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Recovery, Restoration and Risk: A Cross Sectional Survey of the Impact of COVID-19 on General Practitioners in the First UK City to Lockdown

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Abstract

Background

The COVID-19 pandemic has impacted General Practitioners (GPs) immensely. Work patterns have changed, risk stratification has been proposed and clinicians' mental health have been adversely affected. The COVID-19 prevalence amongst GPs is unknown. This study focuses on assessing the impact of COVID-19 on GPs in Leicestershire, the first UK city to lockdown locally.

Aim

This survey assessed the prevalence of COVID-19 in GPs and explored GP work patterns in comparison to national guidance. It evaluated the impact of COVID-19 on GP stress perception, using a validated perceived stress tool.

Design and Setting

The cross-sectional retrospective survey was sent to all the GPs in Leicestershire.

Methodology

111 GPs in Leicestershire took part voluntarily in an anonymised questionnaire-based study. A 29-item survey using SMARTsurvey software was designed with multiple choice and Linkert response scale questions. Ethical approval was not applicable.

Results

The COVID-19 prevalence in GPs was 8.1%. 70.3% of GPs were of Black, Asian and Minority Ethnic (BAME) origin. 91.9% of GPs had undergone risk stratification. 79.3% of GPs felt supported by their practice but only 59.5% felt supported with mental health. GPs described feeling more stressed during the COVID-19 pandemic than they had been previously.

Conclusion

This is the first study evaluating COVID-19 prevalence amongst GPs in Leicestershire. Despite government interventions, GPs felt less supported with their mental health. Thus, the National Health Service England should focus on GP stress and wellbeing as they work towards the restoration and recovery of primary care and prepare for a second peak.

Key Words

COVID-19, Mental Health, Personal Protective Equipment, General Practice

How This Fits In

The prevalence of COVID-19 among UK General Practitioners (GP) is unknown and we attempted to assess the prevalence in Leicestershire in this study. This study highlighted a change in GP work patterns and implementation of risk stratification. GPs already on the threshold of burnout are at greater risk. The worsening mental wellbeing in our GP cohort during COVID-19 suggests need for further support to face a potential second wave of the pandemic.

Introduction

COVID-19 has been classified as an international pandemic (1) causing significant morbidity, mortality and huge financial burden on society (2). The United Kingdom (UK) has passed its peak infection rate (3) and commenced a recovery and restoration phase. General Practitioners (GPs) have radically changed their work patterns during this period (4).

On 19th March 2020, a letter from National Health Service England (NHSE) asked all GP practices to adopt a full triage model supporting remote patient management (5). Additionally, NHSE asked GP practices to manage home visits in designated premises and set up video consultations (5).

Concurrently, as the COVID-19 death toll climbed, some hospitals reported 44% of their staff testing positive for COVID-19 (6). The prevalence of COVID-19 amongst GPs was not well documented. Characteristics of high-risk patients were identified (7) showing a disproportionate death rate amongst **Black**, Asian, Minority Ethnic (BAME) patients (8). **Importantly, the Office for National Statistics reported that the BAME population is up to four times more likely to die from COVID-19** (9). Consequently, Public Health England (PHE) issued guidance on risk assessing healthcare professionals (HCP) but alarmingly did not include recommendations to mitigate risks for the high-risk BAME NHS workers (10). Nevertheless, **local** workplaces adopted pragmatic modifications to work patterns (11).

Additionally, this pandemic and the added isolation of a national lockdown has caused undue mental stress (12) with increased suicide rates **in the general population** (13). Perceived stress is the culmination of individual feelings or thoughts about how much

stress one is **under** at a given point or time period (14). Thus, GPs who **are already known to** have a stressful vocation (15) may be prone to worsening mental health issues **as a result of** this pandemic.

The aim of this cross-sectional survey was to assess the prevalence of COVID-19 amongst GPs in Leicestershire, the first area of local lockdown, and evaluate its impact on their working patterns and stress levels, not previously investigated at the time of writing. GP mental wellbeing was explored using the Perceived Stress Scale (16), a validated psychological tool commonly used to measure stress.

Methodology

This was a **cross-sectional, retrospective questionnaire-based study**. GPs across Leicestershire were invited to take part voluntarily. Ethical approval was not obtained due to the study design.

A 29-item survey using SMARTsurvey software was designed with multiple choice and Linkert response scale questions. The validated Perceived Stress Scale (16) was used to evaluate stress prior to COVID-19 (March 2020) and currently at the time of survey circulation (July-August 2020). **Responses regarding stress levels prior to COVID-19 and during the COVID-19 pandemic were completed during the time of the study period.**

The survey was distributed through the local GP global email to eliminate selection bias and responses were anonymous. The study period was from 24th July 2020 to 7th August 2020. The completed responses were then analyzed using the online SMART survey software and Microsoft Excel.

Results

185 participants accessed the survey. 71 incomplete responses and 3 responses from non-GPs were excluded. Responses from 111 GPs (N=111) were subsequently included for analysis (see Appendix 1 and 2). 27 respondents added comments (see Appendix 2).

Sociodemographic characteristics of the participants (Table 1) revealed 51.4% of respondents were male and 96.4% were under the age of 65 years old. 23.4%, 70.3% and 5.41% of GPs were British, BAME and "Other", respectively, with 0.9% not disclosing ethnicity. 56.8%, 15.3 %, 20.7% and 5.41% were GP partners, locums, salaried GPs and GP trainees respectively. 65.8% of GPs had more than 10 years of experience and 73.0% of practices were teaching practices.

Prevalence of COVID-19 in Leicestershire GPs

8.10% (n=9) of respondents self-reported that they had contracted COVID-19 compared to 91.9% who did not (see Figure 1).

Changes in Work Pattern

86.5% of respondents stated that home visits had decreased, and 98.2% reported a reduction in face-to-face consultations. 91.0% and 97.3% responded that video and telephone consultations respectively had increased with a 48.6% reported increase in email consultations (see Table 2).

Personal Protective Equipment

16.2% (n=18) of GPs stated 'poor' availability and accessibility to PPE, with 40.5% (n=45) reporting this to be 'average' or 'neutral'. 43.3% (n=48) rated this as 'good' or 'excellent'.

Risk Stratification

91.9% (n=102) of participants had undergone risk stratification, with 71.2% (n=79) of these suggesting the implementation of this risk stratification was 'good' or 'excellent'.

Perceived Stress Scale

Participants reported an increased frequency of perceived stress across all 10 domains of the Perceived Stress Scale during the COVID-19 pandemic ('Currently'), compared to pre-COVID-19 times (see Table 3).

20.7% (n=23) more GPs reported they more often felt "upset with something that happened unexpectedly" during the COVID-19 pandemic compared to pre-COVID-19 times. Similarly, 24.3% (n=27) and 27.9% (n=31) more respondents stated they more often felt they were "unable to control the important things in life" and felt "nervous and stressed" respectively, currently compared to pre-COVID-19.

21.6% (n=24) fewer GPs felt "things were going their way" compared to pre-COVID-19 times, whilst 27.9% (n=31) more GPs reported they were more often "angered because of things outside of their control" during this pandemic compared to pre-COVID-19 times.

Support from the Workplace

Figure 2 shows that 79.3% (n=88) of GPs reported their overall support from their workplace was 'good' or 'excellent'. 6.3% (n=7) of GPs stated it was 'poor', whereas 14.4% (n=16) stated this was 'average' or 'neutral' during the COVID-19 pandemic.

14.4% (n=16) of participants stated support with mental wellbeing was 'poor', 26.1% (n=29) 'average' or 'neutral', and 59.5% (n=66) 'good' or 'excellent' during the COVID-19 pandemic.

In readiness for a second wave, 62.2% (n=69) of respondents stated 'good' or 'excellent' preparation.

Qualitative Comments

Respondents included the following remarks: "The CCG and clinical lead input and leadership has been non existent and a disgrace in Leicester", "General anxiety levels higher- mainly because of dealing with uncertainty/ worry at lack of back-up from secondary care, worry about coping over winter with inevitable increasing pressures", "considerable stress in these difficult times", "local lockdown had a bigger negative effect on my perception" and "the NHS should be ashamed of how they handled the situation".

Discussion

Summary

8.1% of the responding GPs had contracted COVID-19, with most respondents being BAME. GP work involved more technology-based consultations (Table 2) and 91.9% of all GPs had undergone risk stratification. Consequently, 71.1% of GPs rated implemented changes to reduce their risk as 'good' or 'excellent'. Importantly, 79.3% of GPs felt supported by their practice and 62.2% stated 'good' or 'excellent' preparation for the second wave. However, only 43.3% rated the access and availability to PPE as 'good' or 'excellent' suggesting room for improvement in providing this for an upcoming second peak. Strikingly, only 59.5% felt supported with mental health, with the validated stress tool indicating that GPs were stressed more often during the COVID-19 pandemic compared to the pre COVID-19 time. Several qualitative comments were included in the results. This indicates that further support is required for GPs for the next wave of the pandemic.

Strengths and Limitations

A major strength of this first cross-sectional survey involving a large proportion of BAME participants was that it assessed the prevalence of COVID-19 amongst GPs within the first local lockdown area. Importantly, this study assessed the mental wellbeing of GPs, who have already been described to be at risk of burnout (15). GPs are known to be poor responders to surveys (17), therefore this sample size may be reasonable. However, a future survey incorporating a larger radius would greatly strengthen the study. Limitations

include the qualitative nature of this survey. A high proportion of BAME GPs responded which may include bias in the results for mental wellbeing because of the current evidence on the adverse impact of COVID-19 on BAME doctors (8). Additionally, specific diagnostic criteria for COVID-19 were not included in the survey. Self-reporting may result in inaccurate prevalence estimations. Another limitation was that this study was conducted in a city that was in an extended lockdown, which although provides evidence for the impact of lockdown, may not be representative of the total GP population. Lastly, the design of this survey and potential ambiguity of some questions may have caused confusion in responses. This study will aid the development of better-designed surveys in the future.

Comparison with Existing Literature

The prevalence of COVID-19 amongst the GPs in this survey was higher than the national average (326,000 cases in 66.65 million which equates to 0.05% of the UK population) (18), (19). This increased prevalence is likely a result of GPs being on the frontline in primary care. This may also reflect the increased testing from the local Leicestershire lockdown. Other contributory factors may be the large BAME proportion of respondents in Leicestershire (20), as ethnicity has been linked to COVID-19 (8) and that 40.1% of the medical force in the NHS are BAME (21).

The results from this survey suggest that video and telephone consultations are the new way of working. The technology-based consultations have superseded the previous norm of face-to-face consultations and home visits (Table 2). These findings were in line with the NHSE guidance released in March 2020 (5). Since then, the BMA (22) and NHSE

(23) have produced clear guidance reiterating that remote consultations should be used when appropriate and home visits should be limited. Interestingly, the King's Fund had produced a model on using digital technology and video consultations in 2018 (24). **Ironically, GPs who were resistant to accept this at the time (25), have now embraced this technology as a result of this pandemic.**

Notably, 91.9% of the GPs in this survey had undergone risk stratification at their workplace, as mandated by NHSE (26) and 71.1% rated their subsequent workplace support as 'good' or 'excellent'. Some providers have produced risk assessment and guidance for high-risk patients such as BAME staff, pregnant women, and vulnerable staff (11).

Only 59.5% of the respondents felt supported by their workplace for their mental wellbeing whilst 14.4% respondents felt support was 'poor'. At baseline, 1 in 4 people suffer from mental health issues (27) and this is likely to increase as a result of COVID-19 (12). Despite the help from charities and the nationwide campaign with helplines to support patients and doctors alike (28), (29), mental health issues continue to be problematic.

In addition, GPs were found to have an increase in frequency of perceived stress due to COVID-19 across all parameters in question. These findings imply that GPs are more often exhibiting an external locus of control with the continually changing landscape of COVID-19. Evidence suggests this could lead to anger-eliciting situations and depression (30). Although there have been helplines for GPs to access, many will not. Previous studies have suggested GPs in particular are reluctant to seek help, particularly for psychological problems (31), (32). Thus, strategies are needed to challenge this culture of self-reliance amongst GPs.

Implications for research and/or Practice

This study provided an approximation the COVID-19 prevalence in GPs, particularly in an area of local lockdown. Prevalence will guide the services needed to support GPs in terms of risks, for example the degree of PPE needed and whether face-to-face consultations should be completely replaced by telemedicine.

Unfortunately, even though increased risks towards BAME individuals have been highlighted by PHE, and the British Medical Association (BMA) (33), no specific guidance has been given to BAME GPs (10). With these odds, should BAME GPs stop all face-to-face consultations? Without an objective risk stratification tool, consistent guidance would be difficult. The authors await national guidance on this issue, particularly for BAME GPs. Hopefully, the new UK-based study investigating COVID-19 risks for BAME healthcare staff will yield more definitive answers (34).

The COVID-19 pandemic forced a change **in working** that GPs previously resisted but then swiftly adopted, as evidenced by this study. Nevertheless, future studies on satisfaction and effectiveness of these novel ways of working will be **crucial** to assess the success and acceptability of these virtual consultations.

Importantly, the detrimental impact of COVID-19 on GPs, **who are** amidst the recruitment and retention crisis (35), implies that GPs would benefit from more support. Governmental helplines rely on GPs seeking help reactively. Despite this help, GPs still feel stressed. Given appraisal and revalidation **was** on hold, mentorship support **was** not easily

available. Thus, more structured proactive support should be considered for GP mental wellbeing in order to challenge this culture of self-reliance amongst GPs.

Comments regarding stress, online consultations, PPE and the extended lockdown could also be further explored.

Future studies should include a larger cohort of GPs, with numerical variables to allow for statistical analysis, including GPs in non-lockdown areas to increase the reliability of the data retrieved. A Chi-squared test comparing the variables in pre-COVID-19 times and during COVID-19 times could be performed to obtain more valid results.

Conclusion

This study showed a higher prevalence of COVID-19 in GPs compared to the national average. The results reaffirmed the change in work patterns, mandated by NHSE. With the continual evolution of the COVID-19 pandemic, digital consultations will likely continue. However, technology-based consultations should be evaluated for effectiveness and patient satisfaction. The threat of a second wave and another national lockdown looms ahead which would increase COVID-19 prevalence and magnify GP perceived stress. Thus, before the second wave or any further pandemics, it is essential to support GPs in a more proactive manner as they work towards the restoration and recovery of primary care and prepare for a second peak.

Declarations

Funding: None

Ethical Approval: Ethical approval was not obtained due to study design and methodology

Competing Interests: There are no competing interests

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Figures and Tables

Table 1: Sociodemographic Profile of General Practitioner Cohort

Characteristics	Number of Responses, n (%) (n=111)
Gender	
- Male	57 (51.3%)
- Female	52 (46.9%)
- Prefer not to say	2 (1.8%)
Age	
- 25-34 years	16 (14.4%)
- 35-54 years	66 (59.5%)
- 55-64 years	25 (22.5%)
- 65-74 years	3 (2.70%)
- 75+ years	1 (0.90%)
Mean age: 35-54 years	
Ethnicity	
- British	26 (23.4%)
- Black, Asian, Minority Ethnic	78 (70.3%)
- Other	6 (5.41%)
- Did not want to disclose	1 (0.90%)
Type of General Practitioner	
- General Practitioner Trainee	6 (5.40%)
- Salaried General Practitioner	23 (20.7%)
- Locum General Practitioner	17 (15.3%)
- Partner	63 (56.8%)
- Other	2 (1.8%)
Experience as General Practitioner (years)	
- Still in training	6 (5.40%)
- Less than 2 years	6 (5.40%)
- 2-5 years	15 (13.5%)
- 6-10 years	11 (9.90%)
- More than 10 years	73 (65.8%)
Mean years of experience: more than 10 years	
Registered Teaching Practice	
- Yes	81 (73.0%)
- No	28 (25.2%)
- I don't know	2 (1.80%)

Proportion of General Practitioners that contracted COVID-19

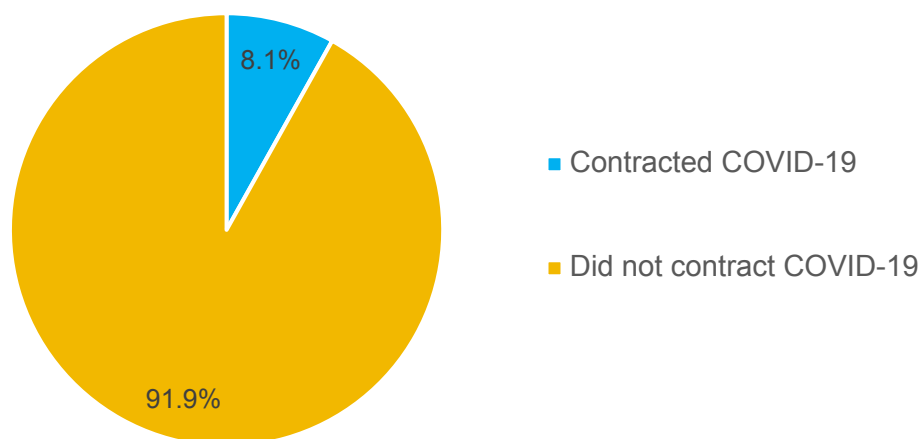


Figure 1: Pie chart showing the proportion of General Practitioners who contracted COVID-19 compared to those who did not (n=111).

Table 2: Changes in Work Pattern

Changes in Work Pattern	Increased, n (%)	Stayed the same, n (%)	Decreased, n (%)	Response Total, n (n=111)
Home visits	2 (1.80%)	13 (11.7%)	96 (86.5%)	111
Face-to-face consultations	0 (0.00%)	2 (1.80%)	109 (98.2%)	111
Video consultations	101 (91.0%)	10 (9.00%)	0 (0.00%)	111
Telephone consultations	108 (97.3%)	1 (0.90%)	2 (1.80%)	111
Email consultations	54 (48.6%)	56 (50.5%)	1 (0.90%)	111

Table 3: Responses to the Perceived Stress Scale Questions

Perceived Stress Scale Questions	Before COVID-19 and Currently	Responses, % (n)							Response Total (n=111)
		Never	Almost Never	Sometimes	Fairly Often	Very Often	Always	Don't Know	
Feeling upset because of something that happened unexpectedly	Pre-COVID-19	7.2% (8)	28.8% (32)	43.2% (48)	10.8% (12)	9.9% (11)	0.0% (0)	0.0% (0)	111
	Currently	9.0% (10)	13.5% (15)	36.0% (40)	19.8% (22)	17.1% (19)	4.5% (5)	0.0% (0)	111
Feeling confident about your ability to handle your personal problems	Pre-COVID-19	1.8% (2)	3.6% (4)	9.0% (10)	17.1% (19)	34.2% (38)	30.6% (34)	3.6% (4)	111
	Currently	2.7% (3)	3.6% (4)	16.2% (18)	24.3% (27)	24.3% (27)	27.0% (30)	1.8% (2)	111
Feeling unable to control the important things in life	Pre-COVID-19	14.4% (16)	25.2% (28)	36.9% (41)	13.5% (15)	9.0% (10)	0.0% (0)	0.9% (1)	111
	Currently	12.6% (14)	13.5% (15)	24.3% (27)	19.8% (22)	24.3% (27)	2.7% (3)	2.7% (3)	111
Finding that you cannot cope with all the things you had to do	Pre-COVID-19	18.0% (20)	28.8% (32)	27.9% (31)	10.8% (12)	10.8% (12)	3.6% (4)	0.0% (0)	111
	Currently	13.5% (15)	24.3% (27)	25.2% (28)	16.2% (18)	18.9% (21)	1.8% (2)	0.0% (0)	111
Feeling nervous and "stressed"	Pre-COVID-19	12.6% (14)	17.1% (19)	41.4% (46)	20.7% (23)	8.1% (9)	0.0% (0)	0.0% (0)	111
	Currently	9.0% (10)	9.0% (10)	24.3% (27)	27.0% (30)	21.6% (24)	8.1% (9)	0.9% (1)	111
Being able to control irritations in your life	Pre-COVID-19	1.8% (2)	5.4% (6)	10.8% (12)	25.2% (28)	29.7% (33)	25.2% (28)	1.8% (2)	111
	Currently	0.9% (1)	9.0% (10)	24.3% (27)	23.4% (26)	24.3% (27)	16.2% (18)	1.8% (2)	111
Feeling that things were going your way	Pre-COVID-19	1.8% (2)	6.3% (7)	10.8% (12)	33.3% (37)	33.3% (37)	12.6% (14)	1.8% (2)	111
	Currently	3.6% (4)	12.6% (14)	24.3% (27)	28.8% (32)	18.0% (20)	10.8% (12)	1.8% (2)	111
Feeling that you were on top of things	Pre-COVID-19	0.0% (0)	7.2% (8)	9.0% (10)	27.0% (30)	39.6% (44)	16.2% (18)	0.9% (1)	111
	Currently	0.0% (0)	11.7% (13)	18.0% (20)	23.4% (26)	34.2% (38)	11.7% (13)	0.9% (1)	111
Being angered because of things that were outside of your control	Pre-COVID-19	11.7% (13)	30.6% (34)	40.5% (45)	11.7% (13)	2.7% (3)	2.7% (3)	0.0% (0)	111
	Currently	9.0% (10)	23.4% (26)	22.5% (25)	22.5% (25)	17.1% (19)	5.4% (6)	0.0% (0)	111
Feeling that difficulties were piling up so high that you could not overcome them	Pre-COVID-19	20.7% (23)	37.8% (42)	27.0% (30)	8.1% (9)	5.4% (6)	0.9% (1)	0.0% (0)	111
	Currently	17.1% (19)	27.0% (30)	25.2% (28)	16.2% (18)	12.6% (14)	1.8% (2)	0.0% (0)	111

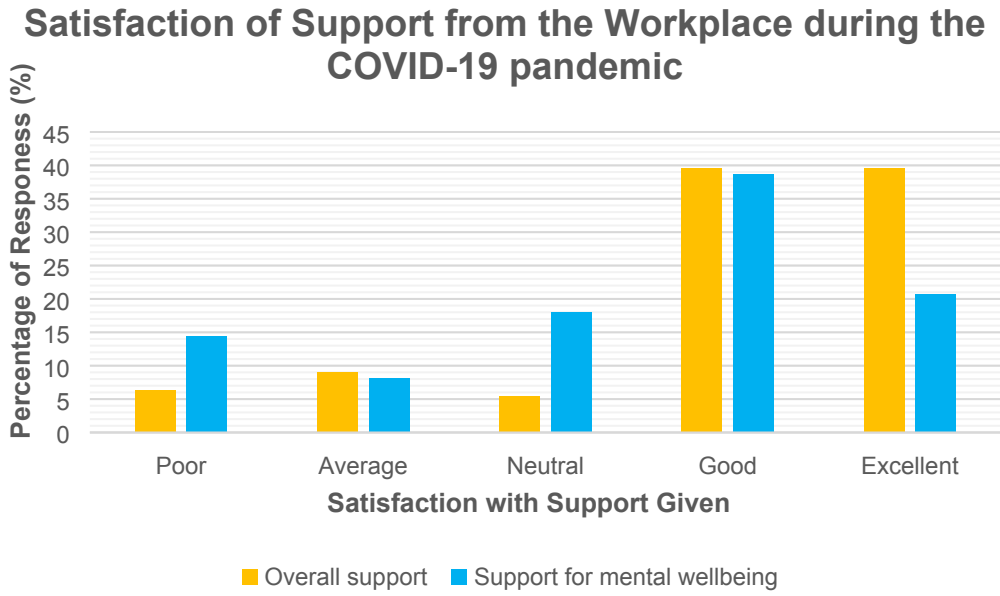


Figure 2: Bar chart showing the difference in satisfaction of overall support given from the workplace and support towards the mental wellbeing of General Practitioners, (n=111).

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