

BMJ Open Impact of COVID-19 on patient health and self-care practices: a mixed-methods survey with German patients

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ABSTRACT

Objective This study aimed to examine German patients': (1) self-estimation of the impact of the pandemic on their health and healthcare; and (2) use of digital self-care practices during the pandemic.

Design Cross-sectional mixed-methods survey.

Setting and participants General practice patients from four physicians' offices located in urban and rural areas of Bavaria, Germany, between 21 July 2020 and 17 October 2020. A total of 254 patients participated (55% response rate); 57% (262 of 459) identified as female and participants had an average age of 39.3 years. Patients were eligible to participate if they were 18 years or older and spoke German, and had access to the internet.

Results (1) Healthcare for patients was affected by the pandemic, and the mental health of a small group of respondents was particularly affected. The risk of depression and anxiety disorder was significantly increased in patients with quarantine experience. (2) Self-care practices have increased; more than one-third (39%) of participants indicated that they started a new or additional self-care practice during the pandemic, and about a quarter (23%) of patients who were not previously engaged in self-care practices started new self-care activities for the first time; however, such practices were not necessarily digital.

Conclusions Further investigation is required to understand the relationship between digital self-care and public health events such as the COVID-19 pandemic, and to develop strategies to alleviate the burden of the quarantine experience for patients.

INTRODUCTION

The COVID-19 pandemic has put enormous strain on healthcare systems and has upended the provision of healthcare. Even for those who were not directly affected by the virus itself, the provision of healthcare services was substantially altered.¹ Concerns have emerged that the postponement of treatment for non-COVID-19 conditions, such as cancer, heart attacks, or stroke, could have significant negative consequences.² Furthermore, with mounting uncertainty, physical and social distancing, job loss and decreased access to support services, the pandemic has increased

Strengths and limitations of this study

- The mixed-methods approach, including validated scales for depression and anxiety, and open-ended qualitative answers on well-being and new health promotion practices, enabled breadth and depth of insight of the study.
- Results are limited to the period after the 'first wave' of the pandemic in Germany and prior to the second lockdown and thus may underestimate the psychological constraints experienced during the second long-term lockdown period.
- Patient involvement in study design and data interpretation was not feasible.

established risk factors for mental health problems.³ Recent studies suggest rising rates of depression, anxiety, and stress symptoms during the pandemic.^{4–11}

These 'secondary' effects of the pandemic on physical and mental health constitute a significant challenge and require novel approaches given the ongoing course of the pandemic.^{7 12} One prominent approach that has emerged to assist patients—in lieu of routine healthcare or other ways of maintaining health that are not available during the pandemic—is digital self-care.^{13–17} Self-care, defined by the WHO as 'the activities that individuals, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health',¹⁸ has taken on new forms in the digital era. The growth of the internet and personalised portable devices, such as smartphones, activity trackers, and other digital applications has given rise to emerging forms of digital self-care, a range of practices of maintaining and promoting health without formal medical direction that largely became possible through the datafication and digitisation of patients' bodies and lives.¹³ Many of these practices entail measurements or technologies that were previously only available

under clinical supervision, which have now moved into the hands of patients. Proponents have predicted that digital self-care represents a novel, cost-effective, and empowering way of addressing the mental and physical health needs of patients.¹⁶ Indeed, the current pandemic has given rise to a range of digital self-care tools that can be used at home,^{19–21} and has renewed interest in existing digital tools, such as therapeutic chatbots.²² It remains unclear, however, if patients are engaging in digital self-care practices to address health needs brought about by the pandemic.

Germany, and the state of Bavaria in particular, provides a useful setting to examine these issues. The first confirmed COVID-19 case in Germany occurred in Bavaria in late January 2020.²³ Soon after, Germany began to introduce public health measures to slow the spread and contain the pandemic.²⁴ During March and April 2020, measures began affecting the German health system; dentists' and doctors' offices closed or changed their services, hospitals received orders from the federal government in March 2020 to postpone non-essential operations,^{25 26} and intensive care capacities in hospitals were expanded. During spring 2020, Bavaria was also under a 'strict lockdown' in this period, with a stay-at-home order in place, and non-essential shops and businesses along with schools and daycare centres were closed.²⁷ Furthermore, Germany is one of the world's first countries to approve digital health apps for prescription as part of a new law on digital medical care.²⁸ It is therefore expected that such digital health tools will be increasingly used by German patients. Research conducted before the pandemic indicates that patient-driven digital self-care is currently lagging behind expectations.¹³ Nevertheless, a number of COVID-19 digital tools for patients have emerged in Germany, such as symptom trackers (eg, Data4Life app) and self-help apps for depression.²⁹ This study therefore aimed to examine German patients': (1) self-estimation of the impact of the pandemic on their health and healthcare; and (2) use of digital self-care practices during the pandemic.

METHODS

The methods of the study are presented in accordance with the 'Strengthening the Reporting of Observational Studies in Epidemiology' statement and the 'Standards for Reporting Qualitative Research'.^{30 31} The full length survey is available in the online supplemental appendices 1 and 2.

Survey implementation

A cross-sectional survey was conducted between 21 July 2020 and 17 October 2020. Patients from four general practices in the urban and rural areas of Bavaria were consecutively invited by the practice assistants to participate. Patients were eligible to participate if they were 18 years or older, spoke German, and had access to the internet. Office assistants asked eligible patients who visited in the office during the recruitment period for an

appointment if they would like to participate in the study. A total of 459 individuals were provided with the study information sheet in print form, which included a link to the online survey. Office assistants received a small monetary compensation for their help. The online survey was conducted using the automation software EvaSys (EvaSys Central Evaluation V.8.0). Data were then exported into SPSS V.26 for Windows (IBM Corporation). Participants who completed the survey were eligible to claim a €10 gift certificate for Amazon.

Survey content

In order to assess the overall well-being of the participants during the pandemic, two subscales of the German version of the Patient Health Questionnaire (PHQ-D) were used to assess depression and anxiety as psychological comorbidity.³² The depression severity score of the PHQ, the PHQ-9, ranges from 0 (no depression) to 27 (maximal depression). Superior validity of the PHQ compared with other established self-report questionnaires has been confirmed with respect to the diagnoses of 'major depressive disorder' and 'other depressive disorders' according to the International Classification of Diseases (ICD-10).²⁰ Another module of the PHQ-D, the Generalized Anxiety Disorder Scale (GAD-7), was used as a practical self-report anxiety questionnaire that has been validated in primary care.³³ GAD-7 scores range from 0 to 21, with scores of ≥ 5 , > 10 , and ≥ 15 representing mild, moderate, and severe anxiety symptom levels, respectively. Only moderate and severe scoring were rated as anxiety disorder.

Additionally, a questionnaire was developed to examine the impact of the pandemic on patients' lives and health, and new digital self-care practices. The survey was informed by existing literature on the secondary effects of the pandemic and changing practices of digital self-care,^{13 17 34–36} and combined scaled or yes/no questions, with free-text responses. Demographic questions asked for the participants' age and gender. Two questions asked in the survey were removed due to inconsistent answering patterns.

Data analysis

Baseline data were analysed descriptively. For the analyses, we included all participants who answered the respective question. Associations between the questions regarding the self-estimation of the healthcare situation and depression or anxiety disorder were investigated separately with multivariable logistic regression models. Survey questions were included into the models as predictor variables. We controlled for potential confounding by including age and gender into the models. Hypotheses testing was performed with an exploratory two-sided test using a significance level of 5%. All analyses were performed by SK and AS in SPSS V.26 and R V.4.0.3 (The R Foundation for Statistical Computing). Qualitative data from the open responses were analysed by AF using conventional content analysis, with a focus on conceptual analysis. Initial topics emerging from the responses were identified

using a process of open coding, codes were generated and grouped based on higher order categories.³⁷ Two other investigators (AB, SM) reviewed the initial analysis to ensure consistency and validity, and conversations among the investigators continued until consensus was achieved. Variance and saturation within the responses was analysed and described. Quotes included in this article were translated from German to English.

Patient and public involvement

No patient was involved in the design of this study.

RESULTS

Characteristics of participants

A total of 459 patients were invited to participate. Of these, 57% (262 of 459) identified as female. The average age of invitees was 40.6 years (SD 16.1). Of those invited, 254 eligible patients participated in the survey, corresponding to a 55% (254 of 459) response rate. Of the participants, 56% (144 of 254) identified as female. The average age of the participants was 39.3 years (SD 15.7) and the median age was 37 years, ranging from 18 to 81 years old. The majority of participants had not had any symptoms of COVID-19 during the 3 months prior to the survey (218 of 254; 86%). Only 17% (44 of 254) of participants reported having had conducted a COVID-19 test, but only 9% (4 of 44) of those received a positive result. However, 6% (16 of 254) reported that they presumed they had COVID-19 due to the presence of symptoms, despite not having taken a test. Quarantine was reported by 11% (28 of 254) of respondents. The PHQ results indicated that 17% (45 of 254) of patients suffered from impaired mental health, 6% (17 of 254) suffered from depression, 4% (11 of 254) suffered from anxiety disorder, and 6% (17 of 254) suffered from both depression and anxiety disorder.

Impact of the pandemic on health

One-third of respondents, 30% (75 of 254), indicated that their healthcare was affected by the COVID-19 pandemic (**table 1**). When asked to specify how their healthcare had been affected, respondents offered examples in the open-ended questions, including changes in appointment availability at their doctor's offices due to closures

or modifications due to the pandemic (**table 2**; qualitative data with exemplary quotes are included in the online supplemental appendix 3).

One participant noted that 'Normal doctor's visits were no longer possible in the initial period. All appointments were canceled by the doctors. Only emergencies were possible.' Another described unexpected interruptions in care: 'After an operation I was in inpatient rehabilitation. This was planned for 3 weeks. However, after two weeks the [name redacted] clinic was closed to be available for Corona patients.' A few participants noted issues in receiving necessary medications or necessary medical supplies, including for chronic conditions such as diabetes. Some indicated that they had felt increased stress and anxiety, such as one person who wrote that 'One reacts more sensitively to little things that used to be ignored (sneezing, coughing, etc).' Others experienced other changes in their mental health: 'During the lockdown, sleep disturbances, increased restlessness, fears about the future.' Moreover, difficult situations were made more difficult: 'In addition, I am currently unemployed and it is even more difficult for me to find a job, since I have to wear the mask for hours on end practically everywhere during work. My psyche suffers from it. I get scared and sometimes panic, as I am now worried about my health and professional life.'

During the COVID-19 pandemic, some respondents said they had health complaints, unrelated to COVID-19, for which they normally would have gone to see a doctor. The complaints included in the qualitative responses indicated covered a wide range of health problems, from relatively minor issues such as allergies or congestion to more serious conditions such as a slipped disc or a spinal canal stenosis. In the open-ended answers, respondents indicated that their concerns related to going to the doctor during the pandemic dealt with fear of contracting COVID-19, while a few individuals indicated that they felt their concerns were not substantial enough to see their doctor given that medical professionals were dealing with more serious health concerns during the pandemic. Many participants answered with variations on concerns that, 'I could catch it from the next patient in the office.' Others cited 'Risk of infection due to my age and certain pre-existing conditions,' or doubted 'Whether my symptoms

Table 1 Impact of the pandemic on health, quantitative data

Question	Yes	No
Did you experience any health complaints during the COVID-19 pandemic (unrelated to the coronavirus) for which you would normally go to the doctor?	73/254 (29%)	181/254 (71%)
Was your healthcare affected by the COVID-19 pandemic, such as because a doctor's office was closed, appointments were rescheduled, or for other reasons?	75/254 (30%)	179/254 (70%)
At the beginning of the pandemic, several changes were made in healthcare delivery to respond to the new needs created by the COVID-19 outbreak. Many physician visits were postponed, office hours were curtailed, scheduled surgeries were postponed to a later date, etc. Do you feel that you were affected by this?	63/254 (25%)	191/254 (75%)
Do you have any fears with regard to your future healthcare?	60/254 (24%)	194/254 (76%)

**Table 2** Impact of pandemic on health, summary of qualitative data

Category	Code
How health was affected by COVID-19	
Due to COVID	Symptoms of COVID Self or relative tested positive
Due to change in care	Appointments cancelled Hard to get necessary supplies Personal concern about going to doctor
Changes in health due to increased anxiety, fear, stress	Depression Concern that one might have COVID-19 Isolation Worsening of life circumstances Stress
Changes to work/home routines	Home office More work Less work Homeschooling/childcare
Changes in free time activities with a connection to health	Specific activities not possible Loss of social contact in relation to change in activities Physical problems in relation to change in activities Time for activities changed
Changes in relation to COVID-19 guidelines	Difficulty with specific precautions Changes due to increased precautions
Changes in health	Weight gain Sleep changes Less physical activity New patterns of food/drink consumption Mental health changes Improvements
Not affected/no changes	Healthy No risks/low risk Carefully following preventative measures
Effects of quarantine	
No problems	Easy or necessary Made one appreciate non-quarantine time more Enjoyable
Mental health problems	Isolation Depression Stress
Health problems experienced during the pandemic for which one would normally go to the doctor	
Physical health problems	Allergy Infection Orthopaedic Dental Back pain Generalised Spinal Cardiac Preventative

Continued

Table 2 Continued

Category	Code
Mental or socioemotional health	Sleep problems Depression
Treatment forgone	Suspended or cancelled by medical office Suspended or cancelled by patient Self-treatment
Concerns about going to the doctor during the pandemic	
Contagion concerns	Catching COVID-19 Getting others sick with COVID-19 Quarantine
Additional hassle during pandemic	Wait times Uncertainty New COVID-19 rules Burden for doctors
None	No concerns
Effects of COVID-19 pandemic on healthcare	
Difficulty getting care	Closed medical offices Scheduling difficulties Appointments moved/cancelled Only virtual or phone care
Materials availability issues	Medication not available
Medical office concerns	Turned away due to COVID-19 concerns
Biggest challenges relating to health during the pandemic	
Healthcare concerns	Knowing when to get tested/care In relation to care for children In relation to care for self Getting medications or healthcare supplies
Concern related to COVID-19 virus	Personal risk Fear of contagion Anxiety Remaining healthy
COVID-19 guidelines	Keeping distance Mask wearing Information Quarantine
None	None
Things that would make self-care easier during the pandemic	
Nothing	None
Changes in relation to home life	Rural/urban Services Personal relationships Habits
Medical system changes	COVID-19 testing Remote care Scheduling Information
Occupational changes	In relation to employer Work load

Continued

Table 2 Continued

Category	Code
Public life	Delivery services Material needs Changes in restrictions in relation to COVID-19 Compliance with COVID-19 restrictions by others
Personal impact of changes to healthcare delivery due to pandemic	
Medical system changes	Appointments cancelled Waiting time Medical services redirected for COVID-19 care Difficulty getting care
Concerns with regard to healthcare provision in the future	
Health—concerns	Mental health Physical health Personal risk
Health—no concerns	Mental health Physical health Personal risk Personal contacts with care providers
Institutional	German healthcare-specific response Local healthcare-specific response Political institutions Economic concerns
COVID-19-specific concerns	Restrictions Vaccination Long-haul COVID-19 Tunnel vision Healthcare system concerns

were ‘bad enough’ to see a doctor.’ A majority, or 70% (179 of 254) of respondents said that they had not been affected by the changes made to the healthcare system to respond to the needs created by the pandemic, such as postponed doctors’ visits, restricted hours or healthcare services.

Digital self-care practices in the pandemic

More than one-third of respondents (38%; 97 of 254), indicated that prior to the pandemic they engaged in practices to promote and maintain their health, such as the use of health apps, participation in online support groups or sports exercises, meditation or other activities for relaxation (**table 3**).

When asked to specify what kinds of practices, the majority of respondents cited exercise such as different sports, yoga or membership in fitness studios. During the pandemic, 39% of respondents indicated that they had initiated new or additional practices to improve their health. Sixteen per cent (41 of 254) were previously engaged in self-care activities, 23% (59 of 254) of patients started new steps for the first time. The practices listed by respondents included a range of activities, many of which were not digital, such as yoga, healthier eating or new forms of physical activity (**table 4**). Some

Table 3 Impact of pandemic on digital self-care practices, quantitative data

Question	Yes	No
Before the pandemic, did you engage in any self-care measures to maintain your health, such as use of health apps, participation in online support groups, or exercise, meditation, or other activities for relaxation?	97/254 (38%)	157/254 (62%)
During/since the pandemic, have you started new or additional steps to improve your health?	100/254 (39%)	154/254 (61%)
Since the pandemic, have you sought more information about your health?	27/254 (11%)	227/254 (89%)

noted the advantages of home office: ‘Taking advantage of more flexible work schedule (virtual work) to eat more mindfully and reduce body weight by ~2 BMI points into the 25ish range.’ Many described new fitness routines, such as ‘Started jogging/walking more as an alternative to venturing out with friends to at least get out a bit,’ or efforts to relax such as ‘Self-massage of jaw muscles (watched online videos on how to do this), my friend now massages my neck and back more often, yoga exercises, exercises to strengthen arm, back and abdominal muscles, started jogging again, healthier diet, longer showers to relax.’ However, only 11% (27 of 254) indicated that they had become more informed about their health since the start of the pandemic.

Respondents were asked what the greatest challenge was for them in relation to their health during the COVID-19 pandemic. The most common response in the qualitative data involved challenges in following the COVID-19 guidelines such as wearing masks or keeping social distance from family and friends, such as one participant who wrote: ‘Keeping a distance, even from people you like very much!’ Another described the difficulties of ‘Dealing with everyday life with the social-distance regulations. Since not all people adhere to it, it makes shopping more difficult and also in professional life getting together with others.’ Other challenges included not contracting COVID-19, heightened anxiety or concern over personal health risks, and concerns surrounding getting health needs met, for example, ‘It’s more of a psychological problem for me to have to deal with anxiety all the time because you don’t know how badly the virus will hit you.’ Some participants cited specific concerns with their own health: ‘As a smoker with moderate obesity, I’m basically in the risk group,’ and ‘Since I’m 35 weeks pregnant, the impact on the pregnancy, the baby, the birth was one thing to deal with.’

About one-quarter, or 24% (60 of 254) of individuals had fears with regard to their healthcare in the future.

Table 4 Impact of pandemic on digital self-care practices, summary of qualitative data	
Category	Code
Use of medical self-care measures to maintain health prior to the pandemic	
Sport	Fitness studio courses Group sports Walking/jogging Biking
Relaxation	Meditation Yoga
Nutrition	Eating well Supplements
Getting outside	Garden work Fresh air
Treatment with professionals	Alternative treatments Standard treatments
Use of new or additional measures to maintain health during or since the pandemic; if none, why not?	
Behaviour changes	Smoking
Activity changes	Jogging/walking Fitness studio activities Biking Online digital options
Nutrition	Eating well Supplements
Relaxation	Meditation Massage Yoga
Treatment with professionals	Standard treatments
Outside	Fresh air
Changes in relation to COVID-19 guidelines	Social distancing Hygiene Staying home Mask use COVID-Warn app
None	Not necessary No risk Same as before No interest
Motivations for seeking out health information	
Increased concern	Fear
Prevention	Personal precaution Occupational precaution Precaution for others
To be better informed	In relation to COVID-19 risk In relation to personal health knowledge

The open-ended answers to this question were particularly instructive, with a majority of respondents indicating that they were not concerned because they had faith in the German healthcare system, with participants noting

that 'Even during the pandemic, I think [the healthcare system] worked much better in Germany than in many other countries around the world,' or 'Germany has a very stable and good healthcare system, so I don't see any reason to worry about it.' Others noted that their personal connection to their doctors helped to mitigate their concerns, for example, 'I trust my doctor and the system,' or 'Because I have a good general practitioner and everything is actually almost back to normal.' Approximately a quarter of respondents stated directly that they were not concerned for the future, with many citing their own fitness or lack of risk factors as the reason for their confidence.

Associations with depression and anxiety disorder

Patients with depression or anxiety disorder showed more adverse estimation of their healthcare situation (**table 5**). There was a strong association with previous COVID-19 infection and depression in the regression analysis (OR 21.41; 95% CI 1.98 to 231.12). The association between anxiety disorder and previous COVID-19 infection was not significant. Additionally, the multivariable logistic regression analysis revealed a strong association between previous quarantine and depression (OR 5.38; 95% CI 2.20 to 13.17). The association with anxiety disorder was borderline significant (OR 2.78; 95% CI 1.00 to 7.74). Survey responses regarding self-care practices were not significantly associated with depression or anxiety.

DISCUSSION

The self-estimation of the impact of the pandemic on their health showed that health was affected for many patients in only relatively minor ways. However, the provision of healthcare was affected for a greater number of people. The open-ended responses indicated that some people had significant health concerns, unrelated to COVID-19, for which they were unable to receive the necessary treatment, for example, medications that were undeliverable, or not receiving treatment for a slipped disc. The health of this group of individuals was considerably affected by the pandemic. We found no increased depression and anxiety rates. However, the risk of depression was significantly increased in patients with quarantine experience.

Self-care practices have increased during the pandemic, with a relevant number of people reporting the initiation of new activities. More than one-third (39%) of participants indicated that they had started a new or additional self-care practice during the pandemic, such as yoga, meditation, exercise outdoors or a newfound emphasis on healthy eating habits, with 59 (23%) patients who were not previously engaged in self-care practices starting new self-care activities for the first time. That said, while self-care is on the rise, there is no indication that digital self-care practices have taken on a major role during the pandemic in Germany, nor that digital self-care practices are being used in order to directly address problems associated with the pandemic.

Table 5 Association of anxiety, depression and self-rated healthcare, adjusted for age and gender (only significant associations are presented)

	OR	95% CI	P value
Logistic regression for depression			
COVID-19 positive	21.41	1.98 to 231.12	0.012
Quarantine	5.38	2.20 to 13.17	<0.001
No COVID-19 symptoms	0.20	0.09 to 0.45	<0.001
Feeling affected by various healthcare changes	4.33	1.88 to 9.99	0.001
Healthcare worsened	3.56	1.29 to 9.86	0.014
COVID-19 negative	2.46	1.05 to 5.75	0.038
Logistic regression for anxiety disorder			
COVID-19 positive	3.26	0.32 to 33.16	0.318
Quarantine	2.78	1.00 to 7.74	0.050
Health complaints during COVID-19 pandemic for which participant would normally go to the doctor	4.39	1.92 to 10.04	<0.001
Feeling affected by various healthcare changes	5.95	2.52 to 14.09	<0.001
Healthcare worsened	5.06	1.97 to 13.01	0.001
Healthcare not changed	0.24	0.10 to 0.59	0.002
Healthcare affected by COVID-19 pandemic because of doctor's offices closures, cancelled appointments	3.52	1.56 to 7.95	0.002
I cannot assess changes in healthcare delivery	2.35	1.04 to 5.31	0.040
Fears with regard to future healthcare delivery	2.30	1.00 to 5.27	0.049

The pandemic has affected different socioeconomic groups in Germany unequally.³⁸ Given that most digital self-care practices must be paid for out-of-pocket, it is possible that engagement with digital self-care may be stratified along socioeconomic lines. Further, it is possible that digital self-care fills a 'gap' in healthcare provision that may be more appealing for patients in places where basic healthcare needs are not met through universal health insurance. In places like Germany where the healthcare system is based on solidarity and basic needs are, on the whole, met for the majority of the population,³⁹ it is possible that there is less need or incentive to seek out digital self-care practices. Future research on digital self-care in Germany and also internationally can address how changes in self-care practices are related to forms of social and health inequality, and the intersections between major public health events and the need for new or different forms of care that are not available through the standard provision.

The increase in new self-care practices to improve health was not accompanied by an increase in information-seeking about health. A study in Germany found that access to health information could serve as a buffer for increased anxiety during the pandemic,⁴⁰ while another study found that nearly half of participants had difficulty judging if information about the pandemic was accurate or trustworthy.⁴¹ Thus, the relationship between information and anxiety during public health crises remains disputed,^{42 43} and further study is needed to probe the

effects of the lack of reported health information-seeking behaviour during the pandemic.

An unintended finding affirmed in this survey is that there is great confidence in German healthcare system to adapt to changes brought about by the pandemic and address health needs accordingly. This correlates with findings that 85% of individuals surveyed in Germany were optimistic about their future access to healthcare services.⁴⁴ Given that in many cases self-care is taken up to gain a sense of control over one's health, or because a particular health service is not available, is possible that widespread faith in the healthcare system leads to lower levels of digital self-care practice. When patient's needs are, on the whole, met by the healthcare system, there may be lower levels of digital self-care seeking behaviour.

The prevalence of depression and anxiety in our primary care collective was very similar to a previous survey in the same region in 2010.⁴⁵ Therefore, our findings contradict the results from a survey conducted across Germany which found significantly increased symptoms of anxiety, depression, psychological distress and COVID-19-related fear.⁴⁶ Their online survey was performed in the beginning of the pandemic, from March to May 2020. The summer period was significantly calmer with regard to the pandemic in Germany and Europe, which might explain the decreased prevalence of depression and anxiety in our study. However, our study indicates that there is a relatively small but very vulnerable patient group requiring special attention and services. There



was a strong relationship between previous COVID-19 infection and quarantine experience and increased depression. Beyond that, the qualitative analysis suggests important health concerns of many patients which might be difficult to capture with psychometric questionnaires. Therefore, general practitioners should be aware that many patients experience a psychological crisis due to the isolation.

Limitations

A limitation of the study is the response rate of 55.3%. However, there was no conspicuous difference between the consecutively invited patient sample and the responders. The proportion of patients with depression, anxiety and COVID-19 infection, respectively, was comparatively low, which explains the breadth of the 95% CIs. However, the ORs were rather high. Only patients with internet skills could participate. Many patients answered the open-ended questions with relatively short phrases or words, and given the survey format it is not possible to probe for further clarification. No socioeconomic information was recorded. Patients were interviewed before the second lockdown which lasted considerably longer than the lockdown during the 'first wave'. It is thus to be expected that patients suffered from more psychological constraints after the second long-term lockdown period. Finally, due to time constraints and challenges of coordinating a new study while all researchers were working from home during the pandemic, there was no patient involvement in the survey design or data interpretation.

CONCLUSIONS

Healthcare was affected for participants during the pandemic. There was a marked increase in self-care practices during the pandemic to promote and maintain health; however, these do not appear to be predominantly digital in nature. Given that important differences have already been seen between digital self-care practices in the literature and in Germany,¹³ further research on self-directed health promotion during the pandemic will help to illuminate how these findings from Germany compare with other locales. Our findings show that patients with quarantine experience suffer significantly more from anxiety and depression. Further research is necessary to develop strategies to help alleviate the burden of the quarantine experience, which can be particularly challenging for patients. Whether or not digital self-care tools could also be a means of alleviating some of the additional stress and isolation posed by a quarantine during a public health event can be further investigated.

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Contributors AF, AB and AS conceived of the study and designed the survey. AS was responsible for study coordination with the general practice offices. AS and SK completed the statistical analysis of the quantitative data and contributed relevant summaries for the article. AF completed the qualitative analysis of the data and was responsible for the analysing the quantitative results together with the qualitative

data. AF drafted the paper with assistance and feedback of SM and AB. AS helped with writing. All authors reviewed and approved the final version of this article.

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1. Information zur Studie “Umfrage über ethische Einstellungen und veränderte Gesundheitspraktiken zur Zeit der COVID-19 Pandemie”

Sehr geehrte Patienten,

In der beispiellosen Zeit der COVID-19-Pandemie liegt unser Interesse darin, zu verstehen, wie sich Erfahrungen mit Gesundheit und Gesundheitsmaßnahmen verändern. Um Sie als Patienten besser zu verstehen und Ihnen damit zukünftig auch besser helfen zu können, wollen wir herausfinden, ob und wie Sie von der Pandemie beeinflusst wurden.

Bitte beschränken Sie Ihre Antworten nicht nur darauf, ob Sie direkt von der COVID-19 Erkrankungen betroffen waren oder noch sind, sondern gehen Sie auch auf andere Veränderungen ein, wie etwa Änderungen bei Arztbesuchen oder bei gesundheitlicher Selbstversorgung.

Bitte antworten Sie spontan, ohne viel Nachdenken. In die freien Felder können Sie Antworten eintippen. Es gibt keine richtigen oder falschen Antworten.

Wir danken Ihnen sehr für Ihre Mitarbeit!

1.1 Bitte tragen Sie hier ein, ob Sie an der Befragung im Rahmen unserer Studie teilnehmen möchten.

- Ja, ich möchte an der Studie teilnehmen.
- (Falls nein, schließen Sie bitte dieses Fenster)

2. Umfrage über Einstellungen und Gesundheitsverhalten in der COVID-19 Pandemie

2.1 Meine Gesundheit wurde von der COVID-19-Pandemie beeinflusst:

- Sehr stark Sehr gering

2.2 In welcher Weise?

2.3 Bitte kreuzen Sie **alle** Antworten an, die zutreffen:

- Bei mir wurde eine Infektion mit dem neuartigen Coronavirus ärztlich bestätigt (etwa über ein positives Testergebnis)
- Bei mir wurde/n ein (oder mehrere) Test auf Infektion mit dem neuartigen Coronavirus vorgenommen, der/die aber negativ war/
- Ich vermute, dass ich die COVID-19-Erkrankung in den letzten Monaten hatte, weil ich dazugehörige Symptome hatte (etwa Geruchsverlust, Geschmacksverlust, trockenen Husten, Fieber, Abgeschlagenheit)
- Ich hatte in den letzten drei Monaten keine Symptome der COVID-19-Erkrankung

2.4 **NUR** wenn Sie Symptome der COVID-19-Erkrankung hatten: Haben Sie einen Arzt aufgesucht?

- Ja
- Nein

2.5 Mussten Sie sich in der letzten Zeit in Quarantäne begeben?

- Ja
- Nein

2.6 Wenn ja, wie erging es Ihnen damit?

2.7 Haben Sie während der COVID-19-Pandemie gesundheitliche Beschwerden gehabt (unabhängig vom Coronavirus), bei denen Sie normalerweise zum Arzt gehen würden?

- Ja
- Nein

2.8 Wenn ja: welche?

2.9 Wenn Sie Beschwerden hatten, sind Sie wie gewohnt zum Arzt gegangen?

- Ja
- Nein

2.10 Wenn ja, hatten Sie Bedenken, während der COVID-19-Pandemie zum Arzt zu gehen?

2.11 Wenn ja, welche?

2.12 Im Vergleich zu **vor** der COVID-19-Pandemie, hat sich Ihre Gesundheitsversorgung

- verbessert
- nicht verändert
- verschlechtert

2.13 War Ihre Gesundheitsversorgung von der COVID 19-Pandemie beeinträchtigt, etwa weil eine Arztpraxis geschlossen war, Termine verschoben wurden, oder aus anderen Gründen:

- Ja
- Nein

2.14 Wenn ja, wie wurde die Gesundheitsversorgung beeinträchtigt:

2.15 **Vor** der Pandemie, haben Sie Maßnahmen der medizinischen Selbstversorgung ergriffen, um ihre Gesundheit aufrechtzuerhalten, wie etwa Benutzung von Gesundheits-Apps, Teilnahme an Online-Selbsthilfegruppen oder sportliche Übungen, Meditation oder andere Aktivitäten zur Entspannung?

- Ja
- Nein

2.16 Wenn ja, welche?

2.17 **Während/seit** der Pandemie ergreifen Sie neue oder zusätzliche Maßnahmen, um ihre Gesundheit zu verbessern?

- Ja
- Nein

2.18 Wenn ja, welche?

ODER

Wenn nein, warum?

2.19 Informieren Sie sich **seit der Pandemie** mehr über Ihre Gesundheit?

- Ja
- Nein

2.20 Wenn ja, warum?

2.21 Was war/ist während der COVID-19-Pandemie für Sie die größte Herausforderung im Hinblick auf Ihre Gesundheit?

2.22 Was hätte es Ihnen erleichtert, in dieser Zeit gesundheitlich für sich selbst zu sorgen?

2.23 Zu Beginn der Pandemie wurden verschiedene Veränderungen in der Gesundheitsversorgung vorgenommen, um auf die neuen Bedürfnisse zu reagieren, die durch den Ausbruch von COVID-19 entstanden sind. Viele Arztbesuche wurden verschoben, der Praxisbetrieb wurde eingeschränkt, geplante Operationen wurden auf einen späteren Zeitpunkt verschoben usw. Haben Sie das Gefühl, dass Sie davon betroffen waren?

- Ja
- Nein

2.24 Wenn ja, wie:

2.25 Würden Sie diese Veränderungen in der Gesundheitsversorgung beschreiben als (Kreuzen Sie alle zutreffenden Antworten an):

- Notwendig
- Nicht notwendig
- Fair
- Unfair
- Andere
- Ich kann es nicht einschätzen

2.26 Haben Sie erlebt, dass Menschen während der Zeit der Pandemie anderen bei der Gesundheitsversorgung geholfen haben? Können Sie ein Beispiel nennen?

2.27 Haben Sie Ängste mit Blick auf Ihre zukünftige Gesundheitsversorgung?

- Ja
- Nein

2.28 Wenn ja, welche? **ODER** Wenn nein, warum?

3. Fragebogen zu seelischen Beschwerden: Wie oft fühlten Sie sich im Verlauf der letzten 2 Wochen durch die folgenden Beschwerden beeinträchtigt?

3.1 Nervosität, Ängstlichkeit oder Anspannung

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

3.2 Nicht in der Lage sein, Sorgen zu stoppen oder zu kontrollieren

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

3.3 Übermäßige Sorgen bezüglich verschiedener Angelegenheiten

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

3.4 Schwierigkeiten zu entspannen

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

3.5 Rastlosigkeit, so dass Stillsitzen schwerfällt

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

3.6 Schnelle Verärgerung oder Gereiztheit

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

3.7 Gefühl der Angst, so als würde etwas Schlimmes passieren

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4. Wie oft fühlten Sie sich im Verlauf der letzten 2 Wochen durch die folgenden Beschwerden beeinträchtigt?

4.1 Wenig Interesse oder Freude an Ihren Tätigkeiten

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.2 Niedergeschlagenheit, Schwermut oder Hoffnungslosigkeit

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.3 Schwierigkeiten, ein- oder durchzuschlafen, oder vermehrter Schlaf

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.4 Müdigkeit oder Gefühl, keine Energie zu haben

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.5 Verminderter Appetit oder übermäßiges Bedürfnis zu essen

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.6 Schlechte Meinung von sich selbst; Gefühl, ein Versager zu sein oder die Familie enttäuscht zu haben

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.7 Schwierigkeiten, sich auf etwas zu konzentrieren, z.B. beim Zeitunglesen oder Fernsehen

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.8 Waren Ihre Bewegungen oder Ihre Sprache so verlangsamt, dass es auch anderen auffallen würde? Oder waren Sie im Gegenteil „zappelig“ oder ruhelos und hatten dadurch einen stärkeren Bewegungsdrang als sonst?

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

4.9 Gedanken, dass Sie lieber tot wären oder sich Leid zufügen möchten?

Überhaupt nicht; An einzelnen Tagen; An mehr als der Hälfte der Tage; Beinahe jeden Tag

5. Persönliche Fragen

5.1 Ihr Geschlecht

- Weiblich
- Männlich
- Anderes

5.2 Ihr Geburtsjahr (z.B. 1991)

1. Information on the study “Survey of ethical attitudes and changing health practices during the COVID-19 pandemic.”

Dear Patients,

In this unprecedeted time of the COVID-19 pandemic, we are interested in understanding how experiences of health and health care are changing. In order to better understand you as a patient, and thus better serve you in the future, we want to find out if and how you have been impacted by the pandemic.

Please do not limit your answers to if you have been affected by the COVID-19 virus specifically, but include any other changes as a result of maintaining your health, such as changes in doctor visits or self-care.

Please answer spontaneously, without much thought. You may type answers in the blank spaces provided. There are no right or wrong answers.

Thank you very much for your cooperation!

1.1 Please check yes if you would like to participate in the survey as part of our study.

- Yes, I would like to participate in the study.
- (If no, please close this window)

2. Survey on attitudes and health behaviors in the COVID-19 pandemic

2.1 My health has been affected by the COVID-19 pandemic:

- Very much Very little

2.2 In what way?

2.3 Please check all answers that apply:

- I have received medical confirmation of a novel coronavirus infection (for example, via a positive test result)
- I have been tested for the novel coronavirus infection, but it was negative
- I suspect that I have had COVID-19 in the past month(s) because I have had associated symptoms (such as loss of smell, loss of taste, dry cough, fever, fatigue)
- I have not had any symptoms of COVID-19 in the past three months

2.4 ONLY if you have had symptoms of COVID-19 disease: Have you seen a doctor?

- Yes
- No

2.5 Have you had to quarantine recently?

- Yes
- No

2.6 If yes, how did this affect you?

2.7 During the COVID-19 pandemic, did you experience any health conditions (unrelated to coronavirus) for which you would normally see a doctor?

- Yes

- No

2.8 If yes: which ones?

2.9 If you had any health complaints, did you go to the doctor as usual?

- Yes
- No

2.10 If yes, did you have any concerns about going to the doctor during the COVID-19 pandemic?

2.11 If yes, what were they?

2.12 Compared to before the COVID-19 pandemic, has your health care

- improved
- stayed the same
- worsened

2.13 Was your health care affected by the COVID 19 pandemic, for instance because a doctor's office was closed, appointments were postponed, or for other reasons?

- Yes
- No

2.14 If yes, how was your health care affected?:

2.15 Before the pandemic, did you engage in any self-care measures to maintain your health, such as using health apps, participating in online support groups, or exercising, meditating, or other activities to relax?

- Yes
- No

2.16 If yes, which ones?

2.17 During/since the pandemic, did you engage in any new or additional activities to improve your health?

- Yes
- No

2.18 If yes, which ones?

OR

If no, why?

2.19 Do you inform yourself more about your health since the pandemic?

- Yes
- No

2.20 If yes, why?

2.21 During the COVID-19 pandemic, what was/is the most challenging thing for you in terms of your health?

2.22 What would have made it easier for you to take care of yourself health-wise during this time?

2.23 At the beginning of the pandemic, several changes were made in healthcare delivery to respond to the new needs created by the COVID-19 outbreak. Many doctor visits were postponed, office hours were changed, scheduled surgeries were postponed to a later date, etc. Do you feel that you have been affected?

- Yes
- No

2.24 If yes, how:

2.25 Would you describe these changes in health care as (Check all that apply):

- Necessary
- Not necessary
- Fair
- Unfair
- Other
- I can't say

2.26 Did you experience people helping others in relation to their health during the pandemic? Can you give an example?

2.27 Do you have any fears with regard to your future health care?

- Yes
- No

2.28 If yes, what are they?

OR If no, why?

3. Survey on mental health complaints: During the last 2 weeks, how often did you feel affected by the following complaints?

3.1 Nervousness, anxiety or tension

Not at all; On single days; On more than half of the days; Almost every day

3.2 Not being able to stop or control worrying

Not at all; On single days; On more than half of the days; Almost every day

3.3 Excessive worry about various matters

Not at all; On single days; On more than half of the days; Almost every day

3.4 Difficulty relaxing

Not at all; On single days; On more than half of the days; Almost every day

3.5 Restlessness, making it difficult to sit still

Not at all; On individual days; On more than half of the days; Almost every day

3.6 Quick temper or irritability

Not at all; On some days; On more than half of the days; Almost every day

3.7 Feeling anxious, as if something bad is going to happen
Not at all; On some days; On more than half of the days; Almost every day

4. During the last 2 weeks, how often did you feel affected by the following complaints?

4.1 Little interest or pleasure in activities
Not at all; On single days; On more than half of the days; Almost every day

4.2 Dejection, melancholy or hopelessness
Not at all; On individual days; On more than half of the days; Almost every day

4.3 Difficulty falling asleep or staying asleep, or increased sleep
Not at all; On single days; On more than half of the days; Almost every day

4.4 Fatigue or feeling of having no energy
Not at all; On single days; On more than half of the days; Almost every day

4.5 Decreased appetite or excessive need to eat
Not at all; On individual days; On more than half of the days; Almost every day

4.6 Poor self opinion; feeling like a failure or having let family down
Not at all; On single days; On more than half of the days; Almost every day

4.7 Difficulty concentrating on something, such as reading the newspaper or watching television
Not at all; On single days; On more than half of the days; Almost every day

4.8 Were your movements or speech slowed down in a way that others would notice? Or, on the contrary, were you “fidgety” or restless and thus had a stronger urge to move than usual?
Not at all; On single days; On more than half the days; Almost every day.

4.9 Thoughts that you would rather be dead or want to cause yourself suffering?
Not at all; On single days; On more than half of the days; Almost every day

5. Personal questions

5.1 Your gender
- Female
- Male
- Other

5.2 Your year of birth (e.g. 1991)

Appendix 3. Summary of qualitative data, with examples, by question

2.2 Meine Gesundheit wurde von der COVID-19-Pandemie beeinflusst. In welche weise?		
Category	Code	Example Quote
Due to COVID	Symptoms of COVID	<i>Hab eine zeitlang nichts geschmeckt und hatte die selben Symptome wie bei einem Schnupfen. (Nebenbei: Mein Vater konnte sich gratis testen lassen und es zeigte sich er hat eine große Menge Antikörper. Bei mir weis Ichs net.)</i>
	Self or relative tested positive	<i>Frau positiv getestet (wir hatten beide die selben Symptome) mein Test war lt. Ärzten daher nicht mehr notwendig (ein Test reicht)</i>
Due to change in care	Appointments Cancelled	<i>Bevorstehende Operation verschoben</i>
	Hard to get necessary supplies	<i>Ich habe Diabetes und mein verbrauchsmaterial war nicht lieferbar</i>
	Personal concern about going to doctor	<i>Man überlegt zweimal, ob man wirklich zum Arzt muss und wartet länger, damit die Symptome wieder verschwinden.</i>
Changes in health due to increased anxiety, fear, stress	Depression	<i>Man wird ständig mit Infos über die Krankheit belagert. Das drückt das allgemeine Wohlbefinden und Gemüt und macht eine gewisse betrübliche Stimmung.</i>
	Concern that one might have COVID	<i>Bei leidlichem Schnupfen, erster Gedanke: Covid-19</i>
	Isolation	<i>Sorge, Angst, Isolation</i>
	Worsening of life circumstances	<i>Umgang mit Erkältungskrankheiten (eigene und fremde) wurde stark Sensibilisiert. Erhöhtes Stresslevel im direkten Umgang mit Menschen. Außerdem, bin zur Zeit arbeitslos und es ist für mich noch schwieriger eine Stelle zu finden, da praktisch überall während der Arbeit stundenlang die Maske tragen muss. Meine Psyche leidet darunter. Ich become Angst und manchmal Panik, da ich mir jetzt Sorgen mache über meine Gesundheit und Berufsleben.</i>
	Stress	<i>Psychische Belastung am Arbeitsplatz durch die Ungewissheit, die im Umgang mit COVID 19 herrscht.</i>
Changes to work/home routines	Home office	<i>Etwas weniger Bewegung durch Homeoffice</i>
	More work	<i>große Veränderungen am Arbeitsplatz, umständlicher Arbeitsablauf</i>
	Less work	<i>Arbeit stark verdünnt</i>
	Homeschooling/childcare	<i>Extrem Stress durch Homeschooling.</i>
Changes to free time activities with a connection to health	Specific activities not possible	<i>Die Teilnahme an der Gymnastik im Sportverein war nicht möglich. Ich war vorher einmal wöchentlich in der Gymnastik um meinen Rücken zu stärken. Ich hatte vor Jahren einen Bandscheibenvorfall.</i>
	Loss of social contact in relation to activities	<i>Durch das viele alleine daheim sein war die psychische Verfassung etwas betroffen und keine Sportkurse, konnte mich schwer alleine aufraffen etwas zu machen und viel sitzen (Gewichtszunahme)</i>
	Physical problems in relation to change in activities	<i>Ich habe Knie und Rückenprobleme. Ich konnte weder ins Schwimmbad noch ins Fitness Center. Die Bewegung hat mir immer geholfen.</i>

	Time for activities changed	<i>Ich hatte mehr Zeit für täglichen Sport und gesündere Ernährung, die ich auf der Arbeit nicht habe. Ich bin täglich zwischen 25-50 km gewandert.</i>
Changes in relation to COVID guidelines	Difficulty with specific precautions	<i>Probleme mit der Maskenpflicht (nach kurzer Zeit total durchgeschwitzt, das tragen empfinde ich als äusserst unangenehm)</i>
	Changes due to increased precautions	<i>Tragen von Masken und bewusstes Hände waschen</i>
Changes in health	Weight gain	<i>Gewichtszunahme</i>
	Sleep changes	<i>Schlafstörungen</i>
	Less physical activity	<i>Weniger Bewegung weil ich nicht mehr so oft aus der Wohnung gegangen bin</i>
	New patterns of food/drink consumption	<i>erhöhter Alkoholkonsum, erhöhter Zigarettenkonsum; mehr Bewegung/Sport an der frischen Luft + bewusste und gesunde Ernährung (selbst gekocht, viel Bio); Streit in der Partnerschaft; neuartige Schmerzen (Rücken-, Nacken-, Kiefer-, Kopf-)</i>
	Mental health changes	<i>Eher die geistige Gesundheit, da so gut wie kein Sozialleben mehr möglich war.</i>
	Improvements	<i>Eigentlich eher positiv, da weniger Ansteckungen von üblichen Krankheiten wie grippale Infekte, etc.</i>
Not affected/no changes	Healthy	<i>Bin gesund</i>
	No risks/low risk	<i>Bin kein Risikopatient</i>
	Carefully following preventative measures	<i>Ich habe mich an die Maßnahmen, die das Bundesministerium an die Medien gegeben hat, gehalten, s2odas ich nicht in irgendeiner Art und Weise mit dem Virus in Kontakt komme</i>

2.2 Mussten Sie sich in der letzten Zeit in Quarantäne begeben? Wenn ja, wie erging es Ihnen damit?

Category	Code	Example Quote
No problems	Easy or necessary	<i>Kein Problem, ich konnte mich zuhause sehr gut beschäftigen.</i>
	Made one appreciate non-quarantine time more	<i>Soweit war es kein Problem. Anfangs ungewohnt aber man erkennt dann die Welt von einer anderen Seite und weiß die Freiheit mehr zu schätzen.</i>
	Enjoyable	<i>Ich habe die Zeit mit meinem Partner sehr genossen! Wir hatten endlich mal richtig Zeit für uns und man war viel entspannter als in einer normalen Arbeitswoche!</i>
Mental health problems	Isolation	<i>Ich kam mir wie eine Aussätzige vor, fühlte mich auch so behandelt von meiner Ärztin</i>
	Depression	<i>Ich finde es nicht menschlich, man bekommt Depressionen</i>
	Stress	<i>Stress durch Ungewissheit</i>

2.8 Haben Sie während der COVID-19-Pandemie gesundheitliche Beschwerden gehabt (unabhängig vom Coronavirus), bei denen Sie normalerweise zum Arzt gehen würden? Wenn ja: welche?

Category	Code	Example Quote
Physical health problems	Allergy	<i>Allergische Erkrankungen</i>
	Infection	<i>Blasenentzündung</i>
	Orthopedic	<i>Künstliches Knie</i>
	Dental	<i>Zahnarzt und HNO</i>
	Back pain	<i>Rückenprobleme - LWS und HWS</i>
	Generalized	<i>Schwindel, Übelkeit</i>
	Spinal	<i>Bandscheibenvorfall</i>
	Cardiac	<i>Angina pectoris</i>
Mental or socio-emotional health	Preventative	<i>Impfungen, Vorsorge Frauenarzt</i>
	Sleep problems	<i>Schlafstörungen</i>
Treatment forgone	Depression	<i>Panikattacken, Depression</i>
	Suspended or cancelled by praxis	<i>Hatte einen Termin beim Orthopäden bzgl eines Bänderrisses. Dieser wurde verlegt</i>
	Suspended or cancelled by patient	<i>Die hautärztliche Behandlung habe ich ausgesetzt.</i>
	Self-treatment	<i>selbst versorgt und nicht gleich zum Arzt gegangen</i>
None	None	<i>Keine</i>

2.11 Wenn ja, hatten Sie Bedenken, während der COVID-19-Pandemie zum Arzt zu gehen? Wenn ja, welche?

Category	Code	Example Quote
Contagion concerns	Catching COVID-19	<i>Ansteckung von Personen die infiziert sind jedoch keine typischen Anzeichen haben und daher covid 19 nicht erkannt wurde</i>
	Getting others sick with COVID-19	<i>Auf rücksichtslose und unvorsichtige andere Patienten zu treffen. Oder selbst unbewusst Überträger des Virus zu sein.</i>
	Quarantine	<i>Ansteckung, Quarantäne</i>
Additional hassle during pandemic	Wait times	<i>ürvolle Wartezimmer und lange Wartezeiten, sowie unzureichender Schutz vor Ansteckung</i>
	Uncertainty	<i>Ob überhaupt Termine frei sind. Wie ich mich verhalten muss. Ob ich überhaupt hin sollte, da andere es bestimmt eher nötig hätten.</i>
	New COVID-19 rules	<i>Kein einheitliches Hygienekonzept.</i>
	Burden for Doctors	<i>Die Ärzte haben ja derzeit genug zu tun (während der ersten Welle)</i>
None	No concerns	<i>Hatte keine Bedenken, ganz im Gegenteil, Situation beim Hausarzt war entspannter als sonst, da man einen festen Termin hatte und nicht</i>

2.14 War Ihre Gesundheitsversorgung von der COVID 19-Pandemie beeinträchtigt, etwa weil eine Arztpraxis geschlossen war, Termine verschoben wurden, oder aus anderen Gründen? Wenn ja, wie wurde die Gesundheitsversorgung beeinträchtigt?

Category	Code	Example Quote
Difficulty getting care	Closed medical offices	<i>Zahnarzt hatte zu, musste bei Notfall anderen aufsuchen</i>
	Scheduling difficulties	<i>Arztpraxen hatten auch nur noch Vormittags geöffnet. Das erschwert einen regelmäßigen Arztbesuch sehr, da man als berufstätige Person immer freinehmen muss.</i>
	Appointments moved/ cancelled	<i>Operation wurde verschoben</i>
	Only virtual or phone care	<i>Kein persönlicher Kontakt zum Hausarzt. Abfertigung vor der Praxistür. Nur telefonische Betreuung.</i>
Materials availability issues	Medication not available	<i>die Abgabemengen meiner Medikamente wurde gekürzt</i>
Medical office concerns	Turned away due to COVID-19 concerns	<i>Selbst mit harmlosen erkältungssymptomen wurde man lieber abgewiesen aufgrund der Angst wegen covid</i>

2.16 Vor der Pandemie, haben Sie Maßnahmen der medizinischen Selbstversorgung ergriffen, um ihre Gesundheit aufrechtzuerhalten, wie etwa Benutzung von Gesundheits-Apps, Teilnahme an Online-Selbsthilfegruppen oder sportliche Übungen, Meditation oder andere Aktivitäten zur Entspannung? Wenn ja, welche?

Category	Code	Example Quote
Sport	Fitness studio courses	<i>regelmäßiger Sport in einem Fitnessstudio: NordicWalking; Rückentraining; Spinning; Gruppenradfahren; Kraft- und Ausdauertraining; Salzgrotte; Sauna.</i>
	Group sports	<i>Fußball, Tanzen</i>
	Walking/Jogging	<i>Laufen mit einer Laufgruppe, Fitnesstraining</i>
	Biking	<i>Radfahren</i>
Relaxation	Meditation	<i>Spazieren, Meditation</i>
	Yoga	<i>Ab und zu Yoga</i>
Nutrition	Eating well	<i>Gesündere Ernährung</i>
	Supplements	<i>Nahrungsergänzungsmittel genommen schon seit 8 Jahren</i>
Getting outside	Garden work	<i>Gartenarbeit zum Ausgleich der Bürotätigkeit</i>
	Fresh air	<i>wöchentlicher Sport, halbwegs gesunde Ernährung, frische Luft</i>
Treatment with professionals	Alternative treatments	<i>Osteopathie</i>
	Standard treatments	<i>Physiotherapie</i>

2.18 Während/seit der Pandemie ergreifen Sie neue oder zusätzliche Maßnahmen, um ihre Gesundheit zu verbessern? Wenn ja, welche? ODER Wenn nein, warum?

Category	Code	Example Quote
Behavior/ Activity changes	Quitting smoking	<i>Veränderung vom Gelegenheitsraucher zum absoluten Nichtraucher.</i>
	Jogging/ walking	<i>Aufgrund des ausgefallenen Trainings im Verein bin ich öfter joggen gewesen als gewöhnlich</i>
	Fitness studio activities	<i>Fitnessstudio</i>
	Biking	<i>Ernährungsumstellung und Sport ein bis zweimal die Woche Fahrrad fahren</i>
	Online digital options	<i>Sportvideos auf YouTube, da ich endlich die zeit dazu hatte</i>
Nutrition	Eating well	<i>Achte mehr auf gesunde Ernährung und körperliche Fitness, damit ich Falle einer Erkrankung nicht so schlimm erkranke.</i>
	Supplements	<i>Allgemeine Einnahme von Vitaminen etc</i>
Relaxation	Meditation	<i>Meditation wegen zu vielen Gedanken</i>
	Massage	<i>Selbstmassage der Kiefermuskulatur (online Videos dazu angesehen), Freund massiert mir jetzt öfter den Nacken und Rücken, Yogaübungen, Übungen zur Kräftigung der Arm-, Rücken- und Bauchmuskulatur, habe wieder mit dem Joggen angefangen, gesündere Ernährung, längeres Duschen zur Entspannung</i>
	Yoga	<i>Yoga, um mentale und physische Gesundheit zu fördern</i>
Treatment with professionals	Standard treatments	<i>Physiobehandlung</i>
Outside	Fresh air	<i>Regelmäßige Spaziergänge / Sporttreiben an frischer Luft</i>
Changes in relation to COVID-19 guidelines	Social distancing	<i>Abstand halten</i>
	Hygiene	<i>Abstand halten, Hände regelmäßig waschen bzw. Desinfizieren</i>
	Staying home	<i>Ich halte mich strikt an die Abstandsregelung und fahre nicht in den Urlaub.</i>
	Mask use	<i>Maske tragen, Menschenaufläufe meiden</i>
	COVID-Warn App	<i>Ich habe nur die Corona-Warn-App installiert. Ich versuche generell schon mein Immunsystem zu stärken. Deshalb habe ich keine zusätzlichen Maßnahmen ergreifen.</i>
None	Not necessary	<i>Es geht mir gut und ich bin gesund. Gibt nichts was ich verbessern müsste außer meiner Psyche</i>
	No risk	<i>Bin kein risikopatient</i>
	Same as before	<i>Ich mache alles wie davor, es würde ja eh nichts helfen, wenn ich Covid19 bekommen sollte.</i>
	No interest	<i>Keine Lust</i>

2.20 Informieren Sie sich seit der Pandemie mehr über Ihre Gesundheit? Wenn ja, warum?

Category	Code	Example Quote
Increased concern	Fear	<i>Angst vor der Pandemie bzw vor einer Erkrankung</i>
Prevention	Personal precaution	<i>Weil ich eine Vorerkrankungen habe und somit zur Risikogruppe gehöre.</i>
	Occupational precaution	<i>Berufsbedingte Vorsichtsmassnahme</i>
	Precaution for others	<i>Zur Sicherheit und zum Schutz anderer</i>
To be better informed	In relation to COVID-19 risk	<i>um über die aktuelle Pandemiesituation informiert zu bleiben</i>
	In relation to personal health knowledge	<i>um Schmerzen selbst lindern zu können, um meinen Körper fitter machen zu können (Immunsystem) --> das fängt ja mit dem Wissen</i>

2.21 Was war/ist während der COVID-19-Pandemie für Sie die größte Herausforderung im Hinblick auf Ihre Gesundheit?

Category	Code	Example Quote
Healthcare concerns	Knowing when to get tested/care	<i>Nicht wegen jedem kleinen Husten oder Niesen zum Test zu laufen.</i>
	In relation to care for children	<i>Bei den Kindern zu erkennen, wann es nötig ist einen Test zu machen</i>
	In relation to care for self	<i>Verfügbarkeit von Arztterminen</i>
	Getting medications or healthcare supplies	<i>Ausreichend versorgt zu sein mit Insulin, das ist leider sehr wichtig für mich</i>
Concern related to COVID-19 virus	Personal risk	<i>Da ich in der 35. Woche schwanger bin, war die Auswirkung auf die Schwangerschaft, das Kind, die Geburt eine Sache mit der man sich natürlich intensiver beschäftigt hat.</i>
	Fear of contagion	<i>Ständige Angst vor einer Infektion und die Gefahr das Virus in den eigenen Haushalt zu schleppen</i>
	Anxiety	<i>Es ist für mich eher ein psychische Problem, ständig mit Angst umgehen zu müssen, da man nicht weiß, sie stark einen der Virus trifft.</i>
	Remaining healthy	<i>Fit zu bleiben, obwohl Fitnessstudios geschlossen waren</i>
COVID-19 guidelines	Keeping distance	<i>Abstand zu halten zu Familie, Freunden, Kollegen.</i>
	Mask wearing	<i>Das Tragen der Maske auf der Arbeit (meist bis zu 12 Stunden)</i>
	Information	<i>Man wusste nicht was man überhaupt den Medien über das Virus glauben kann. Somit wusste man auch nicht welche Maßnahmen wirklich helfen.</i>
	Quarantine	<i>6 Wochen Quarantäne waren für uns beide eine Herausforderung, ohne hilfsbereite Nachbarn und Freunde wäre es äußerst schwierig geworden.</i>
None	None	<i>Es gibt keine Herausforderungen deren ich mich stellen müsste</i>

2.22 Was hätte es Ihnen erleichtert, in dieser Zeit gesundheitlich für sich selbst zu sorgen?

Category	Code	Example Quote
Nothing	None	<i>Nichts. Ich bin gesund und brauche keine Hilfe.</i>
Changes in relation to home life	Rural/Urban	<i>Das Leben auf dem Land.</i>
	Services	<i>Besseres Internet (auf dem Dorf), da auch Kurse über das Internet nur eingeschränkt genutzt werden konnten</i>
	Personal relationships	<i>Mit meiner Familie zusammen zu sein</i>
	Habits	<i>Mental, weniger Nachrichten schauen, denn das belastet einen ja viel mehr.</i>
Medical system changes	COVID-19 Testing	<i>Wenn Selbsttests möglich gewesen wären</i>
	Remote care	<i>Online Sprechstunden - ggf. auch außerhalb der üblichen Öffnungszeiten von Praxen</i>
	Scheduling	<i>Normale Öffnungszeiten der Arztpraxis</i>
	Information	<i>Einheitliche Informationspolitik der öffentlichen Stellen</i>
Occupational changes	In relation to employer	<i>Mehr Rücksicht des Arbeitgebers</i>
	Work load	<i>weniger Stress im Beruf und im Homeoffice.</i>
Public life	Delivery services	<i>Lieferdienst für Medikamente und Lebensmittel</i>
	Material needs	<i>Verfügbares Material (Nasen-Mund-Schutz, Fieberthermometer, Hygieneartikel)</i>
	Changes in restrictions in relation to COVID-19	<i>Bestimmte Uhrzeiten zu denen ausschließlich ältere Personen einkaufen gehen können</i>
	Compliance with COVID-19 restrictions by others	<i>Wenn alle Bürger sich anständig an regeln halten</i>

2.24 Zu Beginn der Pandemie wurden verschiedene Veränderungen in der Gesundheitsversorgung vorgenommen, um auf die neuen Bedürfnisse zu reagieren, die durch den Ausbruch von COVID-19 entstanden sind. Viele Arztbesuche wurden verschoben, der Praxisbetrieb wurde eingeschränkt, geplante Operationen wurden auf einen späteren Zeitpunkt verschoben usw. Haben Sie das Gefühl, dass Sie davon betroffen waren? Wenn ja, wie?

Category	Code	Example Quote
Medical system changes	Appointments cancelled	<i>OP abgesagt</i>
	Waiting time	<i>Sehr lange Wartezeiten. Überforderte Praxen</i>
	Medical services redirected for COVID-19 care	<i>Nach einer OP war ich in stationärer Rehabilitation. Diese war für 3 Wochen geplant. Nach zwei Wochen wurde aber die [Name]-Klinik geschlossen, um für Corona-Patienten zur Verfügung zu stehen.</i>
	Difficulty getting care	<i>eingeschränkter Praxisbetrieb</i>

2.26 Haben Sie erlebt, dass Menschen während der Zeit der Pandemie anderen bei der Gesundheitsversorgung geholfen haben? Können Sie ein Beispiel nennen?

Category	Code	Example Quote
Providing services for neighbors or family	Errands	Alltagsgeschäfte, wie z.B. Einkäufe für weniger mobile und ältere Menschen.
	Transportation	Eine Bekannte hat eine Frau zur Untersuchung gebracht
	Social support	Zuspruch, vermehrte Telefongespräche
	Supplies	Ja, nähen von Masken.
	New networks	Im Dorf wurde eine Gruppe gegründet, um Hilfsbedürftige zu versorgen.
Taking additional precautions	COVID-19 regulations	Aufmerksam gemacht zwecks Mund-Nasen Schutz und Hygiene
	Institutional precautions	Arztpraxen haben wichtige Maßnahmen eingehalten um andere Menschen zu schützen.
None	None	Nein da es in unserem Ort keine Fälle gab.

2.28 Haben Sie Ängste mit Blick auf Ihre zukünftige Gesundheitsversorgung? Wenn ja, welche? ODER Wenn nein, warum?

Category	Code	Example Quote
Health – concerns	Mental health	<i>Sozialleben leidet, das heißt - Psyche von vielen Menschen fällt immer weiter in tiefen Loch!!!</i>
	Physical health	<i>Falls ich mich nicht selbst versorgen kann helfen mir meine Kinder</i>
	Personal Risk	<i>Ich habe nicht Angst um mich, sondern um Familienmitglieder, die zur Risikogruppe gehören</i>
Health – no concerns	Mental health	<i>Weil ich keine Angst habe</i>
	Physical health	<i>Ich bin jung und fit und habe deshalb keine Angst.</i>
	Personal Risk	<i>Kein risikopatient bin und die maßnahmen gut dagegen sind</i>
	Personal contacts with care providers	<i>Weil ich von meinem Hausarzt gut versorgt bin</i>
Institutional	German healthcare-specific response	<i>Das deutsche Gesundheitssystem ist glaube ich stark genug und gut durchplant bzw. organisiert.</i>
	Local healthcare-specific response	<i>Gute Gesundheitsversorgung in Bayern</i>
	Political institutions	<i>Vertrauen auf Regierung</i>
	Economic concerns	<i>Ich vermute, dass die Gesundheitsversorgung schon allein aus finanzieller Sicht zukünftig schwieriger werden wird</i>
COVID-19 specific concerns	Restrictions	<i>Man setzt alles um, was während der Pandemie gelernt wurde, nur manche Menschen verschlimmern dies durch nichtbeachtung der Regeln</i>
	Vaccination	<i>Das kann corona nicht komplett heilen/impfen kann</i>
	Long-haul COVID-19	<i>Langzeitschäden nach Infizierung mit covid 19</i>
	Tunnel vision	<i>Nur Covid -19 ist derzeit anscheinend wichtig.</i>
	Healthcare System concerns	<i>Extrem steigende Infektionszahlen und nicht genügend Kapazitäten in den Kliniken</i>