes in therapy sessions mentioning worries, across time, for the first quarter of 2020.

Babylon (UK clinical operations only):

- We have had more concerns about child safeguarding flagged by our clinicians in the past month; there has been a 35% increase in concerns reported.
- In March 2020 21.1% of all appointments conducted in the UK were for COVID related problems with an almost even split between NHS and private cases.
- Significant increase in demand for both private and NHS services digitally but supply matching demand at present
- 4.2% of all coronavirus cases are coded as "patient concerned about covid-19" however not clear if related directly to mental health
- Since 20th January 2020 we have had over 20,000 coronavirus related appointments; this can vary from questions about self isolation and social distancing to concerns about symptoms

Vala Health

- Vala saw a 3x increase in our registered profiles base from 10th March to 8th April
- Vala facilitated a 2x volume of video consultations with our GPs during that time period (to be expected when the GP clinics shut)
- Our GPs reported 4/10 appointments were 'Covid' related during this period, but just 20% of those Covid related appointments actually mapped to a potential Covid diagnosis (referral for a test) and 80% were likely symptoms of stress and anxiety (short of breath, elevated heart-rate, increase in potential temperature, but not fever)
- Our mental health related case work also increased significantly over that period, with an increase in requests for mental health related medication, however, we believe that was people 'panic stocking', and in most cases our GPs talked the member into an alternative strategy
- Statistically all four of the patterns above slowed down to what we would classify as a 'normal' level at the beginning of April.

Ooca

The number of video counseling sessions increases 229% compared between Feb-Mar 2019 to 2020 and the usage surge 70% in Feb20 compared to Jan20. About 10% of sessions is related to COVID19 topics directly.

XenZone (Kooth & Qwell)

- Evaluated 2 sets of data across both Kooth and Qwell platforms. Comparisons between 1st March - 5th April 2019 and 1st March - 5th April 2020
- Home environment: 460% increase in concerns about child sexual exploitation (CSE), 260% increase in concerns relating to teenage pregnancy, 150% increase in concerns, relating to Alcoholic parents/environment, 380% increase in parental mental health issues, 55% increase in concerns around physical abuse [These increases represent small numbers of people but demonstrates an increase in trends from same time period 2019].
- General presenting issues are changing: (1) Increases in sadness (up 161%), health anxiety (up 155%), sleep difficulties (up 90%), concerns over body image (up 43%), eating difficulties (up 31%), loneliness (up 23%), bereavement (up 20%); (2) Decreases in growing up/independence (down 81%), aspirations (down 63%), exam stress (down 55%), sense of belonging (down 38%), confidence (down 37%), friendships (down 25%), self-worth (down 18%), boyfriend/girlfriend issues (down 19%). Presenting issues are logged by counsellors during counselling sessions and reflect the concerns and issues raised by service users.
- Increase in logins from the same time period in 2019 of 35.1%.
- Nearly a third of users (31%) are writing and/or interacting with COVID 19 specific content.

Silver Cloud Health

Changes in numbers of clients using online mental health versus before COVID-19

The following table displays the change in users in the largest 25 NHS providers across England and Wales that use SilverCloud for iCBT services. The data is accurate as of 27/04/20, (i.e., the final numbers for April may increase):

Service		Jan	Feb	Mar	Apr	Apr increase	Apr Decrease	TOTAL
1	Northeast England	315	443	799	531		33.5%	2088
2	Southeast England	456	405	524	395		24.6%	1780
3	North West England	377	378	495	613	23.8%		1863
4	Southwest England	146	162	368	601	63.3%		1277
5	London	219	264	347	428	23.3%		1258
6	Northwest England	162	134	387	528	36.4%		1211
7	South England	254	274	253	214		15.4%	995
8	Liverpool	298	212	190	259	36.3%		959
9	South East	125	117	358	376	5.0%		976
10	South England	205	198	265	168		36.6%	836
11	Southwest England	124	130	459	110		76.0%	823
12	West Midlands	158	183	116	305	162.9%		762
13	North England (Yorkshire)	146	146	153	181	18.3%		626
14	London	154	137	143	185	29.4%		619
15	East Midlands	111	144	167	239	43.1%		661
16	Southwest England	1	547	122	59		51.6%	729
17	Greater London	155	171	190	65		65.8%	581
18	Greater London Suburbs	79	74	206	267	29.6%		626
19	Central southern England	180	138	121	97		19.8%	536
20	Manchester	110	102	139	219	57.6%		570
21	North East England	66	109	115	317	175.7%		607
22	London	82	115	136	257	89.0%		590
23	Wales	125	117	142	152	7.0%		536
24	Southeast England	65	67	94	372	295.7%		598
25	North England (Yorkshire)	104	119	148	105		29.1%	476
	TOTAL	4217	4886	6437	7043	9.4%		22583

Changes in symptoms at mental health services (UK IAPT)

Exploratory analysis of our data shows that there is as yet no evident increase in the level of symptoms of depression and anxiety across services, or indeed when focusing the analysis on some of the larger services. This is true both when comparing mean symptoms scores for March and April of years past (2017-2019) compared to 2020, and when observing trends from the past 12 months. It is difficult to make any broad conclusions from this, only that the profile of users assigned to iCBT within UK IAPT services remains largely the same. Yet there is the likelihood that these will change over time as the impact of COVID-19 takes hold.

Changes in usage at mental health services (UK IAPT)

- Data from 3k+ users in the month of April 2020 show that the average time spent on the platform for each login has increased with respect to the same time last year, with users spending an average of 4min more each time they login. This is especially evident in programs such as the Space from Anxiety program. In April 2019, users were spending an average of 16.0 min each time they logged in to the platform [95% CI 15.0-17.1). Now in April 2020, the average time spent per login has significantly

increased to 21.5min [95% CI 18.6-24.4].

Further Observations:

- Across IAPT, the adjustments to lock-down took some time and there is evidence that service levels for digital treatment are in fact increasing. SilverCloud Health who serves 70% of IAPT services noted a 10% increase in use of digital treatments for the population (see table above), right across the country.
- Whilst overall the number of users in the last month has increased by 10% (likely to be closer to 20% when final figures for the month of April come in), some services have already seen a two or even three-fold increase in users from March to April.
- The observed 10% increase in rates of new users among NHS providers in the UK may be a preliminary indication of how services are evolving and responding to the first sights of the pandemic in terms of mental health care.
- Users are engaging more with the programs, which might be an early indicator of an increased focus on solutions for mental health difficulties and stressful factors, as they relate to the current pandemic.
- The rapid development of new content emphasizes one key advantage of digital interventions, which is the capability of rapidly deploying new content. This is especially relevant in a rapidly evolving situation like this pandemic, where the mental health needs of the population may evolve and change over time.

CBTclinics

Pre-COVID-19

- 60% of patients chose in-person face-to-face therapy sessions
- 40% of patients chose digital video, audio or online therapy sessions

Peri- COVID since lockdown

- 100% digital video, audio or online delivery now being provided.
- 13% of all F2F patients have been unable or unwilling to move to digital delivery due to their personal circumstances (technology, living conditions, unwillingness to engage remotely).

Minddistrict

- The number of minutes used for video calling sessions between professionals and their clients using the Minddistrict platform has multiplied by 80 times when compared to before the Coronavirus crisis
- There are now 3 times as many professionals and clients using the Minddistrict platform compared to before the Coronavirus crisis

Big Health

Data is majority NHS staff which has had 4 weeks to collect data from launch. Social care has had less than a week from launch. Baseline data collected from health and social care staff indicate that this population has mental health need:

- **Sleepio data, n= 6,904**
- SCI-2 (sleep condition indicator) was 2.92 out of 10.
- PHQ-2 was 2.06 out of 6.
- GAD-2 was 2.63 out of 6.
- **Daylight data, n= 2,196**
- SCI-2 was 4.3 out of 10.
- PHQ-2 was 2.82 out of 6.
- GAD-2 was 4.21 out of 6.
- Note SCI-2, PHQ-2 and GAD-2 are established clinical screening tools.

Qare

Teleconsultations with a psychiatrist or psychologist:

- Number of teleconsultations with a psychiatrist increased by 382% in March 2020 compared to February 2020
- Number of teleconsultations with a psychologist increased by 195% in March 2020 compared to February 2020
- The main reason was anxiety

Mon Sherpa (personal chatbot assistant for mental health issues):

- Downloads increased by 201% in March 2020 compared to February
- Daily Active Users increased by 133% in March 2020 compared to February
- Average number of sessions per active device increased by 7% in March 2020 compared to February
- A majority of users sought help linked to the current lockdown in France, of which 30% regarded sleep issues

COVID-19 accelerated our growth, which was already quite substantial before the pandemic.

Biobeats

This analysis is conducted on 102 users showing enough data to be included into the analysis, i.e. the users that have more than 60% of Heart Rate (HR) data recorded (more than 86 Heart Rate observations to a maximum of 144 per day - the HR data are recorded every 10 minutes) during the investigation period. The time period analyzed is from March, 7th to April, 14th.

- In our cohort, sleep quality deteriorated versus pre-COVID19: the number of awakenings during the night continuously increased from the first day of March (number of awakenings = $0.5738 + 0.0049 * \text{day_number}$; $r^2 = 0.11$; $r = 0.34$). Moreover, the total time awake and consequently the mean of the time awake during each awakenings phase are longer than the days before the lockdown. The longer time awake detected during the night suggests that users sleep worse due to the stress stimulus induced by the isolation. Heart Rate Variability (SDNN24) was affected in the first week of isolation (low variability), probably due to the high stress perceived from users induced by the change in their habits.

Unmind

Analysis 1:

- For this particular group analysis, our sample size was $n = 274$. We conducted within-subjects group comparisons using the Unmind Index (a bespoke self-report measure of mental health and wellbeing validated in the UK against the GAD-7, PHQ-9, CORE-OM and WEMWBS) between the periods 7th October - 31st December 2019 (pre-Covid) and 16th March - 21st April 2020 (peri-Covid).
- Between pre-Covid and peri-Covid timepoints, anxiety levels significantly increased ($p_{FDR} < .001$). Interestingly, users also reported significantly higher subjective evaluation of, and satisfaction with, their physical health in the peri-Covid period ($p_{FDR} < .01$).

Analysis 2:

- In a separate analysis, we compared the Index scores of healthcare workers ($n=11,849$), to those of a non-healthcare user group ($n=9,854$) for the period 16th March - 21st April 2020.
- Compared to other sectors, healthcare workers scored lower across the Index overall. Compared to the rest of our user base, healthcare staff report feeling less able to cope (-13.9%; $p_{FDR} < .001$) and less able to manage anxiety (-21.6%; $p_{FDR} < .001$).

Additional:

- Within our day-to-day mood tracker, the frequency of users identifying anxiety as one of their primary emotional states was 38% higher in the peri-Covid time period compared to pre-Covid.

distrACT

- iPhone downloads in the last 90 days: We noticed a 359% increase in downloads (5.36K) compared to downloads in the preceding 90 days (1.17K). Most of these were on or around 11 April 2020. Territory: 5.18K of 5.36K downloaded within Europe. Of these, 5.15K were in the UK.
- Android downloads in the last 90 days: 762 (24% increase to the previous three months).

<p>Alpha Health</p> <ul style="list-style-type: none"> • Negligible increase in stress from March to April. This was statistically significant in Spain, but not in the USA or UK. • More than half of our active users (56.8%) engaged with the Covid-19 content • Due to a parallel marketing campaign, we are unable to make any conclusions regarding increased demand during the Covid-19 outbreak.
<p>NHS London IAPT Clinical Leads</p> <ul style="list-style-type: none"> • In the initial weeks of March 2020 as the lockdown was announced in the UK, IAPT London Clinical Leads reported local service decreases in referral numbers of up to 50% in some boroughs (see qualitative section for more details).
<p>ORCHA Health</p> <ul style="list-style-type: none"> • Compared to the same time last year, ORCHA has experienced a 181% increase in page views (52,801 to 148,604), a 279% increase in users of the site (8,104 to 30,674), and a 258% increase in condition specific searches (8,275 to 29,665). • Specific to mental health, ORCHA have observed an 86% increase in searches for apps for the treatment of anxiety, a 176% increase for apps dedicated to the management of depression, a 328% increase in searches for apps related to sleep, and a 7500% increase in searches for health-apps related to the prevention of self-harm.
<p>Public Mental Health Services South Australia, Clinical Leads</p> <ul style="list-style-type: none"> • Number of clients referred to <u>IAPT service</u> have increased by 30% from 17th March - 20th April when compared to the same period in 2019. Notably, the proportion of referrals coming from the Emergency Department has nearly doubled from 25% to 58%. Therapists subjective feedback suggests an increase in chest pain/psychosomatic cases. • Early insights from <u>sixteen regional mental health services of South Australia</u> suggest people with severe mental illnesses are having less frequent contacts with mental health professionals as a result of Covid-19. Since 12th March 20 when COVID-19 restrictions were introduced the number of contacts made by case managers with patients has almost halved when compared to a similar period last year (12th March 2020 to 24th April 2020 vs 12th March 2019 to 24th April 2019). During this period the proportion of contacts made remotely (telephone, videoconference) has increased by 20%.
<p>Wysa</p> <ul style="list-style-type: none"> • Wysa witnessed a 77% increase in new users during February-to-March 2020, as compared to the same period in 2019. • The proportion of users who referred to COVID-19 during therapist sessions increased week-on-week during March 2020, from 5% in the first week to 60% in the fourth week. • Usage of digital self-help tools related to stress/anxiety, sleep, relationships and Covid went up by 55%; from 49% of total tool engagements to 76% of total, between the 1st and third week of March 2020.
<p>Owlie</p> <ul style="list-style-type: none"> • +10% Total Users (organic acquisition) in the period March 16th - April 22th 2020 (beginning of the containment period in France). • +100-500% Daily New Users since the announcement of the containment in France compared to February 2020 • +50% Daily Active Users in March compared to February • Compared to the same time period in April 2019, there was a 50% increase in the number of Owlie's users. • The most frequently used modules during this period are crisis management and therapeutic tools for anxiety
<p>Riliv</p>

There has been an 80%-85% increase in demand for both online counseling and subscriptions to online meditation February - April 2020 (compared to January 2020)

StopBlues

During the lockdown period (from March 17 to April 22 2020), StopBlues has witness:

- 146% increase in the total number of users per day during the period as compared to the same period in 2019 (24,787 compared to 10,049).
- 162% increase in users who created an account for using StopBlues as a supporting aid compared to the same period in 2019 (24% in 2019 to 64% in 2020).
- Longitudinally, when comparing trends over similar intervals of time (36 days) before and after the lockdown start date (17/03) in 2020 and 2019, the increase in users who created an account for getting support is 5 times higher during the lockdown period (+65%) than it was over the same periods in 2019 (+13%), showing a greater need for support during the pandemic period.

Overall, StopBlues users rate their average mental health as fair to poor:

- There are no significant changes between the lockdown period and the same period in 2019. However, the overall Mood followers' scores at the start of the pandemic in France in March 2020, were slightly worse than in March 2019 (-6% for spirit). They also followed an opposite trend: while they improved from Feb to March 2019, they worsened in 2020.
- The drop in scores among new users creating an account at the start of the pandemic in France in March 2020 were 3-4 times greater with a 20% decrease in moral/spirit, 4-5 higher in energy with a 9% decrease and 2 times higher in overall feelings with a 11% decrease
- In April 2020, all users were better on all these indicators. (We do find the same trends between March and April 2020 in a qualitative cohort of 60 people that we interview every two weeks since the beginning of the lockdown period)

BeyondNow

- 53% increase in downloads of its suicide safety planning app Beyond Now from February to March 2020, compared to a 17% increase from January to February 2020.
- Monthly downloads for Beyond Now differ across seasons and are usually highest during the winter months in Australia, from June to August. Downloads in autumn months (March to May) are, on average, two-thirds of the downloads recorded in winter months. Downloads for March 2020 exceeded the winter average by 9%.

Neurum Health

Mood journals are a form of ecological momentary assessment, which captures users' mood and contextual data to understand certain risk factors and triggers in their natural environment.

- 9% of all mood journals submitted were directly flagged as COVID-19 related between Feb-April 2020.
- 80% significant average increase in negative sentiments recorded on the app between January-April 2020.
- 8.1% significant average increase in users reporting stress detected between Feb-April 2020
- 67% significant increase in users reporting anxiety in their mood journals between March-April 2020.
- Top contextual factors tagged to negative sentiments in mood journals:
 - February 2020: Relationships (39.29%), Work (21.43%), and Sleep (14.29%)
 - March 2020: Work (27.27%), Self (22.01%), Relationship (13.40%)
 - April 2020: Work (25.56%), Self (22.04%), Relationships (15.02%)

Our team did our best to parse out inputs that may have been related to the protests at their height in Hong Kong between June 2019 to January 2020.

Spill

- Website traffic more than 2x any previous month
- More business enquiries for the Spill product in the last 2 months (Mar-Apr) than in the previous 2 years
- +188% active users of the Spill Slack app in mid Mar - mid April vs. previous 30 days

- +171% increase in questions asked to therapists over message in mid Mar - mid April vs. previous 30 days
- +446% increase in number of therapy sessions in April vs March

MumsNet

(1) Survey results:

Date: 27th - 30th March; Number of respondents: 1,398

61% are concerned about their own mental health during lockdown

67% are concerned about their children's mental health during lockdown

49% are concerned about their partner/husband's mental health during lockdown

Date: 3rd - 6th April; Number of respondents: 1,016

65% are concerned about their own mental health during lockdown

69% are concerned about their children's mental health during lockdown

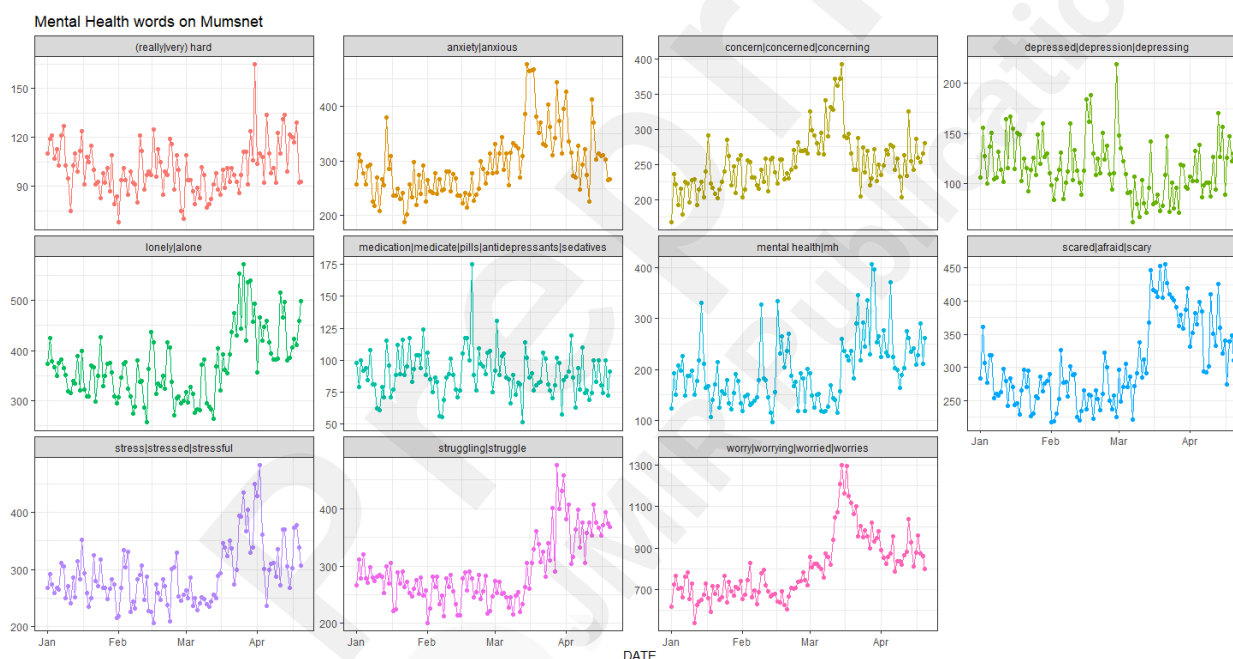
53% are concerned about their partner/husband's mental health during lockdown

69% feel more stressed that they usually do

61% report that their sleep is more disturbed than it usually is

72% are concerned about their family's mental health during the coronavirus outbreak and the lockdown

(2) Mumsnet graphs showing the changes in use of key mental health related terms:



Key findings from plots above:

1) moderate mental health words are more likely to have seen an increase (eg struggling, worry, scared, alone, mental health) than stronger terms (anxiety, depression, medication). This may be for a number of reasons - users might be more likely to understate or not discuss their specific conditions

2) there are two different peaks we see - a) the middle of March when social distancing started - here we see more expectant words worry and scared and b) the end of march when lockdown started, here the words are more present tense and stronger eg struggling, alone. However irrespective of the peaks all words have reduced since the end of March as our users have got used to Lockdown life, although their usage has stayed consistently higher than before lockdown.

[Additional notes to reduce/edit/remove/keep: A few key things to notice. One is the scale on the y-axis, this differs by words. I did this, as if all the y-axes had the same scale, many would be unreadable. So we have worry words with a max number of occurrences in a day of 1300 compared to medication with a maximum daily number of 175. Obviously the higher the maximum, the more reliable the data (ie less likely to be random). I'll go through

all the graphs counting them 1-11 according to placement:

- 1: The number of mentions is low but we do see a slight increase since the end of March. Magnitude is probably not high enough to be reliable.
2. This peaked mid-March (this is very common for a lot of the words - we had a big increase in posting at the start of the crisis, this has remained high but settled slightly). These words stayed higher than average after the mid March peak.
3. Peaked in mid-March and then went back to approximately normal levels.
4. No COVID impact at all
5. Peaked late march and now has an average of about 100 more daily mentions than prior to crisis.
6. No significant COVID impact.
7. Has seen consistent change (increase) since start of crisis in mid-March
8. Big increase in mid-March, reduced a bit but still higher than average before crisis.
9. Big peak at end of March, which has reduced a bit since then.
10. Usage appears to have gone up by 1.5-2 times since start of crisis with peak at end of March.
11. Huge jump in mid March with 1300 mentions in a day in mid-March compared to 700-800 a few days before. Has calmed down, but still about 2-300 more mentions a day than before the crisis.]

The Mighty

Insights based on a weekly survey to Mighty members. We have collected around 45K responses over 5 weeks. About 20-25% of those identify as having a mental health condition.

- Impact to healthcare is rising - 79% of those with a mental health condition say their access to healthcare has been impacted (up from 57% four weeks ago)
- 72% have missed regularly scheduled appointments, and 24% are having difficulty accessing medications or treatments
- 29% say their condition has worsened (up from 15% four weeks ago)
- 89% say their daily life has been at least somewhat impacted by increased anxiety; 43% say it has been extremely impacted
- 45% say their relationships have become more strained overall; 26% say they have become stronger. The top reasons for relationships becoming stronger are spending more time with loved ones while top reasons for strain is inability to leave home or see loved ones
- The community reports long wait times or lack of available of telehealth appointments as a major struggle in getting the care they need
- The community feels their mental health conditions are deprioritized by the healthcare community due to a focus on COVID-19

TalkLife & TalkCampus

- In the UK, there has been a 20% increase in monthly active users since COVID19 began.
- In terms of engagement on the platform during this period, we have seen a 25% increase in content across comments, posts, and messages.

Wisdo

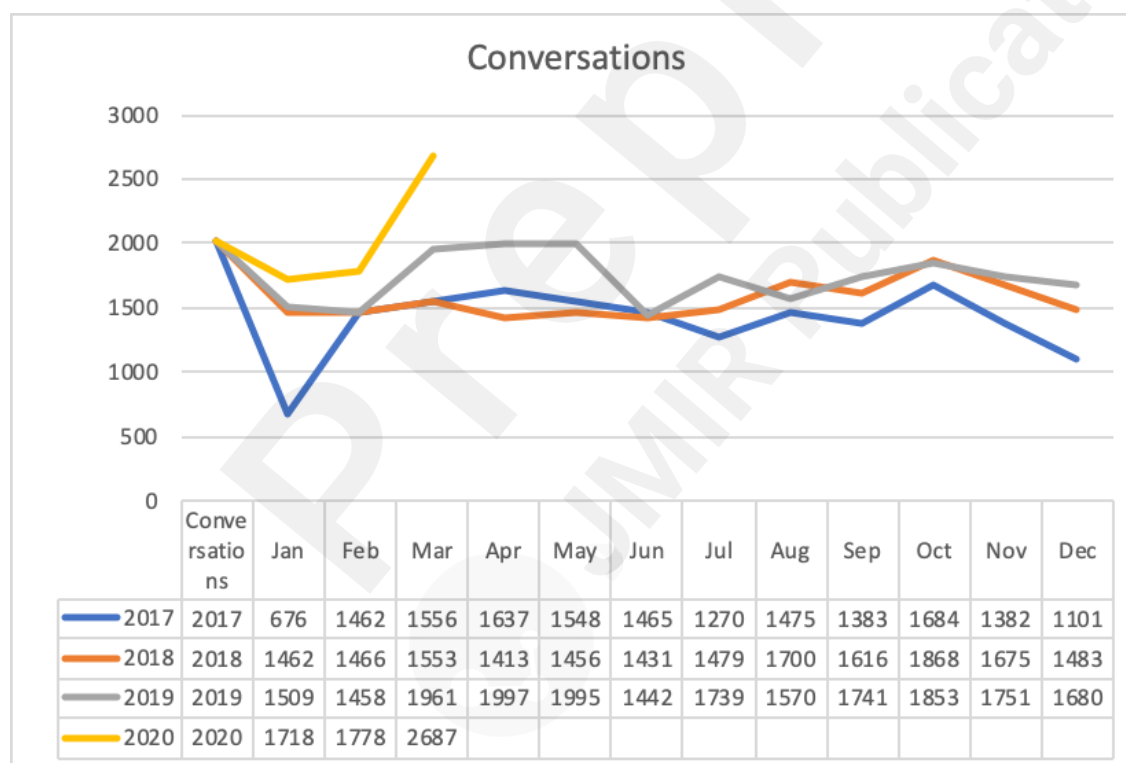
- 283% increase in the number of people daily replying to other people's messages in groups (i.e, increases in the engagement around people answering other people in groups.)
- +100% increase in the number of people daily joining more group communities
- +75% increase in the number of searches daily
- +53% increase in the number of "Instant Chat" requests, meaning people looking to instantly connect to someone 1:1 who's "been there", for support
- +20% increase in the number of people watching user generated videos, to get them through the day
- +115% increase in the number of people weekly willing to step up, become "Wisdo Helpers" and be there for others.
- Average daily sessions per user have risen from a high of 3 a day on av. pre Corona, to 7 a day on av. now.
- Graphs and week-by-week trends can be found here (page 5 onwards):
<https://docs.google.com/document/d/1yiWmlZORI0uMlrYwUMoc7ic64PGEb1mUW6GXsIUuf64/edit>

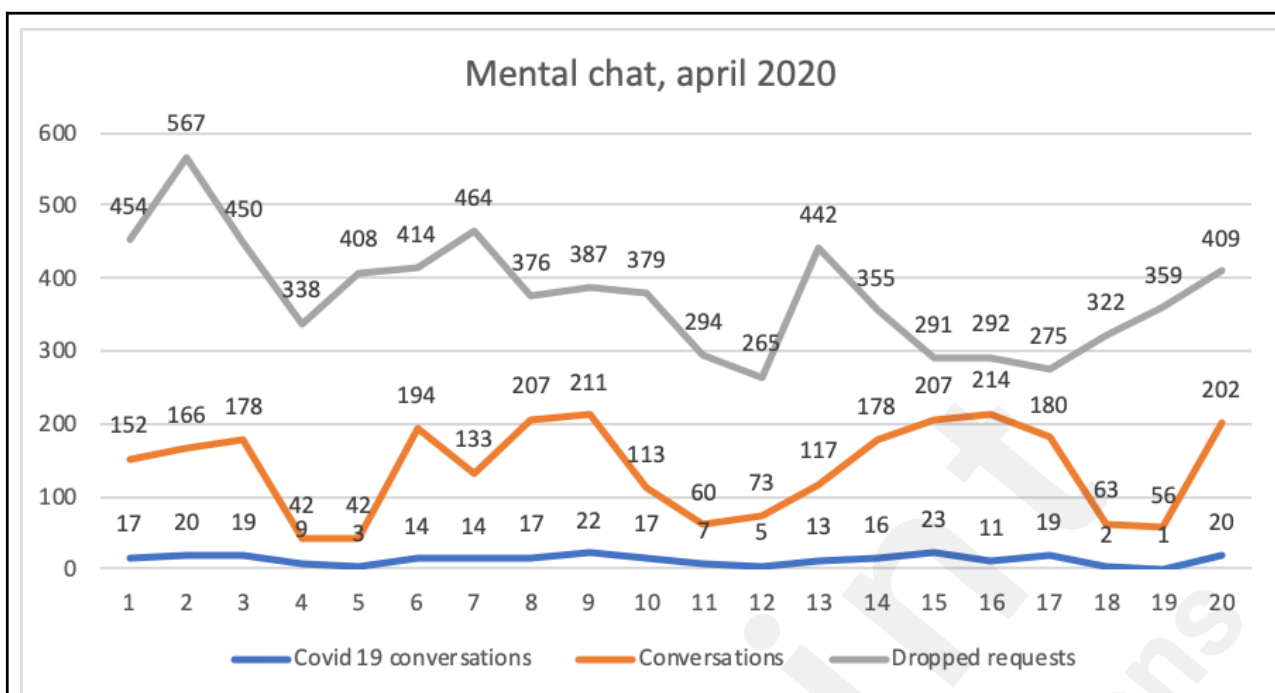
MeeTwo

- There were 27 suicidal posts between 8.30am and 8pm on 22nd March 2020 (48 hours after schools were closed), as compared to 406 suicidal posts in all of 2019.
- There was a 95% increase in level 4 (severe risk) between 20th March and 4th April 2020, as compared to 20th December 2019 and 4th January 2020.
- 116% increase in level 3 (high risk) posts between 20th March and 4th April 2020, as compared to 20th December 2019 and 4th January 2020.

Mental-chat

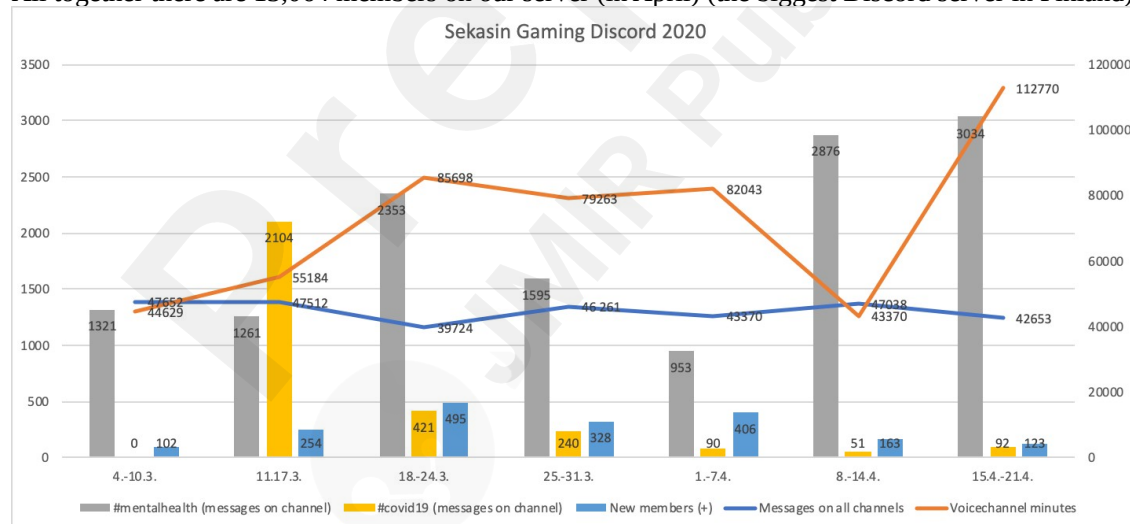
- Data gathered by the staff / volunteers who work on Mental-chat
- After February, We've trained 267 new professionals and 88 volunteers to work on Mental-chat
- Comparison between January-march 2019 and 2020 shows 13% increase on dropped chat requests (they don't get through due to massive queue), and 25% increase on chat conversations
- Based on the 2 first weeks of April we are going to make a new record of chat conversations in a month (in 2 weeks already 1870 conversations)
- Covid19 has been discussed in 7% of the conversations. Young people have been mostly concerned about school, their mental health during lockdown at homes, concerned about loved ones (grandparents f.ex.). Also many of them feel concerned about their mental health while offices are closed, therapy sessions cancelled or moved to online which does not suit everyone. Other significant topics 1.1.-19.4.2020 : feeling bad (includes anxiety, feeling depressed, eating problem fiers), 26%, relationship issues 13%, problems with everyday life 11%, suicidal thoughts, plans, attempts 10%





Mental Gaming

- First week of the Covid-19 outbreak Finland was very busy. After that it has calmed down a lot.
- We opened #korona channel to our Discord server and will keep it open as long as necessary (first week 1478 messages, after that 45-144 per week)
- #mentalhealth channel has been hugely popular throughout Covid-19 crises
- Increase of members +821 within 16.3.-29.3., after that 90-almosta 500 new members per week.
- All together there are 13,064 members on our server (in April) (the biggest Discord server in Finland)



Teen Line

Insights are based on hotline data (text & emails only with remote hotline) analyzed from March 13 - April 18, 2020 and compared to the same time period in 2019:

- Overall hotline contact has increased by 6%.
- Increase of reports of loneliness by 35% and child abuse by 115%

Insights based on the number of active users of Teen Line message boards, an online community of over 38,000 youth worldwide. Data reflect the time period of March 13-April 20, 2020:

- As compared to the same time period in 2019, there was a 29% increase in the number of youth visiting Teen Line's message boards.

Insights based on comparison of Feb 2020 to March 2020 for Teen Talk, peer support app, with over 28,000 users:

- 55% increase in monthly active users
- 50% increase in new users

Papa

When our members (elderly) initially enroll into our program, we screen them using scales shown below. After 6 months of usage we reassess our members using the same measure:

The UCLA's Loneliness Scale: These results are scored and categorized into three levels of loneliness: "not lonely", "lonely", and "severely lonely".. In our most recent analysis, we found:

- Loneliness impact: On average, 53% of those using our service felt less lonely (in other words, scored lower on the UCLA loneliness scale)

We use the CDC's "Healthy Days Measure" to assess physical and mental unhealthy days. This measure is a 4-item set asking participants to quantify the amount of days they felt physically unhealthy and mentally unhealthy in the past 30 days:

- When we analyzed our impact on mentally/physically unhealthy days, on average, our members' unhealthy mental days lessened by 14% and unhealthy physical days lessened by 16%.

We perform monthly updates/analysis of our members. This analysis was performed last month for Early March and beyond.

Digital Peer Support

- there has been a 50% increase in the amount services being provided digitally for digital peer support
- 750 Peer support specialists have been trained in digital peer support (digitalpeersupport/certification) and they are able to leave their virtual doors open. The certification is associated with increased confidence and capacity to use digital peer support (see qualitative section for more details).

National Alliance on Mental Illness (NAMI)

NAMI Helpline:

- Since COVID-19, NAMI has experienced an increase in demand for online/virtual mental health support and resources. Looking at year-over-year NAMI Helpline inquiries for the period covering March 1 – April 23, during this time in 2019 there were 5,103 calls, call backs and emails compared to the same time in 2020 which had 7,191 calls, call backs and emails. This represents a 41% increase in demand for Helpline resources and information.

NAMI Basics OnDemand (launched in October 2019):

- We provide parents with access to the resources and in January 2020, we had 512 registrations, whereas in just the first week of April 2020 (4/1-4/8) we had 3,481 registrations. Average NAMI Basics OnDemand registrations per day: 17 in January: 435 in April.

Mental Health America

- (1) **General Anxiety Disorder-7 (GAD-7):** The number of GAD7 anxiety screens taken in March 2020 was 22% higher than February 2020, and about a 25% increase over the average number of anxiety screens over November 2019-February 2020. The pace of anxiety screenings in April has increased even more. The average per day number of anxiety screens increased 67% since January 2020, reaching 513 screens

per day in the first half of April (4/1-4/15). 45% (N=4,994) of people who took an anxiety screen in March (N=11,033) scored for **severe anxiety**. In the first 15 days of April 2020, 44% (N=3,366) scored for severe anxiety.

- (2) **Pediatric Symptom Checklist-35 (PSC-35):** There was a 20% increase from Q4 2019 to Q1 2020 (N=7,313 in Q1) in people taking the youth screen (PSC-35). The percentage of youth screening at risk for emotional, attentional or behavioral difficulties on the PSC-35 has increased every month since October 2019. In March, 76% (N=2,172) of youth who took the youth screen scored at risk. This was a 5% increase from February 2020 (N=1,652), and a 10% increase over the average rate of at-risk screens in Q4 2019 (N=4,023).
- (3) **Patient Health Questionnaire-9 (PHQ-9):** There was an 18% increase in the number of PHQ-9 depression screens between March 2020 (N=16,481) and February 2020 (N=13,954). The percentage of people who scored moderate to severe depression on the PHQ-9 increased 3% in March 2020 (to 83%, N=13,745) compared to February 2020 (80%, N=11,151). (i.e., both the number of screens increased and the rates of severe screens increased, indicating that more people were coming to look for mental health screening and when they screened, more people were screening as severe.) We thought people were taking more screens because of coronavirus when the screens increased in February, but in April we added the coronavirus question and it confirmed what we speculated, which is that isolation and coronavirus are major challenges that are bringing people to screening.
- (4) In response to the question “What are the main things contributing to your mental health problems right now? Choose up to three,” the main reported concern among people taking an anxiety screen was loneliness or social isolation (58% of respondents, N=701). The second most common concern was coronavirus (48%, N=572).
- (5) On March 16th, Mental Health America launched a covid resource page that is updated daily to provide information, resources and support to the mental health community at <https://www.mhanational.org/covid19>. 106,985 users viewed the content since it launched with an average of about 20k users a week.

UK Mental Health Foundation

Polling of over 2000 UK adults aged 18+ (weighted to be representative of UK adult population) once before UK restrictions (t1: 17-18 March) and again just after (t2: 2-3 April) *All figures, unless otherwise stated, are from YouGov Plc:*

- People reporting they felt lonely up from 10%(t1) to 24%(t2)
- Most pronounced for people aged 18-24 16%(t1) to 44%(t2) and 25-34 14%(t1) to 35%(t2)
- 26% reported the pandemic was “making my existing mental health problems worse” (but no change between t1 and t2)
- 65%(t2) reported being worried about becoming ill with the virus (58% at t1)
- 54%(t2) reported feeling panicked or afraid (52% at t1)
- 65%(t2) reported feeling anxious or worried (62% at t1)
- When asked about coping with stress (only asked at t2)
- 20% reported drinking more alcohol (highest in the 35-44 age group 28%, higher in social groups ABC1 (23%) compared to C2DE (16%))
- 7% reported smoking more (highest in age 25-34 (10%) higher in social groups C2DE (9%) compared to ABC1 (5%))
- 30% reported eating too much (women 35%, men 24%, people aged 18-24 42%)

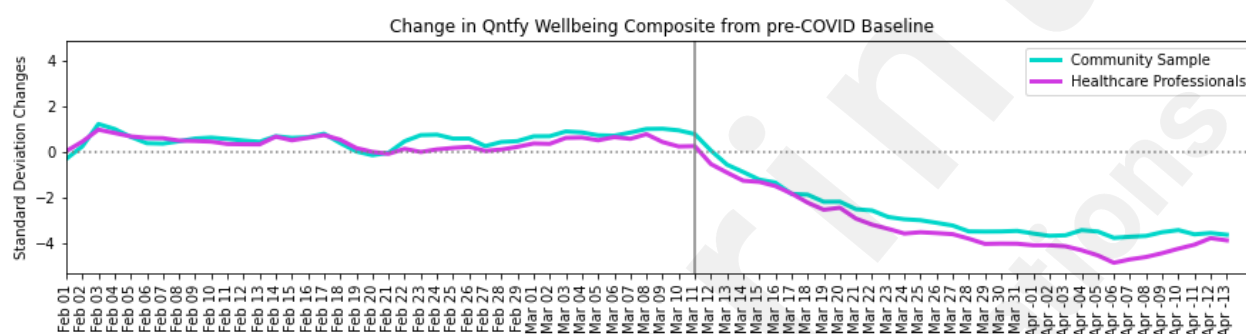
Qntfy

Qntfy has a collection of users who work on the front lines of the COVID-19 pandemic as healthcare professionals (n=25,046), and a sample of the general population (n=10,000) -- all of whom speak English and have posted at least 100 messages on social media since March 1, 2020. For all these users, we have public social media data going back at least into 2019. Qntfy's models for anxiety, depression, and suicide risk are used here to score the language of each message from the users in the cohort -- these were created via similar methodology as

(ref 11), but have significantly more users and improved machine learning techniques applied). A composite well being score is derived from these individual message-level via proprietary methods, but can be generally understood as follows:

1. Each message was scored by each model, producing a single score per message.
2. Message scores were aggregated across models and over short windows of time (order days) to produce estimates of wellbeing per day per person.

Here, we plot the average well being score per day for each of these cohorts. Both cohorts have decreased since the onset of COVID-19 and the associated lockdowns (indicated here by a vertical gray line around March 11th). While the wellbeing of the general population has decreased, the wellbeing of the healthcare providers has decreased more, which is cause for some significant concern. Omitted for brevity are similar phenomena for the individual results from Qntfy's depression, anxiety, and suicide risk models independently.



Practicing NHS clinician in North West London and Dorset specialising in general medicine): Insights provided by Jasvinder Kandola.

- In a patient population of 14,000 patients there has been a 64% increase in the number of consultations relating to stress, anxiety and low mood since social isolation / distancing was introduced by the UK government.
- A retrospective analysis of anonymised patient records revealed 97% of all patients cited Covid-19 and social isolation as being the main contributing factors to their decline in mental health.
- There has been a 69% increase in consultations related to mental health where patients have never consulted about mental health issues before (stress, anxiety, depression.)
- In the period March 1st - April 18th 2020 there has been a 83% increase in the prescription of first line anti-depressant medications as per NICE guidelines across all age groups.
- In the over 80s age group there has been a 91% increase in prescription of anti-depressant medication
- 0.6% of the over 70s admitted making use of the UK government isolation helpline

Google trends (Hannah Stewart): <https://trends.google.com/trends/explore?hl=en-US&tz=-330&geo=US&q=coronavirus+anxiety&sni=6>

- 'Interest' for the term "anxiety symptoms" doubled globally between the week of March 8 and March 22.
- The week of March 22, the search term reached a new five-year peak. In Spanish speaking countries, that peak came a week sooner. Conversely, interest for "depression symptoms" fell during the same time period.
- 'Interest' in "panic attack symptoms" has nearly doubled from February 16 to March 22. Like "anxiety symptoms", "panic attack symptoms" reached a global five-year high during the week of March 22.
- 'Interest' for the term 'meditation' has grown in popularity and 'online CBT' has increased in recent weeks whereas 'suicidal thoughts' and 'anorexia' appear to have decreased.
- "OCD symptoms" hit a global peak in "interest" the week of April 19 (this past week) and has been on the rise since March 22.
- "OCD" has been on the rise since the week of March 15 and is at a current "interest" of 90 (essentially measured as 90% as popular as it's highest search interest ever). "Obsessive-compulsive disorder" is at its global peak and has been trending up since March 15.
- "Managing OCD" has also jumped up over the month of April, but Google says the data is incomplete.

"Managing anxiety" trended up starting the week of 2/16 and hit its peak the week of 3/15. It's been trending downward since then.

Money & Mental Health Policy Institute (MMHPI)

Respondents reported a range of concerns about how changes as a result of coronavirus might affect their finances:

- 62% - worried about having to access the benefits system
- 57% - worried about losing their job
- 56% - worried about creditors chasing them for money

Turn2us

Turn2us information on mental health of service users based on 6,198 survey responses from users of benefit calculator and 250 responses from grant applicants, since 16th March 2020

ONS4 Wellbeing questions:

- 47% reported 'high' anxiety levels - an increase from 38% pre-Covid
- 36% reported low 'life satisfaction' - an increase from 34% pre-Covid
- 28% reported low levels of feeling life was worthwhile (4 or below on an 11-point scale) - no change since pre-Covid
- 41% reported low levels of happiness (4 or below on an 11-point scale) - an increase from 36% pre-Covid

Ability to pay for rent and mortgage:

- Currently, large proportions are unable to afford rent and mortgages, as a result of coronavirus and its impact on employment.
- On benefits calculator, 58% of users who have had employment affected are unable to afford rent or mortgage payments, compared to 34% of users who have not seen work affected by covid
- On our grants programme, 70% of users who have had employment affected are unable to afford rent or mortgages, compared to 30% of users who have not seen work affected
- Ability to pay for housing, and the fear of homelessness (seen a lot in the qualitative responses) is probably a factor in the stress and anxiety that people on low incomes are experiencing in the UK
- There are no differences seen in users' ability to afford food or heating, due to coronavirus affecting employment, although the % is still relatively high. 30% of all users are currently unable to afford food and 33% are unable to afford heating or electricity

Anonymous Financial Services Provider:

One large lender/financial services organisation reported:

- Details to be inserted once payroll analysis completed end of April

Tully and OpenWrks Group

This sample data is formed of people (N=1822) who have selected to come to Tully for Covid-19 financial and well-being support:

- 50% of people's income has reduced due to COVID-19. A reduced income includes furloughed, reduced hours and reduced pay.
- 19% have lost their income due to COVID-19. Lost income includes redundancy and unpaid leave.
- From a subset of 650 self-employed customers:
 - 80.7% have declared that they don't have any work coming in due to COVID-19.
 - 12.15% have a reduced workload due to COVID-19.

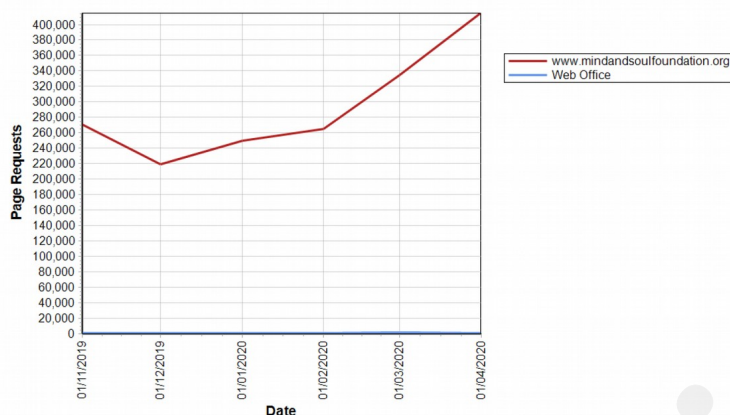
The Mind and Soul Foundation

The Mind and Soul Foundation created a web report from their website showing the number of page requests between November 2019 to today (see Figure and Table below). Articles that reference Covid and faith have been particularly read and on average receive a x4 hit rate to our usual readership.

Page Requests per Month

The Mind and Soul Foundation

01 November 2019 - 27 April 2020



Darknet markets analysis, with some caveats and anecdotes (The TellFinder Alliance)

From The TellFinder Alliance (<https://tellfinder.com/>)

Dark Net Markets: COVID insights

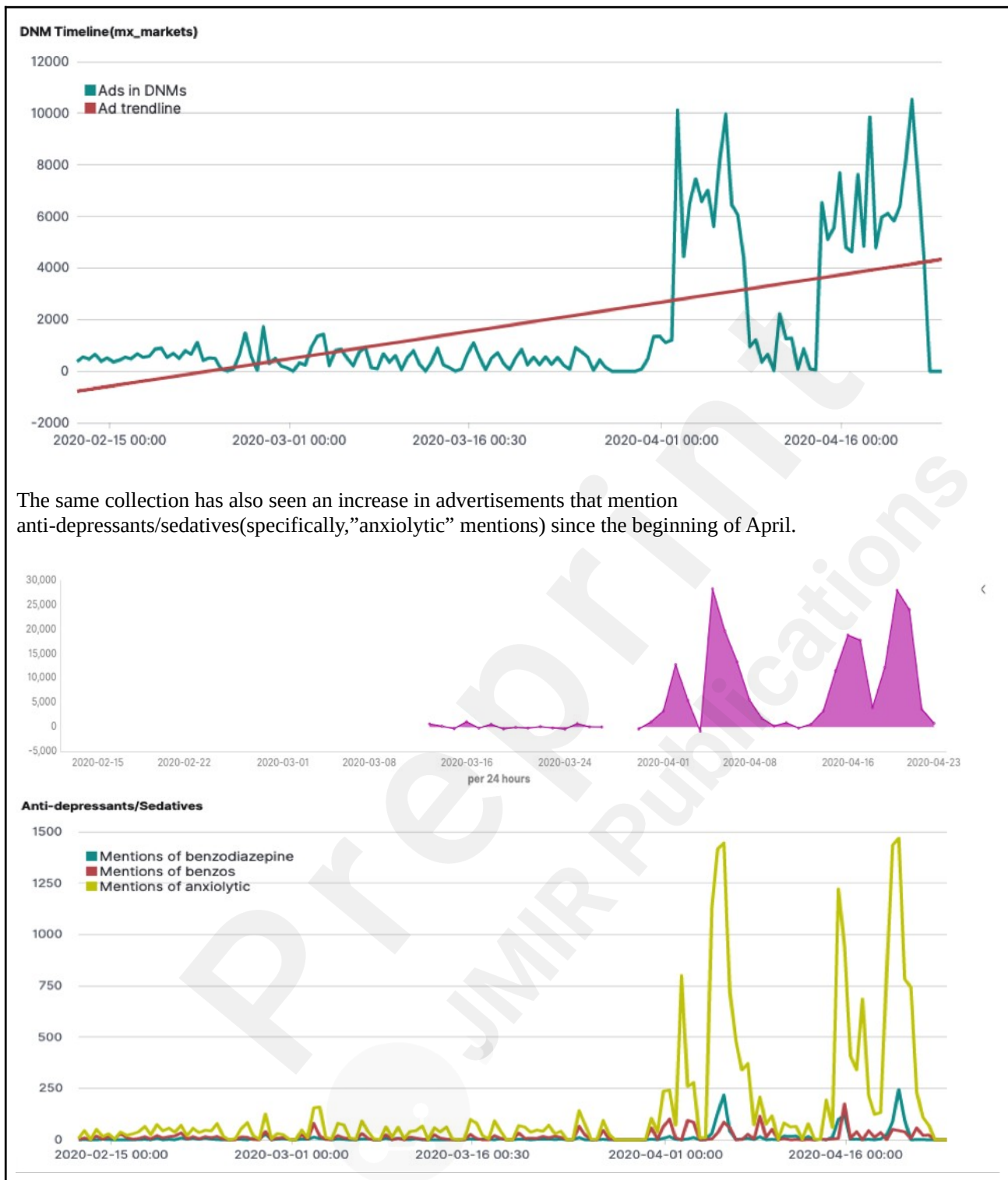
We examined two questions (asked by BI):

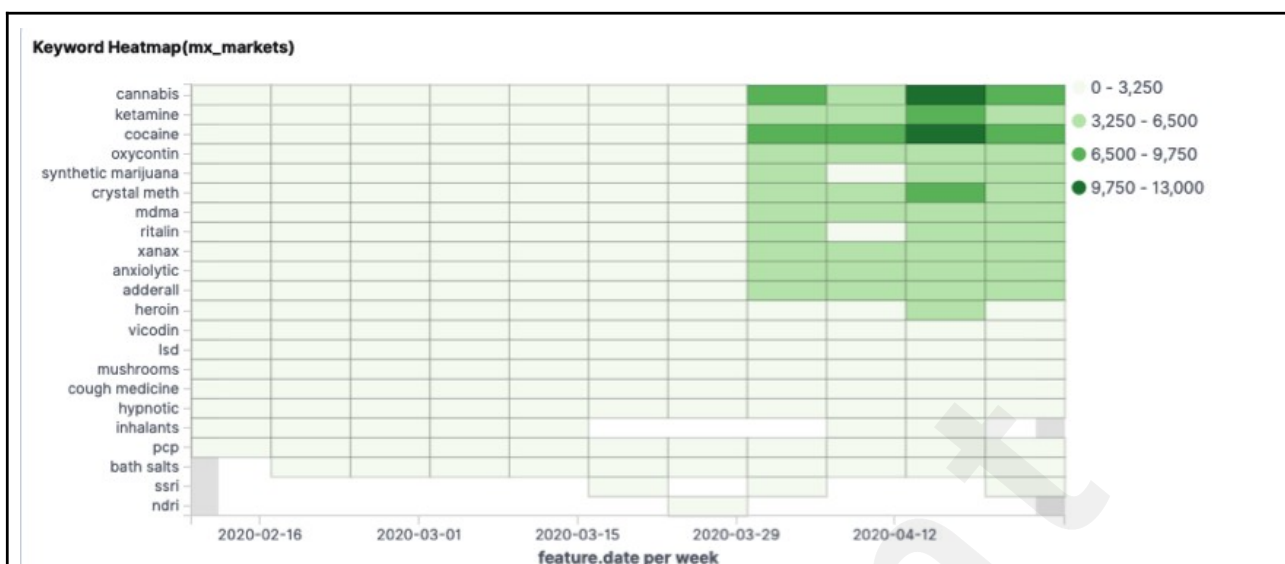
1. "I suspect... that we might start to [see] increases in opioid drug sales and other antidepressant related drugs like anxiolytics."
2. "Are people selling covid solutions on the dark net markets?"

TellFinder dataset details:

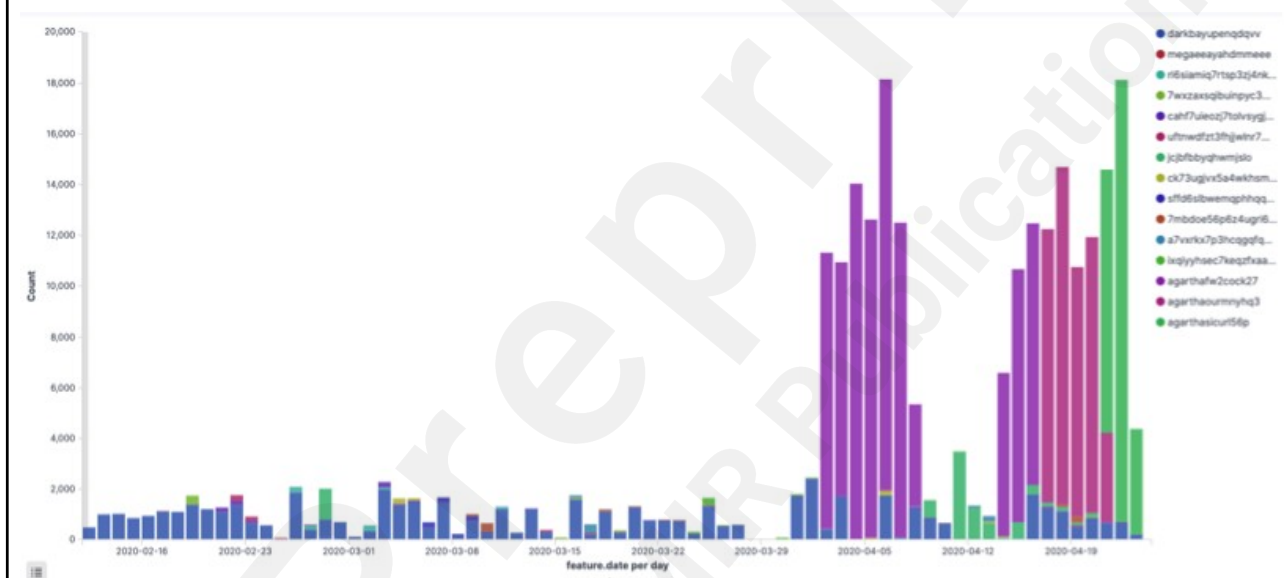
The dataset used to identify high-level insights for the above questions include advertisements for goods and services posted on darknet websites. Specific insights related to effects of the pandemic on the market range from mid-January of 2020 to mid-April. Please note that complications with data retrieval/cleaning may be seen through "spikes" and are acknowledged within the analysis. Because these spikes are addressed within the analysis, overall trends should be treated as an accurate reflection of the dataset.

Within the TellFinder DNM collection, we've seen an overall increase in advertisement postings in the last 2 months (Feb.15.2020 - current).





We've also observed an increase in new Tor websites (aka ".onion" urls) with advertisements for anti-depressants/sedatives (specifically, "anxiolytic" mentions) since the beginning of April.



Summary of Findings: We have observed a marked increase in anxiolytics / SSRIs roughly associated with the COVID-19 pandemic timeline. We also have an increase in ad collection that corresponds with the same period. We have to be careful not to conflate this finding with an uptick in ads more generally, but even holding out the new collectors we still see an upward trend in anxiolytics and SSRIs.

Anecdotes: There are new advertisers within the space mentioning drugs, including "tested and trusted" vaccines for the virus, and advertisements for suicide assistance drugs, which do not adhere to the Samaritan's media guidelines about not describing or naming methods of suicide
<https://www.samaritans.org/about-samaritans/media-guidelines/>

Healthy Virtuoso

- the average steps per user has drastically dropped to an average of 2000 steps per day per person. Can we compare this to before COVID19 somehow either compared to this time last year?
- The Average number of sports that have been practiced has drastically dropped due to the impossibility of going out - Is there a number or percentage we can add, compared to this time last year?



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- MeeTwo
- DistrACT
- XenZone Kooth & Qwell
- The Mighty
- Wisdo
- BeyondBlue & Beyond Now
- Qntify (Glen Coppersmith)
- Teen Line
- TalkLife & TalkCampus
- Its OK To Talk
- Minddistrict
- Silver Cloud Health
- Babylon
- Owlle
- Qare
- Centre for Mental Health, UK
- Vala Health
- Money & Mental Health Policy Institute
- IncomeMax
- Mumsnet (CEO Justine Roberts)
- Alpha Health
- Riliv
- Ooca (Daf Rakphetmanee, Kanpassorn Eix Suriyasangpetch)
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- Neurum Health (Megan Chor Kwan Lam, Christine Hiu Man Chiu)
- The TellFinder Alliance (Amanda Towler, Danielle Smalls, Chris Dickson, Andrew Stroz,
- Turn2us (Jo Kerr)
- Biobeats (David Plans)
- Open Banking Excellence (Helen Child, Tatyana Marsh)
- Big Health (Charlotte Lee)
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- OpenWrks Group (CPO)
- Papa (Andrew Parker)