Health and social care professionals' experiences of coping while working in the frontline during the COVID-19 pandemic

Karina Soubra

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1. Lay Summary

Systematic Review- 'Factors Associated with Coping Among Health and Social Care Professionals Working During the Covid-19 Pandemic in the United Kingdom: A Systematic Review'

Background

The Coronavirus disease 2019 (Covid-19) was declared a global pandemic in early 2020. The virus rapidly spread and affected many. As there was a limited availability of effective treatments, health and social care workers (HSCWs) quickly became overwhelmed. Research has found that the unprecedented pressure placed on HSCWs had a negative impact on their mental health and wellbeing. However, little attention has focused on understanding their coping experiences. The aim of the current review was to understand what factors are associated with coping among HSCWs working in the frontline of the Covid-19 pandemic in the United Kingdom (UK).

Method

A systematic search of healthcare research databases was carried out to find published and unpublished studies about the coping experiences of HSCWs that were carried out between 29 December 2019 to 23 February 2022. Pre-prints of studies that were not published yet were important to include as the research related to Covid-19 is fast emerging. Studies with all types of methodologies were included. The inclusion and exclusion criteria were applied to the search results. Fifteen studies met inclusion criteria and were evaluated using the Mixed Methods Appraisal Tool.

Results

A method called ‘Narrative Synthesis’ was used to summarise the findings of the fifteen studies related to the coping experiences of HSCWs. The following seven themes were identified:

1. Work-related stressors
2. Safety concerns
3. Communication and leadership
4. Support structures
5. Individual differences and personal context
6. Feeling valued
7. Purpose and meaning in work

The factors that HSCWs identified as making it more difficult to cope were low staffing levels, increased workload, inadequate access to personal protective equipment, inconsistent communication, lack of clear guidance and feeling undervalued by their organisation. While the factors the HSCWs identified as helping them to cope were supportive relationships with colleagues, friends and family and experiencing an increased sense of purpose and meaning in their work.

Conclusion

The findings showed that there were many factors that impacted on the coping experiences of HSCWs. The themes link well with previous research about HSCWs experiences of working during Covid-19 and other pandemics. These results have implications for how HSCWs can be better supported to make it easier for them cope when facing future health crises.

Empirical Study- 'Health and social care professionals' experiences of coping while working in the frontline during the COVID-19 pandemic: one year on'

Background

As HSCWs continued to work during the Covid-19 pandemic in relentlessly stressful circumstances, their mental health and wellbeing was negatively affected. While a great deal of research has focused on understanding the nature of the distress they experience, there is a lack of research which focuses on their coping experiences and the underlying factors that influenced them. The aim of the empirical study was to develop an explanatory model of the processes that helped and hindered the coping experiences of HSCWs working in the Covid-19 frontline and how they inter-relate. The focus was on the experiences of HSCWs based in the UK only.

Method

Interviews were conducted with twenty UK-based HSCWs who took part in the study. The interviews lasted around one hour, were conducted remotely using video call technology and were audio recorded. The interviews were typed up and their content was then analysed using a method called 'Grounded Theory', which focuses on conceptualising participant's experiences as they themselves describe and perceive them. Also taking into consideration how the researcher has understood this.

Results

The analysis identified eleven theoretical codes (which are like key themes) and fifty-eight focused codes (which are like subthemes). The eleven theoretical codes identified were:

1. Personal context
2. Organisational resources
3. Organisational response

4. Management
5. Colleagues
6. Decisions-making and responsibilities
7. Internal impacts
8. External impactors
9. Safety
10. Barriers to accessing support
11. Temporal factors

The findings suggest that factors related to the individual themselves, their personal context, the organisation they work in, their managers, the support structures around them and their sense of safety impact on HSCWs' ability to cope. Factors such as having adequate PPE and feeling heard by their organisation were highlighted as significantly impacting coping. Internal impactors represent factors within oneself, such as an individual's temperament, while external impactors represent factors outside oneself, such as stigma. Temporal factors are factors that changed over time throughout the first year of the pandemic, such as workload and staff illness, which further impacted HSCWs' ability to cope. There were many barriers to accessing support that also impacted coping, including availability, awareness and time. The relationship between the factors that impacted coping were represented in a diagram.

Conclusion

The study was the first to try to explain how different factors impacted the coping experiences of HSCWs working in the frontline during the Covid-19 pandemic by developing a model. Some of the themes identified in this study were also similar to themes identified in previous studies conducted on HSCWs during Covid-19 and other pandemics, for example

how having safety concerns result in greater distress. The findings from this study may assist in the development of improved and more effective support for HSCWs.

Integration, Impact and Dissemination

The empirical study added to the findings from the systematic review by explaining how the different factors impacted the coping experiences of HSCWs working in the frontline during Covid-19 and developing a model to illustrate this. Similarities across the studies included the importance of having supportive relationship with managers, colleagues, friends, and family. Differences included feeling heard being identified as a significant factor that impacted coping in the empirical study but not being mentioned at all in the systematic review.

Future research needs to further explore the themes identified in the empirical study and evaluate how effective changes related to these factors are at improving the coping experiences of HSCWs. Health and social care organisations and providers of psychological support services can consider these factors when developing support services for staff and benefit from addressing the barriers to accessing support. The findings will be shared with clinicians, researchers and HSCWs.

2. Factors Associated with Coping Among Health and Social Care Professionals Working During the Covid-19 Pandemic in the United Kingdom: A Systematic Review

Abstract

The Coronavirus disease 2019 (Covid-19) pandemic placed significant demands on health and social care workers. The mental health impact of working in the Covid-19 frontline is increasingly being recognised and while there has been an increase in research focusing on this area, little attention has been paid to understanding health and social care workers' experiences of coping. The current review aimed to understand and synthesise what factors are associated with coping among health and social care professionals working during the Covid-19 pandemic in the United Kingdom (UK).

A systematic literature search of healthcare databases (PubMed, MedRxiv) from 29 December 2019 to 23 February 2022 was conducted. Relevant grey literature and pre-prints were included as the research related to Covid-19 is fast-emerging. Studies using all types of research methodologies, written in English, which focused on health and social care professionals who worked in the frontline throughout the Covid-19 pandemic and were based in the UK were included. Fifteen studies met inclusion criteria and were evaluated using the Mixed Methods Appraisal Tool.

A narrative synthesis of results was conducted which derived seven key themes: *work-related stressors, safety concerns, communication and leadership, support structures, individual differences and personal context, feeling valued* and *purpose and meaning in work*. Low staffing levels, increased workload, inadequate access to personal protective equipment, inconsistent communication, lack of clear guidance and feeling undervalued by their organisation hindered coping. While supportive relationships with colleagues, friends

and family and experiencing an increased sense of purpose and meaning in one's work facilitated coping.

The results of this systematic review show there are many factors that impacted the coping experiences of frontline health and social care workers. These findings have implications for how health and social care workers can be better supported to help alleviate the distress caused by working in the frontline.

Introduction

Coronavirus disease 2019 (Covid-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus, was declared a global pandemic by the World Health Organisation on 11 March, 2020. Healthcare systems around the world struggled to cope due to the rapid spread of the virus and limited availability of effective treatment options (Rathnayake et al., 2020). The overall pattern of the Covid-19 pandemic has involved a series of waves, periods of increased transmission of the virus, which lead to extraordinary amounts of pressure on healthcare systems during their peaks and in their aftermath (Zhang et al., 2021). While the negative impact of Covid-19 was felt at the organisational level in health and care settings, it was also felt at the individual level by staff who were overwhelmed as they worked in the pandemic 'frontline'. A frontline health and social care worker (HSCW) is defined as any clinical and non-clinical staff member involved in direct patient or client care, where there is direct interaction with them (Northern Health and Social Care Trust, 2021).

Research conducted during previous pandemics highlighted how the sudden onset of an immediately life-threatening illness within a population can have adverse psychological effects on frontline healthcare workers (Liu and Liehr, 2009; Kim, 2018; Lee et al., 2005). A systematic review and meta-analysis of the mental health impact of working during these

pandemics revealed that frontline healthcare workers were 1.7 times more likely to develop psychological distress and post-traumatic stress disorder (PTSD) compared to non-frontline workers (Kisely et al., 2020). During the Severe Acute Respiratory Syndrome (SARS) pandemic, healthcare workers who worked in SARS units, were quarantined or had loved ones infected with SARS, had higher levels of depression, anxiety and post-traumatic stress than healthcare workers who did not have these experiences (Wu et al., 2009). Similar studies have been conducted for healthcare professionals working during the Covid-19 pandemic with comparable results (Luo et al., 2020; Pappa et al., 2020), however similar research focusing on social care workers is lacking. A recently published systematic review found that anxiety, depression and PTSD were the most prevailing mental health conditions affecting healthcare workers globally (Chutiyami et al., 2022). Sun and colleagues (2021) found that the prevalence of anxiety is 37%, depression is 36% and insomnia is 32% in healthcare workers who were on the frontline during Covid-19 globally. While studies have demonstrated that healthcare workers from around the world have been susceptible to various mental health concerns, other studies found similar results amongst healthcare workers based in the United Kingdom (UK) (Wanigasooriya et al., 2021; Roberts et al., 2021).

The mental health of HSCWs can be adversely affected by epidemics for various reasons. Generally, rising cases lead to increased workload, longer hours, more intense working environments, physical exhaustion and work-life imbalance (Maunder et al., 2003). Additionally, concerns around risk of infection, nosocomial infection, inadequate personal protective equipment (PPE) and being forced to make difficult decisions in relation to patient care can also affect the mental wellbeing of healthcare workers (Pappa et al., 2020). Studies conducted during the SARS outbreak found that greater distress in healthcare workers was associated with treating colleagues, isolation, quarantining, concern for family health, job stress and perceived stigma from others (Maunders et al., 2008). Initially most of the research

on HSCWs during Covid-19 was predominantly quantitative, but there are a few published qualitative studies that have emerged which have focused on the psychosocial impact of working during Covid-19. The early qualitative findings suggest that healthcare workers based in the UK experienced heightened anxiety due to lack of pandemic preparedness, lack of training in new skills, PPE shortages and continuously changing PPE guidance (Vindrolas-Padros et al., 2020; Nyashanu et al., 2020).

The Covid-19 pandemic has highlighted the lack of research on the mental health needs of HSWCs. Pre-pandemic there was little interest and concern about burnout or other mental health impacts on HSCWs. Burnout results from chronic workplace stress that has not been effectively managed (World Health Organisation, 2018). Factors such as unclear job expectations, emotional exhaustion, lack of support at work and a lack of control over their work environments were associated with burnout for healthcare workers in the UK (Imo, 2017; Coyle et al., 2005).

HSCWs may experience similar workplace stress but how they manage this can differ. Coping is related to the thoughts and behaviours used by individuals to manage the demands of situations appraised as stressful (Lazarus and Folkman, 1984). Initially, an individual will appraise and determine whether a situation is stressful. The individual will feel stressed if they perceive the demands of a situation as exceeding their resources for dealing with it. The initial cognitive appraisals are followed by coping responses (Folkman and Lazarus, 1980). Individuals can cope in response to stressors in various ways. Studies have found that individual differences also influence how people appraise and cope with stressful situations (Matthews and Campbell, 2009; Ouwehand et al. 2008). A systematic review of the determinants and prevalence of burnout in emergency nurses revealed that a combination of individual and workplace factors predicted burnout amongst this population (Adriaenssens et al., 2015). The work-related factors included exposure to traumatic events,

organisational variables and job characteristics, while the individual factors included demographic variables and personal characteristics. Therefore, numerous factors can influence the coping experiences of HSCWs. Most of the early research on Covid-19 focused on measuring the mental health impact and psychological distress experienced by HSCWs (Billings et al., 2021c). While there have been systematic reviews that have focused on frontline HSCWs views on support and on interventions provided during pandemics generally (Billings et al., 2021c; Pollock et al., 2020), there have not been any that have focused on coping and specifically within the Covid-19 context. Emerging research has found HSCWs may be ambivalent about engaging with support offered due to many factors including not feeling like they needed the type of support offered and stigma of accessing certain types of support (Chen et al., 2020; Billings et al., 2021c). A better understanding of the barriers and facilitators of positive coping for this occupational group will enable the development and provision of more appropriate forms of support.

The current review aimed to understand and synthesise what factors are associated with coping among HSCWs working during the Covid-19 pandemic in the UK. The current review will synthesise a rapidly growing and recently produced set of literature, to better understand what the common factors are in the research. A systematic review of the relevant literature, including both qualitative and quantitative research, will help to provide an improved understanding of what factors facilitate or hinder coping for HSCWs. Including qualitative studies will ensure that HSCWs voices and views will be incorporated. The findings of the current review could inform the design of new evidence-based interventions that could help better support this occupational group when facing future health crises. Findings might help guide organisations in understanding how best to support HSCWs. Whereas previous reviews have often focused singly on healthcare workers, the current review adopts an inclusive approach by also including social care workers. While previous

reviews on HSCWs' experiences working during pandemics have focused on understanding the mental health impact of working in the frontline, their views on support and consolidating information regarding interventions (Chuniyami et al., 2021; Billings et al., 2021c; Pollock et al., 2020), there is no prior review to the author's knowledge which focuses specifically on understanding their coping experiences exclusively during the Covid-19 pandemic.

Method

Search Strategy

Studies were searched and retrieved from PubMed and medRxiv databases on 23rd February 2022. PubMed was chosen because this database searches all abstracts related to biomedical and life science research. The medRxiv database was used because it searches for complete but unpublished manuscripts and preprints in the medical, clinical and related health sciences. As research related to COVID-19 is fast developing, it was important to include preprints of the most up-to-date studies in this area. The searches were restricted to studies conducted from 1st January 2020 as COVID-19 was confirmed to be spreading in the UK from the end of January 2020. The search results were also limited to English language papers. The search strategy was reviewed by a librarian at Royal Holloway, University of London with experience in conducting psychological systematic reviews. Additionally, the reference lists of selected relevant studies were reviewed through backward and forward citation searching to identify articles that may have been missed by the database searches.

Four categories of search terms were generated to explore each concept in the research question (see Table 1). The Boolean operator 'OR' was used to combine all search terms within each concept and the Boolean operator 'AND' was used to combine the concepts. The search terms were adapted for the medRxiv database, less were used, as there was a word limit.

Table 1

Systematic review concepts and search terms

Concepts	Search Terms
Health and social care professionals	healthcare professional* OR healthcare worker* OR healthcare staff OR healthcare provider* OR physician* OR nurse* OR doctor* OR consultant* OR radiologist* OR surgeon* OR general practitioner* OR anaesthetist* OR allied health professional* OR healthcare support worker* OR midwi* OR occupational therapist* OR physiotherapist* OR speech and language therapist* OR operating department practitioner* OR paramedic* OR radiographer* OR pharmacist* OR mental health worker* OR psychologist* OR psychotherapist* OR social care worker* OR care home worker* OR nursing home worker* OR care worker* OR mortuary worker* OR healthcare assistant* OR health service manager* OR porter*
Coping	coping OR resilience factors
Covid-19	Covid-19 OR COVID OR COVID19 OR COVID 19 OR covid OR coronavirus OR SARS-CoV-2
United Kingdom	United Kingdom OR England OR Scotland OR Wales OR Northern Ireland

Study Eligibility

The following inclusion and exclusion criteria were applied when reviewing the search results to identify relevant studies. This systematic review looked at both qualitative and quantitative papers related to the research question. Studies where the data for HSCWs could not be extracted alone were excluded.

Inclusion criteria:

- Papers published in peer-reviewed journals and reporting original research (using any methods)
- Completed but unpublished manuscripts (pre-prints)
- Studies focusing on coping experiences of HSCWs working in the frontline during the Covid-19 pandemic
- Studies involving all types of HSCWs working in the frontline during the Covid-19 pandemic (including administrative)
- Studies based in the UK only
- Studies published or completed after 31 December 2019
- Studies involving adults (≥ 18 years)
- Studies in English

Exclusion criteria:

- Book chapters, book reviews, dissertations, editorials, opinion pieces, conference presentations and abstracts which did not report a research study
- Studies that focused only on reporting the coping experiences of the general public during the Covid-19 pandemic
- Studies that focused on topics that were related but not specific to the coping experiences of HSCWs working during the Covid-19 pandemic (for example, studies that reported findings on coping experiences of the HSCWs working in other pandemics or epidemics)
- Studies in languages other than English

Study Selection

Studies were identified, screened and assessed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Moher et al., 2009). The database searches identified 263 articles which were extracted from the databases to

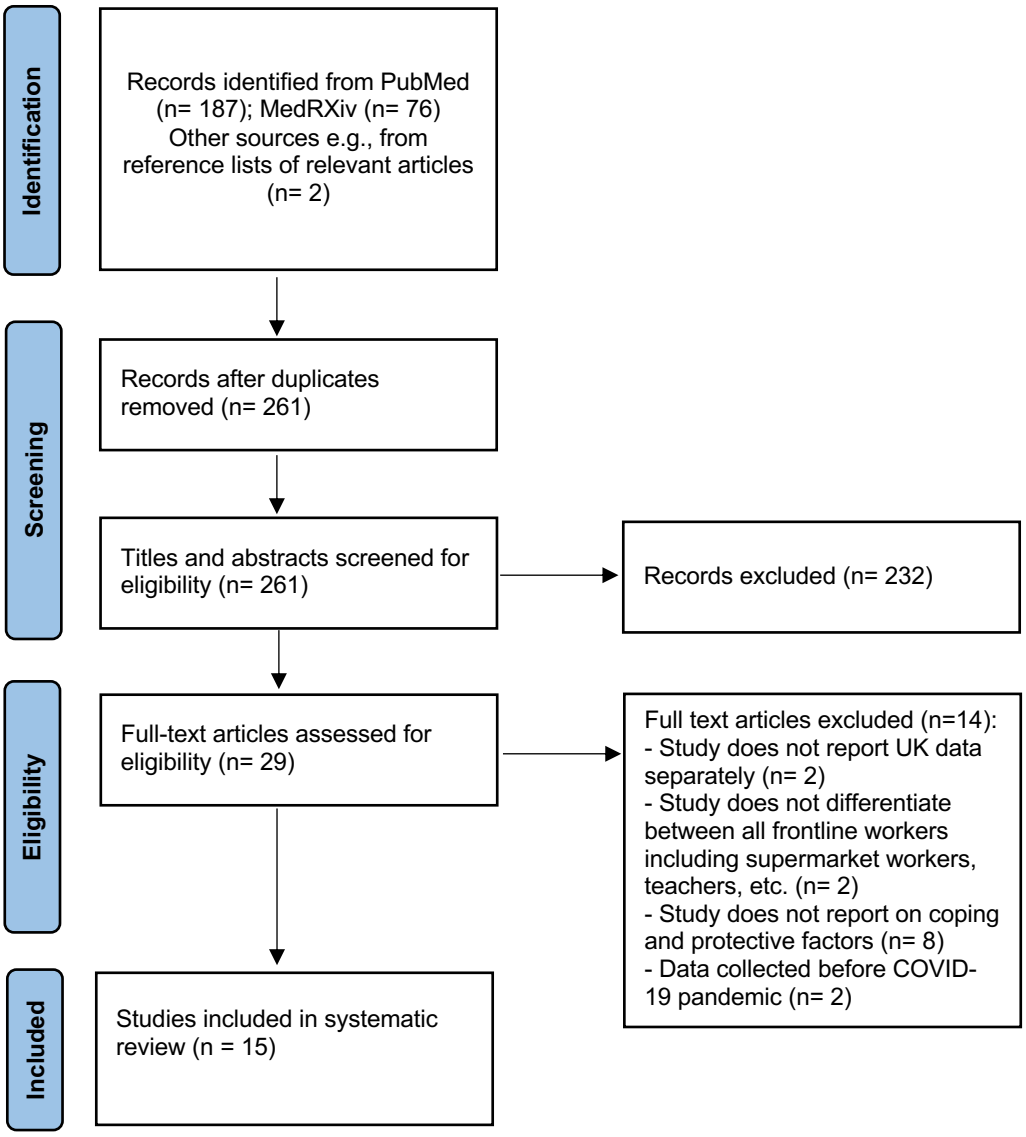
referencing software EndNote. Four duplicates were removed, leaving 259 articles. Two additional articles were identified through backward and forward citation searches of reference lists of relevant studies.

The titles and abstracts of the 261 articles were then screened for eligibility in line with the inclusion and exclusion criteria. To account for risk of bias, twenty percent of the papers (n=52) were reviewed by a second reviewer who was a trainee clinical psychologist. There was a 94.2% agreement between the two reviewers. Inter-rater reliability was assessed by calculating Cohen's Kappa. The inter-rater agreement value was kappa= 0.88, indicating almost perfect agreement (Landis and Koch, 1977). Disagreements were resolved through discussions with the second reviewer. At this stage, 232 articles were excluded as both reviewers agreed that they were irrelevant. Reasons for exclusion included studies not being based in the UK, not conducted during the Covid-19 pandemic and not reporting on the experiences of HSCWs.

The remaining 29 papers were read in full and further assessed for eligibility. Twenty percent of these articles (n=6) were independently reviewed by the same second rater. There was 100% agreement between the two reviewers and the inter-rater agreement was kappa= 1, indicating perfect agreement. Reasons for exclusion were documented throughout the full text review process. Fifteen studies were deemed eligible and included in the systematic review.

Figure 1

Prisma flow diagram of study selection process



Quality Assessment

The methodological quality of the included studies was assessed. The Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018) was used because it allows for the critical appraisal of qualitative, quantitative and mixed-methods studies. Using the MMAT eliminates the need to use different tools for each type of study design. The MMAT has good content validity (Hong et al., 2019) and reliability (Pace et al., 2012). The MMAT is composed of two initial screening questions designed to ensure the studies being assessed

were empirical. Following this, the quality of each study was appraised by rating whether it met the five criteria related to the relevant study design. All criteria ratings were documented with either a 'yes', 'no' or 'can't tell'. A quality assessment score was derived by calculating the proportion of 'yes' answers for the five design-specific criteria.

For qualitative papers, the assessment was based on the following criteria: is the qualitative approach appropriate to answer the research question, are the qualitative data collection methods adequate to address the research question, is the interpretation of results sufficiently substantiated by data, and is there coherence between qualitative data sources, collection, analysis and interpretation. For quantitative studies, the assessment was based on the following criteria: is the sampling strategy relevant to address the research question, is the sample representative of the target population, are the measurements appropriate, is the risk of nonresponse bias low, and is the statistical analysis appropriate to answer the research question. For mixed-methods studies, the appraisal was based on the following criteria: is there an adequate rationale for using a mixed-methods design to address the research question, are the different components of the study effectively integrated to answer the research question, are the outputs of the integration of qualitative and quantitative components adequately interpreted, are divergences and inconsistencies between quantitative and qualitative results adequately addressed, and do the different components of the study adhere to the quality criteria of each tradition of the methods involved.

The current systematic review included all identified studies regardless of quality ratings to include all potential valuable insights and provide a detailed description of what was observed (Thomas and Harden, 2008). Nevertheless, all included studies were rated as being of at least moderate quality. The outcomes of the quality assessment are reported in the Results section.

Data Extraction

Data was extracted from the included studies using a pre-determined data extraction table designed to capture study characteristics and specific outcomes related to factors associated with coping in HSCWs. The following data was extracted: authors, date of publication, title, design, population, methodology, phase of pandemic when study was conducted, sampling used, sample characteristics and reported themes or outcomes.

Data Synthesis

Given the heterogeneity of research on the factors associated with coping in HSCWs working in the frontlines during the Covid-19 pandemic, the current systematic review adopted a narrative synthesis approach to analysing the included studies and their results (Popay et al., 2006). Conducting a meta-analysis or meta-synthesis of study results was not appropriate because of the significant variation in study designs and measures used. The data from included studies was too heterogenous. The relevant findings from included studies were extracted, summarised and divided into themes to synthesise results. To begin with, the primary researcher read and reread all the papers to identify relevant findings related specifically to coping experiences. These findings were reviewed and emergent themes were identified from each study. Emergent themes that related to each other across studies were then grouped together to form key themes.

Results

Study Characteristics

In total, fifteen studies were included in the current review. The studies included were carried out between the years 2020 and 2021 in the UK. The studies were conducted throughout the UK (n=11), in England only (n=1), Scotland only (n=1), Wales only (n=1), and in England and Wales only (n=1). The studies included a total number of 5334 individual

participants. Sample sizes ranged from 1 (Dyson and Di Lamb, 2021) to 2541 (McFadden et al., 2021). There were 3132 healthcare workers, 1026 social care workers and 1176 individuals with other roles across all the studies. Eleven of the studies focused on healthcare workers only while four focused on HSCWs. Two studies focused exclusively on doctors, two studies focused exclusively on mental health professionals, one study focused exclusively on nurses, one study focused exclusively on junior doctors and one study focused exclusively on urgent dental care workers. Studies were conducted either during the first wave (n=6), first recovery phase (n=5), second wave (n=1) or after the second wave of the Covid-19 pandemic in the UK (n=1). For two of the studies the period when data collection took place was not stated (Daniels et al., 2021, Walter and McCabe, 2021).

Of the fifteen studies, four were quantitative studies with a cross-sectional design. Two studies had a mixed-methods design. Nine were qualitative studies using the following approaches: reflexive thematic analysis (n=4), thematic analysis (n=1), content analysis (n=1), phenomenology (n=2) and a case series descriptive design (n=1). Ten studies used purposive sampling, two studies used snowball sampling and one study used both purposive and snowball sampling. The studies that had a case series and phenomenological design did not adopt any sampling approach. Six studies use semi-structured one-to-one interviews to collect data, seven studies used online surveys and two studies used first-hand accounts of events. For further information on study characteristics and outcomes see Table 2.

For details about the measures used in the quantitative and mixed-methods studies, see Appendix A.

Table 2

Study characteristics and outcomes

	Reference	Title	Design	Population (in the UK)	Methodology and sample	Measures	Factors associated with coping	MMAT Quality Score
1	Aughterson et al. (2021)	Psychosocial impact on frontline health and social care professionals in the UK during the COVID-19 pandemic: a qualitative interview study	Qualitative: Reflexive Thematic analysis	Frontline health and social care professionals	Semi-structured, one-to-one interviews conducted after the second wave of the pandemic Purposive sampling Total: N= 25 Healthcare worker: N= 18 Social care worker: N= 7	None	*Factors that hindered coping:* - Communication challenges; due to virtual consulting and the increase in difficult conversations with patients and their families - Work-related stressors; resulting from the public not following the rules, worrying about transmitting the virus to loved ones, increased workload and changing work conditions *Factors that facilitated coping:* - Support structures; having supportive relationships with colleagues, management, family and friends as well as feeling supported by the public. Team unity and clear and consistent leadership were also associated with being supported. - Resilience; accepting uncertainty, having an increased sense of purpose associated to their work, adopting proactive coping strategies such as engaging in meaningful activities, maintaining routines and limiting news intake. - Personal growth; increased reflection, improved non-work relationships and slowing down due to decreased social obligations.	100%

2	Billings et al. (2021a)	Experiences of mental health professionals supporting front-line health and social care workers during COVID-19: qualitative study	Qualitative: Reflexive Thematic Analysis	Mental health professionals working in roles supporting frontline health and social care workers	Semi-structured, one-to-one interviews conducted in the first recovery phase of the pandemic Snowball sampling through health and social care contacts Mental health professionals: N=28	None	*Factors that hindered coping:* - Increased anxiety resulting from the uncertainty about how best to treat frontline workers - Issues with confidentiality resulting from blurred boundaries as colleagues became clients - Feeling isolated due to lone working as many worked from home - Vicarious trauma and moral injury - Increased workloads and responsibilities - Neglecting their own needs due to increased working hours *Factors that facilitated coping:* - Experiences of growth due to increased opportunities for development and leaning - Feeling motivated by an increased sense of meaning and purpose in their work	100%
3	Billings et al. (2021b)	What support do frontline workers want? A qualitative study of health and social care workers' experiences and views of psychosocial support during the COVID-19 pandemic	Qualitative: Reflexive Thematic Analysis	Frontline health and social care professionals	Semi-structured, one-to-one interviews conducted in the first recovery phase of the pandemic Snowball sampling through healthcare colleagues Total: N= 25 Healthcare worker: N= 24	None	*Factors that hindered coping:* - Competing demands between work and family commitments, including caring responsibilities - Worrying about contaminating family and others resulted in greater separation and sacrifice - Having practical support provided and then taken away while they continued to work in the frontline - Being offered support that was difficult to access - Inconsistent communication and lack of clear guidance *Factors that facilitated coping:* - Maintaining an attitude of 'just getting on with it' as a way of staying positive - Finding purpose and meaning in the work - Engaging in existing coping strategies when they had the opportunity, such as exercise and socialising	100%

					Social care worker: N= 1		- Family and friends were important source of emotional and practical support - Support from colleagues and peers who were 'in the same boat' - Practical support such as free food and parking were helpful when they were accessible - Flexible working patterns and being able to take breaks - Being able to talk and be listened to by a mental health professional with expertise, neutrality and confidentiality	
4	Cipolotti et al. (2021)	Factors contributing to the distress, concerns, and needs of UK Neuroscience health care workers during the COVID-19 pandemic	Quantitative: Cross-sectional	Doctors, nurses, allied health professionals (AHPs), and non-clinical staff working at a neuroscience hospital	Online survey, completed once during the peak of the first wave of the pandemic Survey sent to entire workforce of neuroscience hospital Healthcare workers responded: N=158 (approximately 10% of workforce)	Survey developed by research team Responses provided using Likert scales	*Factors that hindered coping:* - Concerns regarding risk of infection; worries about colleagues becoming critically ill or dying, insufficient workforce, infecting others, becoming ill or dying themselves, patients becoming critically ill or dying, access to scrubs masks and other PPE - Work challenges; concerns related to performance at work/making mistakes, discussions regarding dying with patients/families, dealing with the emotional reactions of patients/families and changes to role, hours worked or shift pattern - Social change; distancing from family and friends due to work or fears of becoming infected, being unable to engage in usual activities and news stories and social media posts about COVID-19 - Being female - Having previous mental health history *Factors that facilitated coping:* - Receiving clear updates about Covid - Being offered psychological support either individually or as a team - Access to rest space - Improved access to PPE - More time to meet with supervisors and colleagues - More training and knowledge on COVID and patients' medical needs - Greater flexibility in working arrangements	80%

5	Cubitt et al. (2021)	Beyond PPE: a mixed qualitative–quantitative study capturing the wider issues affecting doctors' well-being during the COVID-19 pandemic	Mixed: Cross-sectional and Thematic Analysis	Doctors working in an Acute NHS Trust in England	Online survey, completed at the start of the first recovery phase of the pandemic Survey emailed to all 449 doctors within the trust Doctors: N=242 (54% response rate)	Questionnaire developed by research team consisting of nominal, multiple-choice questions, followed by free-text questions	*Factors that hindered coping:* - Individual's personal situations - Lack of ability to socially distance - Staffing levels - Lack of availability of staff testing - Lack of clear guidance or leadership and discrepancies in information - Feeling undervalued - Increase in workload and not being able to take adequate breaks - The command and control management structure which limited autonomy, negatively impacted collaborative working and restricted bottom-up communication - Increased vulnerability with being BAME *Factors that facilitated coping:* - Having their contributions appropriately recognised boosted morale - Practical support in the form of free food, drinks, parking and introduction of calm rooms - Emotional support in the form of expanded psychological support services	80%

6	Daniels et al. (2021)	The COVID-19 Clinician Cohort (CoCCo) Study: Empirically Grounded Recommendations for Forward-Facing Psychological Care of Frontline Doctors	Qualitative: Thematic Analysis	Frontline doctors specialising in emergency medicine, anaesthetics or intensive care in England and Wales	Semi-structured, one-to-one interviews Purposive sampling Doctors: N=31	None	*Factors that hindered coping:* - No time to access support - Bad communication and poor leadership within the organisation - Impact of government and press handling of the pandemic - Being offered guides to healthy eating and resilience by their Trusts as this was viewed as insulting given the demands of their situation prevented them from being able to look after themselves. Resilience was not something they considered they lacked - The relentlessness, lack of preparedness and changing patient demographic in the second wave *Factors that facilitated coping:* - Talking to colleagues - Accessing specialist support - Having embedded psychological support services as this made it more accessible - Informal support from friends and family - Mental wellbeing applications and phone services - Feeling valued as a result of small gestures of kindness or changes to the work environment - Practical support meeting basic human needs such as hot food, drink, comfortable chairs, rest areas, free parking, plentiful scrubs and working hot showers	100%

7	Dyson and Di Lamb (2021)	From front line to battle planning: a nursing perspective of covid-19	Qualitative: Phenomenology	Nurses working in a busy NHS surgical ward	First-hand account of a senior Sister and her experience leading a nursing team through the initial wave N=1	None	*Factors that hindered coping:* - Fear of contamination - Fear of becoming a vector of contamination and transmitting Covid-19 to their loved ones at home - Being socially distanced from established support networks - Difficult decisions related to safety - Difficult conversations with patient's relatives *Factors that facilitated coping:* - Regular updates and training in PPE donning and doffing drills - Regular reassurance and safety monitoring - Clear opportunities for two-way communication - Peer support as 'all in the same boat' and opportunities for reflection - Available and easy access to psychological support if required - Enabling choice of working environment - Maintaining high standards of compliance with PPE - Regular organisational updates - Training opportunities to enhance clinical skills - Enabling staff engagement in change processes	60%
8	Gemine et al. (2021)	Factors associated with work-related burnout in NHS staff during COVID-19: a cross-sectional mixed methods study	Mixed: Cross-sectional and Thematic Analysis	Healthcare professionals working within an NHS Trust in Wales	Online survey, completed during the peak of the first wave Survey emailed to all staff within trust Healthcare workers responded: N=257 (approximately	Questionnaire developed by research team CBI PSC-10	*Factors that hindered coping:* - Working in any form of Covid-19 role - The declining ability to rest and recover during breaks due to increased workload - Having any concerns about PPE - Lack of control on changes to their role and lack of choice in work - Poor communication from managers and health board, inconsistencies in information being circulated - Feeling undervalued - Lack of equipment and training *Factors that facilitated coping:* - Improved communication with their team leading to strengthened	80%

					2.5% of workforce)		relationships - Working from home which enhanced work/life balance - Clear guidelines/information relayed	
9	Greene et al. (2021)	Predictors and rates of PTSD, depression and anxiety in UK frontline health and social care workers during COVID-19	Quantitative: Cross-sectional	Frontline health and social care professionals	Online survey, completed during the post-peak of the first wave Survey circulated via email and social media Total: N= 1194 Healthcare worker: N= 952 Social care worker: N= 105 Other: N= 133 Missing: N=4	Survey developed by research team ITQ PHQ-9 GAD-7	*Factors that hindered coping:* - Not being able to tell their manager if they are not coping - Being worried about infecting others - Perceived stigmatisation due to their role - Not having reliable access to PPE - Having been redeployed - Worrying about being infected with COVID - Having had COVID *Factors that facilitated coping:* - Higher household income	100%
10	McFadden et al. (2021)	The Role of Coping in the Wellbeing and Work-Related Quality of Life of UK Health and Social Care Workers during COVID-19	Quantitative: Cross-sectional	Healthcare, social care and social workers	Online survey, completed during the post-peak of the first wave Survey circulated via email, newsletters and social media posts Total: N= 2541 Healthcare worker: N= 589	Demographic questionnaire WEMWBS WRQOL Brief COPE scale Clark, Michel, Early	*Factors that hindered coping:* - Avoidance - Substance use *Factors that facilitated coping:* - Accepting the reality of COVID and trying to learn to live with it - Help-seeking - Humour - Work-family segmentation - Working to improve skills - Recreation and relaxation	100%

					Social care worker: N= 913 Social worker: N= 1039	and Baltes scale		
11	Newman et al. (2021)	Experiences and emotional strain of NHS frontline workers during the peak of the COVID-19 pandemic	Qualitative: Content Analysis	Frontline healthcare workers	Online survey with open-ended questions completed during the peak of the first wave Survey circulated via email, social media platforms and by approaching local and regional organisations Healthcare worker: N= 395	None	*Factors that hindered coping:* - Mixed messages from management - Rapidly changing guidance within hours - Feeling unsupported at work - Worrying about catching Covid-19 and passing it on to loved ones - Not being able to care for patients as usual - Feeling overwhelmed, unprepared and incompetent, especially when redeployed - Concerns with limited or insufficient PPE - Burden of trying to support colleagues - Difficulties in personal context including managing childcare, additional care responsibilities and worries about a family member or bereavement *Factors that facilitated coping:* - Support from colleagues - Engaging in meaningful activities - Personal support network - Maintaining social contact others either by phone, social media or video call - Appropriate safety measures put in place at work - Frequent communication from managers - Mental and wellbeing support - Ensuring sufficient breaks in shifts - Management of overwork - Appropriately paid overtime - Avoiding news	60%

12	Pappa et al. (2021)	Tired, Worried and Burned Out, but Still Resilient: A Cross-Sectional Study of Mental Health Workers in the UK during the COVID-19 Pandemic	Quantitative: Cross-sectional	Mental health workers from across a large urban mental health service	Online survey completed during the beginning of the first recovery phase All staff from the service were invited to participate, participants were self-selected Healthcare worker: N= 387	Questionnaire developed by research team MBI RS -14 PHQ-9 GAD-7 AIS NFRS	*Factors that hindered coping:* - Concerns about transmitting COVID to patients, friends, family and colleagues and the impact this would have on them - Concerns about self-contamination - Fear of COVID - Being pressured at work - Pre-existing mental health condition - Being female *Factors that facilitated coping:* - Feeling supported at work - Availability of training on PPE use - Receiving appropriate information at work	80%
13	Plessas et al. (2021)	Frontline experiences and perceptions of Urgent Dental Care centre staff in England during the COVID-19 pandemic: a qualitative study	Qualitative: phenomenological approach	Dentists and dental nurses from urgent dental care centres across the UK	Semi-structured, one-to-one interviews conducted during the first recovery phase Purposive sampling through professional networks, followed by snowballed sampling. Urgent dental care worker: N= 30	None	*Factors that hindered coping:* - Feeling undervalued - Feeling frustrated due to fragmented guidance and communication - Ineffective communication channels across healthcare sectors - Sense of unfairness generated by challenges between team members, for example some staff feeling taken advantage of when their workload increased due to other staff staying home due to their perception of risk - Patient demand exceeding capacity of services - Complex decision-making - Uncertainty over safety due to fears of contracting the virus or passing it on to colleagues, patients and/or loved ones - Suffocating PPE hindering effective communication with patients *Factors that facilitated coping:* - Role fulfilment and having a sense of purpose - Feeling appreciated by patients - Team unity and using collective coping strategies to develop team resilience	100%

							such as regular debriefing sessions and using a dedicated 'wobble room' - Strategic teamwork and preparedness for effective organisation of care for example when staffing issues arose due to staff being redeployed or shielding	
14	Spiers et al. (2021)	What challenges did junior doctors face while working during the COVID-19 pandemic? A qualitative study	Qualitative: Reflexive Thematic analysis	Junior doctors who were experiencing distress as a result of their working conditions	Semi-structured, one-to-one interviews conducted during the second wave Purposive sampling, self-identified participants screened with questionnaires to establish whether they had high levels of distress Junior doctors: N=15	None	*Factors that hindered coping:* - fear for their own safety and that of their loved ones who they could contaminate - Not being able to switch off after work - Not feeling clinically, psychologically and physically supported in their new working environments - Increase in workload in and out of work because they had to learn about the virus - Lower staffing levels - Having to adapt to new ways of working, such as telephone appointments which were clinically challenging - Patients and colleagues becoming irritable or verbally aggressive due to increased stress - Uncertainty around changes to rota and about redeployment *Factors that facilitated coping:* - Flexibility in terms of working from home if needed to self-isolate - Supportive team - Longer rotations and consistent teams due to changes in ways of working. This gave participants more of a sense of being part of a team - Being offered practical support such as hot meals and rest areas	100%
15	Walker and McCabe (2021)	Psychological defence mechanisms during the COVID-19 pandemic: A case series	Descriptive: Case Series	Frontline healthcare workers from a large teaching hospital in Scotland	5 clinical vignettes illustrating 5 different defence mechanisms Healthcare worker: N=5	None	*Defence mechanisms that hindered coping:* - Hypochondriasis *Defence mechanisms that facilitated coping:* - Denial - Altruism - Sublimation - Humour	60%

Overall Quality Assessment

Using the MMAT, the overall quality assessment score was 100% for eight studies (Aughterson et al., 2021; Billings et al., 2021a; Billings et al., 2021b; Daniels et al., 2021; Greene et al., 2021; McFadden et al., 2021; Plessas et al., 2021; Spiers et al., 2021), 80% for four studies (Cipolotti et al., 2021; Cubitt et al., 2021; Gemine et al., 2021; Pappa et al., 2021), 60% for three studies (Dyson and Di Lamb, 2021; Walker and McCabe, 2021; Newman et al., 2021).

For all the qualitative studies, the qualitative approach used was appropriate to answer the research question. For all the studies except Newman et al. (2021), the qualitative data collection methods were deemed adequate to address the research question. The findings were adequately derived from the data for all the studies except Dyson and Di Lamb (2021) and Walker and McCabe (2021). The interpretation of results was sufficiently substantiated by the data for all qualitative studies except Dyson and Di Lamb (2021) and Walker and McCabe (2021). There was coherence between qualitative data sources, collection, analysis and interpretation for all studies except Newman et al. (2021).

For all the quantitative studies, the sampling strategy was found to be relevant to address the research question, the sample was representative of the target population and the statistical analysis used was appropriate to answer the research question. For all the studies except Cipolotti et al. (2021), the measurements used were found to be appropriate. The risk of nonresponse bias was low for all studies except Pappa et al. (2021).

For the two mixed-methods studies, they both had adequate rationales for using a mixed-methods design, effectively integrated the different components to answer their research questions and interpreted the outputs of the integrated components appropriately. The different components of both studies also adhered to the quality criteria of each tradition of the methods involved. Divergences and inconsistencies between qualitative and qualitative

results were not discussed or referenced in either study therefore both did not meet this criterion.

The MMAT quality appraisal tool does not assess sample sizes and power calculations. However, none of the included studies reported on how their sample size was justified or whether there was adequate power to identify a significant result in their data. For quality rating details for each included study see Appendix B.

Narrative Synthesis of Findings

As the included studies were heterogenous in design and outcome, a narrative synthesis approach was used to identify and summarise key findings (Popay et al., 2006). Initial analysis of study findings revealed seven key themes that were reported frequently: work-related stressors, safety concerns, communication and leadership challenges, support structures, individual differences and personal situations, feeling valued and purpose and meaning in work. The key findings related to each of these themes are summarised in this section. See Table 3 for illustrative quotes related to each of the themes identified.

Work-Related Stressors

In total, thirteen studies of varying quality explored work-related stressors and how they impacted HSCWs' ability to cope. Although the studies by Newman and colleagues (2021) and Dyson and Di Lamb (2021) discuss how work-related stressors impacted on coping, it should be noted that they were both found to be of lower quality than the other studies mentioned. Eight studies found that increased workloads during the Covid-19 pandemic hindered HSCWs' ability to cope. Three studies of high quality discussed the association between lower staffing levels and increased workloads (Cubitt et al., 2021; Plessas et al., 2021; Spiers et al., 2021). They found that staffing levels had decreased because of staff illness, shielding and redeployment. Three studies of high quality (Billings et al., 2021a; Cubitt et al., 2021; Gemine et al., 2021) and one study of lower quality (Newman

et al., 2021) found that the increase in workload also meant that HSCWs were not able to take sufficient breaks during their shifts, which hindered coping. Two studies of varying quality discussed how being redeployed negatively impacted coping because HSCWs found themselves in unfamiliar environments where they were asked to perform procedures they had no prior experience conducting (Greene et al., 2021; Newman et al., 2021). Two studies of varying quality found that not having a choice in their redeployment and experiencing a lack of control over their work environment negatively impacted on healthcare professionals' coping (Dyson and Di Lamb, 2021; Gemine et al., 2021). Having flexible working patterns that they had more control over were preferred (Billings et al., 2021b).

Two studies of varying quality discussed how being forced to make more complex decisions while working made it more difficult for them to cope (Dyson and Di Lamb, 2021; Plessas et al, 2021). The difficult decisions stemmed from a lack of resources and patient demands being greater than capacity of services (Plessas et al., 2021). Two studies of varying quality highlighted how HSCWs found it difficult to cope because of the increasingly difficult conversations they had to have with patients and their families (Aughterson et al., 2021; Dyson and Di Lamb, 2021). Billings and colleagues (2021a), a high quality study, found that mental health professionals experienced vicarious trauma and moral injury through their work supporting frontline staff and hearing about their experiences at work, which made it harder for them to cope. Participants also reported neglecting their own needs and wellbeing because of increased workloads. Two studies of varying quality discussed how HSCWs struggled to cope because of the uncertainty of how to treat patients and not being able to care for them as they typically would, due to infection control procedures (Billings et al., 2021a; Newman et al., 2021). One study of high quality indicated that healthcare workers found it difficult working in PPE all day which felt suffocating and affected communication with patients (Plessas et al., 2021).

Three studies of varying quality found that receiving training to enhance HSCWs' skills facilitated coping (Cipolotti et al., 2021; Dyson and Di Lamb, 2021; McFadden et al., 2021). Two high quality studies found that healthcare workers that were able to work from home found this helpful despite feeling isolated from their teams as they were better able to manage family responsibilities (Billings et al., 2021a; Gemine et al., 2021). However, most HSCWs could not work from home due to the nature of their work and in their cases flexible working patterns facilitated coping. Newman and colleagues (2021), a lower quality study, found that being appropriately paid for overtime helped healthcare workers to cope.

Safety Concerns

In total, twelve studies of varying quality discussed the association between the safety concerns of HSCWs and their ability to cope. Nine studies found that worrying about becoming infected with Covid-19 and contaminating others had a negative impact on coping (Augherson et al., 2021; Billings et al., 2021b; Cipolotti et al., 2021; Dyson and Di Lamb, 2021; Greene et al., 2021; Newman et al., 2021; Pappa et al., 2021; Plessas et al., 2021; Spiers et al., 2021). Two of these studies were of lower quality compared to the rest (Dyson and Di Lamb, 2021; Newman et al., 2021). HSCWs worried a great deal about infecting loved ones, patients and colleagues. Five high quality studies (Cipolotti et al., 2021; Gemine et al., 2021; Greene et al., 2021; Plessas et al., 2021) and one lower quality study (Dyson and Di Lamb, 2021) found that inadequate and unreliable access to PPE made it more difficult for HSCWs to cope.

Aughterson and colleagues (2021), a high quality study, found that observing the public not following Covid restrictions and regulations negatively impacted HSCWs' ability to cope because it made them feel less safe. Cubitt and colleagues (2021), a high quality study, found that lack of staff testing and the inability to socially distance at work due to restricted space hindered coping. Walker and McCabe (2021), a lower quality study which

presented a case series of defence mechanisms used by frontline healthcare workers found that hypochondriasis hindered their ability to cope. Cubitt and colleagues (2021), a high quality study, found that being Black, Asian and Minority Ethnic (BAME) and knowing about the increased vulnerability to Covid-19 with being BAME hindered coping for HSCWs.

Two studies showed that HSCWs found receiving regular training on PPE facilitated coping, one was of lower quality (Dyson and Di Lamb, 2021) while the other was of higher quality (Pappa et al., 2021). Two studies found that having appropriate safety measures put in place at work and having them adequately adhered to helped healthcare workers to cope (Dyson and Di Lamb, 2021; Newman et al., 2021), however these were two of the studies that scored the lowest in terms of overall quality.

Communication and Leadership

In total, ten studies of varying quality discussed how communication impacted on HSCWs' ability to cope. While three high quality studies found that poor and inconsistent leadership impacted on HSCWs' ability to cope (Aughterson et al., 2021; Cubitt et al., 2021; Daniels et al., 2021).

Four high quality studies found that receiving poor and inconsistent communication from their organisations made it difficult for HSCWs to cope because it created confusion (Billings et al., 2021b; Cubitt et al. 2021; Daniels et al., 2021; Plessas et al., 2021). Pappa and colleagues (2021), a high quality study, reported that receiving appropriate information at work helped healthcare workers to cope. Two studies discussed the importance of two-way communication between the organisation and staff. Cubitt and colleagues (2021), a higher quality study, found that restricting bottom-up communication stopped doctors from being able to suggest changes that could help them, while Dyson and Di Lamb (2021), a lower quality study, discussed how providing opportunities for two-way communication facilitated

coping for nurses. In one high quality study participants spoke about how receiving poor communication from managers hindered their ability to cope (Gemine et al., 2021), while in another study of lower quality participants spoke about how receiving frequent communication from managers facilitated coping because they were constantly kept informed (Newman et al., 2021).

Two high quality studies found that changes in the way HSCWs communicated with patients hindered their coping. Aughterson and colleagues (2021) reported that participants found communicating with patients challenging when they could only provide virtual consultations, while Plessas and colleagues (2021) reported that participants found it difficult to communicate effectively with patients while wearing full PPE which they found suffocating.

Three high quality studies found that a lack of clear guidance hindered coping because HSCWs would be left feeling confused about PPE and safety procedures (Billings et al., 2021b; Cubitt et al, 2021; Plessas et al. 2021). Participants in one high quality (Billings et al. 2021b) and one lower quality study (Newman et al., 2021) reported that rapidly changing guidance in particular hindered coping because this resulted in regular changes to processes which required them to adapt to quickly, causing stress.

Support Structures

In total, eleven studies of varying quality found that having support structures in place at work and home impacted on the ability of HSCWs to cope.

One higher quality (Spiers et al., 2021) and one lower quality (Newman et al., 2021) study found that feeling unsupported at work had a negative impact on healthcare workers' ability to cope. While another high quality study found that participants reported feeling supported at work helped them to cope (Pappa et al., 2021). Aughterson and colleagues (2021), a high quality study, reported that having supportive relationships with management

helped HSCWs to cope. Greene and colleagues (2021), a high quality study found that not being able to tell managers that they are not coping made it more difficult for them to cope. Four high quality studies found that being offered practical support such as hot meals and rest areas helped facilitate coping (Billings et al., 2021b; Cubitt et al., 2021; Daniels et al., 2021, Spiers et al., 2021). While four high quality studies (Billings et al., 2021b; Cipolloti et al., 2021; Cubitt et al., 2021; Daniels et al., 2021) and one lower quality study (Dyson and Di Lamb, 2021) also found that being offered emotional support in the form of psychological and counselling services helped facilitate coping for HSCWs. Participants in a high quality study reported that they appreciated being able to discuss their difficulties with a mental health specialist when psychological support services were offered (Billings et al., 2021b). These services were largely valued when they were available, however there were disparities in availability across services. Participants reported that there were also significant barriers to accessing them, including lack of awareness and inconvenient timings. Two high quality studies (Billings et al., 2021b; Daniels et al., 2021) and one lower quality study (Dyson and Di Lamb, 2021) discussed how making the support easily accessible was vital. Two high quality studies found that even when support was offered by their organisation, participants reported that it was difficult to access as they did not have time to attend during the workday which was usually when the support was offered (Billings et al., 2021b; Daniels et al., 2021). Participants in one high quality study reported that being offered support and then having it taken away suddenly negatively impacted their ability to cope because it made them feel de-valued which lowered morale (Billings et al., 2021b).

Four high quality (Aughterson et al. 2021; Billings et al., 2021b; Plessas et al. 2021; Spiers et al., 2021) and two lower quality studies (Dyson and Di Lamb, 2021; Newman et al., 2021) found that supportive relationships with peers and colleagues helped facilitate coping for HSCWs. Participants spoke of a strong sense of camaraderie and feeling like ‘they were

all being in it together' which helped them to cope (Billings et al., 2021b; Dyson and Di Lamb, 2021). Two high quality studies found that team unity in coping with difficulties helped to develop team resilience (Aughterson et al., 2021; Plessas et al. 2021). On the other hand, one high quality (Billings et al., 2021a) and one lower quality study (Newman et al., 2021) reported that participants felt pressured and burdened by having to support colleagues who struggled with emotional and psychological difficulties because they worried about giving them the wrong advice as they themselves were feeling depleted.

Four studies of varying quality found that having supportive relationships with friends and family helped HSCWs to cope (Aughterson et al., 2021; Billings et al., 2021b; Daniels et al., 2021; Newman et al., 2021). One high quality (Cipolotti et al., 2021) and two lower quality studies (Dyson and Di Lamb, 2021; Newman et al., 2021) discussed how having to be socially distanced from established support networks made it more difficult for them to cope. Aughterson and colleagues (2021), a high quality study, found that receiving support from local communities and the wider public also facilitated coping as it made HSCWs feel valued.

Individual Differences and Personal Context

In total, eight studies of varying quality elaborated on how individual differences influenced coping in HSCWs. Two high quality studies found that both having experienced previous mental health difficulties and being female hindered coping (Cipolotti et al., 2021; Pappa et al., 2021). One high quality study found that perceived stigmatisation from others for being a HSCW also hindered coping (Greene et al., 2021). Other factors that hindered coping included substance use and avoidance coping; which involves coping with stressors by avoiding thinking about or facing them (McFadden et al., 2021). Five studies discussed how different types of attitudes influenced HSCWs ability to cope. Two high quality studies found that accepting uncertainty and the realities of living with Covid-19 helped facilitate

coping (Aughterson et al., 2021; McFadden et al., 2021). Billings and colleagues (2021b), a high quality study, found that adopting an attitude of 'just getting on with it' helped HSCWs to cope. Two studies discussed how maintaining a sense of humour facilitated coping as it helped to enhance frontline healthcare workers moods (McFadden et al., 2021; Walker and McCabe et al., 2021). Walker and McCabe (2021), a lower quality study, prepared a case series describing a range of psychological defence mechanisms encountered in frontline healthcare workers. They found humour, denial, altruism and sublimation were defence mechanisms that helped facilitate coping. Aughterson and colleagues (2021), a high quality study, found that working in the frontline presented participants with opportunities for personal growth which helped HSCWs to cope. Personal growth involved increased reflection, improved personal relationships and decreased social obligations. McFadden and colleagues (2021), a high quality study, found that help-seeking also improved HSCWs' ability to cope.

In total, seven studies elaborated on the link between personal context and HSCWs ability to cope. Three high quality studies found that personal situations such as participants having to manage caring responsibilities impacted their ability to cope (Billings et al., 2021b; Cubitt et al., 2021; McFadden et al., 2021). Two high quality studies discussed how segmenting family and work responsibilities facilitated coping (McFadden et al., 2021), but that having to manage competing demands and commitments made it more difficult to cope (Billings et al. 2021b). Four studies found that engaging in meaningful activities outside of work helped HSCWs to cope (Aughterson et al., 2021; Billings et al., 2021b; McFadden et al., 2021; Newman et al., 2021). This included activities such as exercise, creative pursuits and self-care. Newman and colleagues (2021), a lower quality study, found that maintaining social contact with family, friends and colleagues helped facilitate coping. Two high quality (Aughterson et al., 2021; Cubitt et al., 2021) and one lower quality study (Newman et al.,

2021) found that limiting news intake helped HSCWs to cope because they found the reporting of daily Covid-19 death tolls unhelpful and detrimental to their mental health. However, HSCWs found that media coverage of their work which raised awareness of important issues related to Covid-19 in accurate ways was helpful (Billings et al., 2021b). In the high quality quantitative study by Greene and colleagues (2021), which looked at predictors of mental health conditions in frontline HSCWs, results showed that higher household income was a protective factor and was associated with lower odds of developing a mental health condition.

Feeling Valued

In total, five high quality studies found feeling valued impacted coping in HSCWs. Four studies, two with a qualitative design and two with a mixed-methods design, reported that feeling undervalued hindered HSCWs' ability to cope (Billings et al., 2021b; Cubitt et al, 2021; Daniels et al., 2021; Gemine et al., 2021; Plessas et al., 2021). In all these studies participants reported that they felt particularly undervalued by their organisations. In one study participants stated that they felt undervalued due to frustration stemming from fragmented guidance and communication from their organisation (Plessas et al., 2021). Daniels and colleagues (2021) aimed to explore the psychosocial experiences of frontline healthcare workers to develop empirically grounded recommendations for how best to support them. Data was collected through one-to-one interviews. Participants spoke about how small gestures of kindness and positive changes to their work environments made them feel valued by others which had a positive impact on their ability to cope. Plessas and colleagues (2021) found that urgent dental care workers appreciated positive feedback from patients during the pandemic. Participants spoke about how receiving positive feedback helped motivate and empower them to continue doing their work. Billings and colleagues (2021b) found that being offered practical support made HSCWs feel valued, but then having

this support and additional resources later taken away made them feel de-valued and demoralised. This was the only study that included social care workers as well as healthcare workers.

Purpose and Meaning in Work

In total, four high quality studies found that experiencing greater purpose and meaning in their work during the Covid-19 pandemic helped facilitate HSCWs' ability to cope. All four studies had a qualitative design. Three of the studies used a reflexive thematic analysis approach (Aughterson et al., 2021; Billings et al., 2021a; Billings et al., 2021b) and one used a phenomenological approach (Plessas et al., 2021). While two of the studies focused on the experiences of all HSCWs (Aughterson et al., 2021; Billings et al., 2021), one focused on the experiences of only urgent dental care workers (Plessas et al., 2021) and another focused on the experiences of only mental health professionals (Billings et al., 2021a). In all studies, participants spoke about how they experienced an increased sense of meaning and purpose in their work during the pandemic. Participants in the study by Plessas and colleagues (2021) said that being able to help during such a crisis contributed to both personal and professional fulfilment. Being able to help individual patients and the wider NHS provided professional satisfaction. They also expressed a sense of pride related to the level of teamwork achieved within their service and all the patients they helped. In the study by Billings and colleagues (2021a), mental health professionals spoke about how being able to 'step up' and help their frontline colleagues gave them a strong sense of purpose. They valued being able to meaningfully contribute to the wellbeing of their colleagues and this helped maintain motivation.

Table 3

Illustrative quotes related to each theme identified

Theme	Illustrative Quote

Work-related stressors	‘We were hearing about colleagues who were not sleeping because of whether they made the right decision for a patient you know, they were overwhelmed with the decision-making, the number and complexity of the decisions’ **(Plessas et al., 2021)** “My routine was really like... wake up, eat something, go into work, which as shifts as nurses we had to stay in the hospital for 12 and a half hours...go home and eat something, drink something, go to sleep... then wake up and then go to work again... we have been extremely busy compared to the normality.” **(Aughterson et al., 2021)**
Safety concerns	‘To start with the anxiety levels were massive, particularly, you know, does my mask fit me properly? Is it actually going to protect me?’ **(Plessas et al., 2021)** It would be super lovely to have a giant hug from my dad, but I know that’s not possible... in the line of work that I do, the risk to him would just be immense because I have been on the COVID wards. **(Aughterson et al., 2021)**
Communication and leadership	“The trust was very good in that they had their message that they were filtering down but they didn’t filter it down consistently and that was a big level of frustration so it was one day oh, you need to be doing it this way, the next day it was some other way, and everyone interpreted what they meant differently.” **(Billings et al., 2021b)** “So we were getting 20 emails a day, and every single one would have a red flag saying ‘vital, important, must read’, and you’d worry you’d missed something [...] there’s so much information, it was constant, and you couldn't switch off, because it would impact your job.” **(Spiers et al. 2021)**
Support structures	“Most of the time on my shift I can’t just drop out for things, if you manage to time your break for that time you can do it, if you don’t then you can’t, or you will just end up being tied up in a complex case that you can’t walk away from. In that sense they were quite inaccessible to me.” **(Daniels et al., 2021)** Seeing my colleagues band together to cover shifts, working above and beyond their calling, leaving their families and young children at home even longer than before, bringing back the risk of contamination and death and doing it all day, everyday with that same reassuring, calming smile they reserve for their patients was awe-inspiring” **(Newman et al., 2021)**

Individual differences and personal context	"Because of my job, I think I'm aware that we're not really in control of lots of things in our life... I see that all the time with patients and people I care for... we don't have control over everything and we have to have a level of acceptance for that." **(Aughterson et al., 2021)**
	"I have lost much of my childcare, because usual carers are shielding [. . .] My partner is also a keyworker (full time police, shift work) and although one child has been attending school my full working hours are not covered because before and after school care has closed. Extra days at nursery will cause financial burden." **(Newman et al., 2021)**
Feeling valued	"Supportive attitude from the team leader can make us feel a lot more reassured, valued and worthy. It may improve our productivity and immunity by helping reduce the stress level. Very important for immediate managers (as much as the organisational leaders) are trained and reminded to do that" **(Newman et al., 2021)**
	"We appreciate the basic things done well. . .making sure that we get our breaks, that we have access to hot food in our department. Simple things like that are actually really important. . .I don't think that putting on meditation or resilience training are necessarily the best way to help and support staff. I think that making them feel like their basic needs are helped and they are valued, are probably the most important things." **(Billings et al., 2021b)**
Purpose and meaning in work	"The benefit obviously was my ability to contribute to the wider NHS and be able to help patients and take them out of pain and the professional satisfaction of doing the right thing" **(Plessas et al., 2021)**
	"It has given us a sense of purpose, of something that we could do positively with the skills that we have during a time where everything looks really dark. I think it has been something to focus on during a real period of uncertainty which has been really great, it has felt good and important and purposeful to do." **(Billings et al., 2021a)**

Discussion

This review aimed to synthesise findings on the factors associated with coping among HSCWs working during the Covid-19 pandemic in the UK. Fifteen studies were found which met the inclusion criteria; nine were qualitative, four were quantitative and two used mixed-methods. The numerous factors that influenced coping discussed in the included studies fell into the following seven broad themes: work-related stressors, safety concerns, communication and leadership, support structures, individual differences and personal context, feeling valued and purpose and meaning in work. The studies included were heterogenous in design, sample size, population and location.

Previous systematic reviews in this area were also heterogenous; focusing on the overall mental health impact on healthcare workers during Covid-19 (Luo et al., 2020; Pappa et al., 2020; Chutiyami et al., 2022; Sun et al., 2021), extent of burnout and associated risk factors in nurses during Covid-19 (Galanis et al., 2021), factors associated with psychological distress in healthcare workers during an outbreak (Sirois and Owens, 2021), and experiences of healthcare workers and their views on support during Covid -19 and other pandemics (Billings et al., 2021c). These systematic reviews focused on the experiences of healthcare workers from all around the world and did not limit their focus to one specific context, as in this review. Many included studies conducted during previous pandemics too. Only one of them included social care workers. The current review focuses specifically on understanding the factors associated with coping, which none of the previous reviews did, of both HSCWs working exclusively in the frontline within the UK during the Covid-19 pandemic only.

The results of the current review demonstrate that the experiences of HSCWs during the Covid-19 pandemic are not without precedent as the themes identified were similar to findings from previous pandemics (Maunders et al., 2008; Billings et al., 2021c). Participants from studies in the current review described experiencing various work-related stressors while working during the Covid-19 pandemic which impacted their ability to cope. The

finding that job stress influenced the level of distress experienced by frontline HSCWs is echoed in the literature from the SARS pandemic (Maunders et al., 2004; Wong et al., 2005). A key work-related stressor during the Covid-19 pandemic which hindered coping was increased workloads. This increase was fuelled by lower staffing levels, resulting from staff illness and shielding, and meant that adequate breaks could not be taken during shifts. Being redeployed to work in unfamiliar environments also hindered coping. HSCWs in this review stated that experiencing a lack of control over their work environment, which included not having a choice in their redeployment, made it difficult for them to cope. This is in line with previous findings that lack of control over their environment was associated with burnout among healthcare workers in the UK (Imo, 2017). The current review found that having flexible working patterns that HSCWs had more control over was preferred.

Being forced to make more complex decisions due to the lack of resources available to meet patient demands, uncertainty about how to treat patients with Covid-19 and having difficult conversations with patients and families made it more difficult for HSCWs to cope. The ethical and moral dilemmas faced by HSCWs increases their risk of developing moral injury; which is defined as the psychological distress caused by taking actions or inactions that violate an individual's values. Moral injury has been highlighted as a significant concern for HSCWs during Covid-19 in the literature (Greenberg and Tracy, 2020; D'Allessandro et al., 2021). The work-related factors that facilitated coping for HSCWs was receiving training to enhance their skills, being appropriately paid overtime and flexibility in their working arrangements as this improved their ability to manage family responsibilities.

Safety concerns had a significant impact on the coping experiences of HSCWs. The review found that worrying about becoming infected with Covid-19 and contaminating others including family, patients and colleagues while working in the frontline made it difficult to cope. Inadequate access to PPE, lack of staff testing, inability to socially distance at work due

to restricted space and observing the public not taking Covid-19 seriously were also reported to have a negative impact on coping. Previous research has highlighted how risk of infection and concerns about adequate PPE were associated with greater distress in healthcare workers during earlier pandemics (Pappa et al., 2020). One factor that was unique to the Covid-19 literature was how increased vulnerability with being BAME had a negative impact on coping for HSCWs from BAME backgrounds. The factors that facilitated coping when it came to safety concerns were receiving regular training on PPE, having appropriate safety measures put in place at work and having them adequately adhered to by all staff.

The communication and leadership styles adopted by organisations and their management had a significant impact on the coping experiences of HSCWs. Receiving poor and inconsistent communication that was restricted to only top-down channels made it more difficult to cope. The current review found that restricting bottom-up communication was obstructive because it stopped HSCWs from being able to provide feedback to management or share knowledge about what could help them. Receiving appropriate information while at work and frequent communication from management that was two-way was found to facilitate coping. Previous research conducted during the SARS (Chung et al., 2005) and Ebola (Broom et al., 2017) outbreaks found that inconsistency in information received by healthcare workers resulted in increased frustration and a lack of trust in the information being received from their organisations. An earlier review found that clear, consistent and compassionate communication was appreciated and highlighted as a potential protective factor while working the frontline (Billings et al., 2021c). The current review found that the lack of clear guidance, particularly about PPE, which was constantly being changed, hindered coping during the Covid-19 pandemic because HSCWs were left feeling confused about what procedures to follow and had to adapt quickly despite this. This was echoed in emerging research during the Covid-19 pandemic which also found lack of clear guidance about PPE

resulted in increased anxiety amongst frontline workers (Vindrolas-Padros et al., 2020; Nyashanu et al., 2020). Changes in the way HSCWs were able to communicate with patients also hindered their coping because it became more difficult to communicate effectively while wearing full PPE or through virtual consultations.

Having support structures in place at work and home impacted on the coping experiences of HSCWs. The current review found that having supportive relationships with managers, colleagues, family and friends helped facilitate coping for HSCWs. While having supportive relationships with management facilitated coping, not being able to tell managers when they were not able to cope made it more difficult for HSCWs. Being offered practical support, such as hot meals and rest areas, and emotional support, such as psychological and counselling services, helped facilitate coping. However, there were disparities in availability of support across services. The current review found that even when support was offered, there were significant barriers to accessing it which included a lack of awareness of the support being offered and support being offered at inconvenient times. Having support offered during the workday was not helpful because HSCWs were too busy and did not have time to attend. Therefore, making the support offered easily accessible is essential. Additionally, having support offered and then taken away hindered coping because it made HSCWs feel devalued. Previous research has highlighted how HSCWs appreciated when their organisations prioritised their safety and offered them support (Billings et al., 2021c). Supportive relationships with colleagues and a strong sense of camaraderie with them helped HSCWs to cope. This finding has been echoed in other research conducted during Covid-19 and previous pandemics which found that team unity facilitated coping in the face of stressful circumstances experienced while working in the frontline (Kim, 2018; Greenberg et al., 2020). However, the current review found that supporting colleagues experiencing emotional difficulties could also be perceived as burdensome particularly when HSCWs worried about

being able to give appropriate advice. Research has shown that empathising with others' distress is a risk factor for vicarious traumatisation (McCann and Pearlman, 1990). The current review found that mental health workers in particular, who were supporting staff, experienced vicarious trauma which made it difficult for them to cope. Supportive relationships with friends and family were very important to HSCWs during the Covid-19 pandemic. Having to isolate from these established support networks made it more difficult for them to cope. In line with these findings, another systematic review highlighted that healthcare workers found social support to be vital in helping them to cope during the Covid-19 pandemic (Labrague, 2021). The current review found that receiving support from local communities and the wider public also facilitated coping for HSCWs during this time because it made them feel valued.

Individual differences and personal context were found to have a significant impact on the coping experiences of HSCWs. With regards to individual differences, being female, having previous mental health difficulties, using avoidance coping, substance use and perceived stigmatisation from others were found to negatively impact coping. However, certain attitudes held by HSCWs were found to facilitate coping. These included an attitude of 'just getting on with it' and accepting uncertainty, which is related to the psychological theory of radical acceptance (Robbins et al., 2004) and has been identified as a helpful coping strategy for healthcare workers in previous outbreaks (Wong et al., 2005). Adopting the defence mechanisms of humour, denial, altruism and sublimation were also reported as being helpful. Defence mechanisms have been defined as involuntary coping mechanisms that reduce the disorganising effects of stress (Vailant, 2011). Altruism, sublimation and humour are mature defences that are related to positive coping as they have been found to have a negative association with psychopathology and positive association with adaptability (Vaillant, 1971). Participants reflected on how facing opportunities for personal growth while

working during the Covid-19 pandemic also helped them to cope. They reported experiencing personal growth in both their personal and professional lives, which was achieved through improved relationships, greater learning and appreciation for 'the small things in life'. These findings echo previous studies conducted during Covid-19 and other pandemics which found that HSCWs experienced increased personal growth, gratitude and self-reflection after working in the frontline (Kim, 2018; Sun et al., 2020). Experiencing personal growth in the aftermath of highly challenging and stressful circumstances is known as post-traumatic growth (Tedeschi and Calhoun, 2013). With regards to personal context, the current review found that personal situations such as having to manage caring responsibilities impacted on HSCWs' ability to cope. Having to manage competing demands and commitments in both their professional and personal lives made it more difficult to cope. However, having higher household income was found to be a protective factor, reducing the odds of developing a mental health condition. HSCWs reported that engaging in meaningful activities outside of work, maintaining social contact with loved ones, segmenting family and work responsibilities with clear boundaries and limiting news intake helped them to cope. Engaging in meaningful activities and connecting with others are forms of proactive coping which were also adopted by healthcare workers during the SARS outbreak (Wong et al., 2005). The media had both negative and positive impacts on HSCWs. While daily reporting of Covid-19 deaths was viewed as unhelpful, media coverage which raised awareness in an accurate way was deemed helpful. A recent study found that the prevalent discourse of blame during the constant reporting of Covid-19 had a negative impact on the wellbeing of HSCWs (Bu et al., 2020).

Feeling valued impacted on the coping experiences of HSCWs. The current review found that feeling undervalued had a negative impact on coping for participants. Frustration caused by fragmented guidance and communication from organisations made participants

feel unprotected which resulted in feeling undervalued. While being offered practical support made HSCWs feel valued, having this later taken away made them feel de-valued. Previous research on the experiences of stress in nurses found that feeling undervalued caused more stress in nurses as feeling appreciated was a protective factor which reduced the negative effects of the demands of nursing (Johnston et al., 2016). The current review found that receiving positive feedback from patients helped HSCWs to cope because it motivated them to continue doing their work despite the challenges they faced. Small gestures of kindness and positive changes to work environments also facilitated coping by making HSCWs feel valued.

Experiencing greater purpose and meaning in their work positively impacted HSCWs' ability to cope during the Covid-19 pandemic. Being able to help others during such a crisis provided personal and professional fulfilment. In addition to feeling a sense of professional satisfaction from helping individual patients and the wider NHS, they experienced a sense of pride in being able to help their frontline colleagues. An increased level of teamwork and sense of team unity at work helped facilitate coping. Helping each other provided a strong sense of purpose. HSCWs valued being able to meaningfully contribute to the wellbeing of their colleagues and found this motivating. Although having to help colleagues was seen as burdensome at times when it involved taking on additional shifts. Research conducted pre-pandemic which aimed to understand nurses' experiences of meaning and joy in their nursing practice identified building meaningful connections with others and having a fulfilling purpose by helping others through their work as key themes (Galuska et al., 2018). Another study which focused on doctors found the same (Horowitz et al., 2003).

Strengths and Limitations

The results of the current review should be considered within the context of its strengths and limitations. A strength of the review is that it included studies with any type of

research design and did not limit this. The studies included had qualitative, quantitative, mixed-methods and case series designs, which allowed for a more robust understanding of coping experiences. Including qualitative and mixed-methods studies provided the opportunity to hear directly from HSCWs, whose voices are not usually sufficiently represented. Another strength of the review is that the medRXiv database was used to search for unpublished literature and pre-prints, which provided a more comprehensive and up to date view of the literature available in the fast-emerging field of research related to Covid-19. This was done to ensure the newest research was found and included. The searches were conducted across two databases and forward and backward searches were performed on the reference lists of key papers to ensure rigour. An additional strength of the current review was that the eligibility of the studies was independently reviewed by a second reviewer both at initial screening and full text review. This helped to increase the reliability of the review process. Another strength is that the quality of all included studies was assessed using a quality appraisal tool which enabled the evaluation of the methodologies used in the studies to determine whether results provided were meaningful. The heterogenous data was analysed using the recommended approach of narrative synthesis (Popay, 2006), which is another strength of the review because it allows for replication.

A limitation of the current review is that although the studies were reviewed independently by a second reviewer when screening for eligibility, the quality appraisals of selected studies was only conducted by the primary researcher. An additional limitation of the search strategy was also the limited number of databases searched, therefore relevant studies could have been missed. A more comprehensive search strategy may have found additional papers. As the review only focuses exclusively on the UK context, another limitation is that the findings cannot be generalised to HSCWs outside the UK. A limitation of the included studies is that only four of them included social care workers in addition to

healthcare workers. The research generally focuses more on healthcare workers experiences. Although the heterogeneity of the studies and their data was a strength of the review, it was difficult to synthesise the outcomes because the included studies focused on a variety of different concepts and used a range of measures. While some studies did focus specifically on coping experiences, others aimed to understand distress and the psychological impact of working during the Covid-19 pandemic more generally. Although on one hand it was beneficial to have included unpublished literature and pre-prints, a limitation of doing this is that this research has not yet been peer-reviewed.

Implications

The current review has highlighted important implications for future practice and research. Regarding future research, as only four of the studies from the current review included social care workers and there is limited research focusing specifically on this occupational group, further research focusing exclusively on the coping experiences of social care workers is needed. Future research would also benefit from focusing on trying to understand the unique experiences of each unique occupational group, as the challenges experienced by a midwife may differ from those experienced by a physiotherapist. Additional research into the unique experiences of HSCWs in countries other than England within the UK would also be beneficial as most included studies were conducted either in England or England and the rest of the UK. Only two of the included studies were conducted in UK countries other than England.

The following suggestions for future practice can be considered and implemented during both pandemic and non-pandemic periods. To help facilitate coping for HSCWs, organisations can aim to minimise work-related stressors by making workloads manageable, ensuring there are enough rest areas in the work environment and that staff are having sufficient breaks. Encouraging team unity and greater team working to solve problems will

help alleviate distress caused by the pressure of having to make difficult decisions. Health and social care workers would appreciate being consulted and included in decision-making affecting their work environment. Organisations should prioritise having adequate PPE provisions to help HSCWs feel safe by appeasing worries about their safety and ensuring more effective working in a less stressful environment. Communication needs to be clear, regular and two-way between management and staff. HSCWs would benefit from being given consistent guidance with few modifications, particularly when related to PPE. Practical and psychological support should be put in place and made easily accessible to help facilitate coping. Managers should be encouraged to check-in with staff to give them a space to communicate their needs. HSCWs' personal context should be acknowledged and managers should strive to help support them in maintaining a healthy work-life balance. By offering support and creating a safe work environment that allows staff to feel able to communicate when they are not coping, HSCWs will feel valued by their organisation.

Conclusions

Understanding the psychological impact on HSCWs of working in the frontline during the Covid-19 pandemic is a rapidly expanding area of research. The included studies focused on understanding the distress caused by working in the frontline and how HSCWs coped with stressors during this period. The included studies in the current review used a wide, heterogenous range of research methodologies, which gave a more robust view of how they coped. Seven key themes were identified which represented factors that impacted the coping experiences of HSCWs during the Covid-19 pandemic. These were work-related stressors, safety concerns, communication and leadership, support structures, individual differences and personal context, feeling valued and purpose and meaning in work. These findings have clinical implications for how HSCWs can be better supported to help alleviate the distress caused by their work and improve their wellbeing. Further research is needed to

better understand social care workers experiences in particular, as there is a paucity of research regarding this occupational group.

3. Health and social care professionals' experiences of coping while working in the frontline during the COVID-19 pandemic: one year on

Abstract

The unprecedented pressure of working in the frontline during the Coronavirus disease 2019 (Covid-19) pandemic impacted on the mental health and wellbeing of health and social care professionals. The aim of the current study was to develop an explanatory model of the processes that helped and hindered the coping experiences of health and social care professionals working in the Covid-19 frontline and how they inter-relate.

Twenty health and social care professionals based in the United Kingdom (UK) took part in the study. They completed semi-structured interviews from one year after the peak of the first wave in the UK. The interviews were then transcribed and analysed using grounded theory methodology.

The analysis identified eleven theoretical codes and fifty-eight focused codes. The eleven theoretical codes identified were: *personal context, organisational resources, organisational response, management, colleagues, decisions-making and responsibilities, internal impacts, external impactors, safety, barriers to accessing support* and *temporal factors*. The findings suggest that factors related to the individual themselves, their personal context, the organisation they work in, their managers, the support structures around them and their sense of safety impact on health and social care workers' ability to cope. Some factors changed over time throughout the first year of the pandemic, such as workload and staff illness, which further impacted health and social care workers' ability to cope. There were many barriers to accessing support that also impacted coping, including availability,

awareness and time. The relationship between the factors that impacted coping were represented in an explanatory model.

The findings extended previous studies on the mental health impact on frontline health and social care professionals working during Covid-19, providing novel insight by developing an explanatory model illustrating the underlying factors that impacted their coping experiences. The findings from this study may assist in the development of improved and more effective support for health and social care workers.

Introduction

The Covid-19 pandemic placed extreme demands on HSCWs around the world as they faced a novel rapidly spreading virus that resulted in high numbers of patients with high mortality rates. The limited availability of effective treatment options made it difficult for healthcare systems to cope (Rathnayake et al., 2020). The rising cases lead to longer hours and working in more intense environments, with the added challenges of having to follow strict infection control measures and not always having adequate personal protective equipment (PPE) (Billings et al., 2021c). Many were redeployed and forced to work in unfamiliar settings. They also continued to work despite the risks to their own physical safety and to that of their loved ones.

As the pandemic progressed, research on the mental health and wellbeing of staff started emerging from the UK and the rest of the world, which demonstrated the negative effects of working in the frontline as a HSCW during the COVID-19 pandemic. Lai and colleagues (2020) conducted a study in China and found that a large proportion of staff assessed reported symptoms of distress (71.5%), depression (50.4%), anxiety (44.6%) and insomnia (34.0%). While Di Rossi and colleagues (2020), conducted a study in Italy which showed similar results of staff assessed reporting symptoms of post-traumatic stress

(49.38%), depression (24.7%), distress (21.9%), anxiety (19.8%) and insomnia (8.27%). In the UK, Greene and colleagues (2021) found that around 58% of HSCWs across all occupational groups assessed met the threshold for clinically significant anxiety, depression and/or post-traumatic stress disorder (PTSD), shortly after the first wave. Frontline HSCWs all around the world were experiencing elevated rates of anxiety, depression and PTSD in response to COVID-19. These findings are also in line with past studies that examined the impact of other viral epidemic outbreaks on the mental health of healthcare professionals (Seranno-Ripoll et al., 2020).

Potential risk factors for developing mental health disorders while working in the frontlines during COVID-19 identified in preliminary studies included working directly with patients with confirmed or suspected COVID-19 and concerns about personal safety due to inadequate access to appropriate personal protective equipment (Braquehais et al., 2020; Kang et al., 2020). Working as a nurse and being a woman were associated with greater mental distress in some studies (Luceño-Moreno et al., 2020; Lai et al., 2020). However, Greene and colleagues (2021) did not identify any differences between gender and professions. Staff also experienced distress due to moral injury resulting from having to work in under-resourced services and providing suboptimal treatment (Williamson and Greenberg, 2020).

HSCWs were already under considerable strain prior to the COVID-19 pandemic, with a growing incidence of stress, burnout, depression, suicide and substance misuse found across health occupational groups worldwide (Carrieri et al. 2018). Burnout is defined as a state of mental, physical and emotional exhaustion resulting from chronic workplace stress that has not been successfully managed (World Health Organisation, 2019). In the UK, reviews of the mental health of healthcare workers prior to the Covid-19 pandemic showed that staff were already at high-risk of work-related stress and burnout due to decreasing levels

of staffing and other diminishing resources within the healthcare system (Kinman et al., 2020). Levels of burnout and mental health problems amongst nurses and midwives in the UK have been found to be higher than in other countries, and compared to the general working population within the UK (Kinman et al., 2020). While there has been a growing amount of research focusing on the wellbeing of healthcare workers in the UK, research on the wellbeing of social care workers is limited. Pre-pandemic it was identified that social care services had a shortage of 110,000 staff (Thomas and Quilter-Pinner, 2020). Furthermore, studies have shown that social care workers experience significant stressors due to workforce shortages, insecure contracts, low wages and poor work-life balance (Thomas and Quilter-Pinner, 2020). Working during the COVID-19 pandemic would have added pressures increasing the impact of these pre-existing stressors on this occupational group.

While HSCWs may experience similar work-related stressors, how they deal with them can differ. According to Lazarus and Folkman's (1984) transactional model of stress and coping, stress is a product of the interaction between an individual and their environment. This relationship is mediated by cognitive appraisals and coping. The cognitive appraisal process involves two parts; firstly, the appraisal of how threatening a situation is, followed by the appraisal of one's own ability to cope with it, which is based on the perceived internal and external resources an individual has available to them. Resources can be physiological, psychological, social or material. An individual will feel stressed if they perceive the demands of a situation as exceeding their resources for coping with it. On the other hand, an individual will not feel stressed if they perceive the demands of a situation as low and their ability to cope as high. These cognitive appraisals are followed by coping, which Folkman and Lazarus (1980) defined as thoughts and behaviours individuals use to manage the internal and external demands created by a stressful situation. Individuals can cope and respond to stressors in diverse ways. Studies have found that individual differences also influence how

people appraise and cope with stressful situations (Matthews et al., 2009; Ouwehand et al. 2008). Therefore, there are many variables that can influence the coping experiences of HSCWs.

A systematic review of the determinants and prevalence of burnout in emergency nurses found that a combination of individual and work-related factors predicted burnout amongst this population (Adriaenssens et al., 2015). The individual factors included demographic variables and personality characteristics, while the work-related factors included exposure to traumatic events, job characteristics and organisational variables. Perceived work-related stress was also found to be the greatest contributor to job satisfaction in nurses and social care workers (Gellis, 2002). Another study found that a lack of workplace support and high workload predicted poorer mental health amongst nurses (Chang et al., 2006). Therefore, it would be helpful for organisations to know what type of support would be most helpful for their staff.

The Covid-19 pandemic has highlighted the need to better understand how HSCWs cope with work-related stressors. The paucity of research on their mental health needs has resulted in a lack of evidence-based guidance about what support would be most effective in helping them. The recognition of the critical need to support the mental health of frontline HSCWs during the COVID-19 pandemic has resulted in the mobilisation of resources to offer psychosocial support in different ways. However, there is a lack of evidence-based guidance regarding what types of support or interventions are most helpful for this occupational group (Billings et al., 2020). Furthermore, there is a lack of evidence that directly incorporates the views and preferences of HSCWs themselves. The majority of early research on Covid-19 has been mostly quantitative, involving surveys which measured rates of distress (Billings et al., 2021b). Though important, this type of research does not help to understand the complexities of HSCWs experiences and does not take their views into account. Previous

published qualitative research focusing on HSCWs working during the start of Covid-19 pandemic involved small samples, were of poor to moderate quality and were limited to just doctors and nurses (Billings et al., 2020). Emerging research is showing that HSCWs may be reluctant or ambivalent about engaging with support offered due to many factors including stigma of accessing psychological services, feeling like they did not need certain types of support and preferring to seek support from colleagues, friends or family (Chen et al., 2020; Billings et al., 2021b). A better understanding of how this group of workers cope and the barriers and facilitators to their coping is crucial. Another limitation of most research completed to date was that it explored HSCWs experiences early on in the pandemic, providing a snapshot in time. However, coping is a dynamic and adaptive process (Frydenberg, 2014). Therefore, there is a need to understand how HSCWs have coped with this crisis over time.

The current study addressed these gaps by exploring the views of HSCWs from a range of professions to understand what helped and hindered their ability to cope while working in the frontlines during the Covid-19 pandemic. A better understanding of the underlying factors that impact the coping experiences of HSCWs working in a pandemic can aid in the development of more appropriate evidence-based support for this occupational group. Participants were interviewed from one year after the peak of the first wave. A benefit of speaking to HSCWs some time into the pandemic was that participants would have had the time to reflect on and opportunity to fully experience what helped and hindered their coping over the span of a year. It was the aim of this study to explore the experiences of HSCWs over time, by inviting them to reflect on their experiences and attempts to cope in the twelve to eighteen months since the pandemic broke out.

The aim of the study was to develop an explanatory model of the processes that helped and hindered the coping of HSCWs working in the frontlines during the COVID-19

pandemic. The aim of this model was to illustrate the factors that impact coping and how they inter-relate, and in turn relate to help seeking. The study aimed to answer the following research question:

What factors helped and hindered the coping experiences of health and social care professionals working in the frontlines during COVID-19?

Method

Ethical Approval

The study was granted dual ethical approval from the University College London Research Ethics Committee (Ref. 18341/001, Appendix C) and the Royal Holloway University of London Research Ethics Committee (REC Project ID: 2636, Appendix D).

Ethical considerations

During the interviews, participants were asked to discuss and reflect on potentially distressing past experiences, which could have resulted in stress and discomfort. To mitigate this, participants were provided with sufficient information about the study, all details about what participation would involve and were signposted to appropriate sources of mental health support in the information sheet before taking part. Additional signposting would be offered during the interview if needed. All participants provided informed consent and were reminded of their right to withdraw from the study. No risk issues were raised during the data collection process.

Design

A cross-sectional qualitative design was used to facilitate in-depth analysis of participating HSCWs' experiences of coping while working in the frontlines throughout the Covid-19 pandemic. Qualitative methodology is preferred when there is a lack of research in the area being investigated, as this type of methodology can provide rich descriptions of

complex phenomena (Sofaer, 1999). Qualitative methodology also allows for the exploration of the underlying processes that influence certain behaviours (Burck, 2005), making this type of methodology ideal for understanding how working in the frontlines during the Covid-19 pandemic impacted the coping behaviours of HSCWs.

The qualitative method of analysis used was grounded theory, which employs inductive reasoning to generate a theory that is grounded in the data (Noble and Mitchell, 2016). Grounded theory was considered an appropriate fit for the research aim because through its focus on reciprocal effects between social processes and individuals it enables the in-depth investigation of the impact of social situations on patterns of behaviour (Tweed and Charmaz, 2012), facilitating the development of a theory to explain behaviour (Charmaz, 1996). In the context of HSCWs working during the Covid-19 pandemic, this is particularly applicable because working in the frontlines during a pandemic, treating others and receiving different types of support after being exposed to distressing events at work are social situations and processes (e.g. help-seeking, experience with help offered, continuously facing risk of infection from patients). The current study focused on understanding how these social situations impacted on the coping behaviours of HSCWs. The resulting model was grounded in the data allowing for suggestions of causal connections and a greater understanding of how different factors inter-relate to either help or hinder coping in this population. The model could be used to inform and support the development of support packages and policies for HSCWs facing future health crises.

As the study aimed to explore what helps and hinders coping in HSCWs working during the Covid-19 pandemic, developing a theoretical model that is grounded in the data facilitates this by focusing on providing an explanation in addition to identifying themes. Grounded theory was preferred and considered a more appropriate methodology compared to thematic analysis, which identifies themes in unstructured data, because it has greater

explanatory power (Birks and Mills, 2015). Grounded theory was also preferred to interpretive phenomenological analysis because by staying close to the data it uses less interpretation (Sandelowski, 2010). Most published research on HSCWs working during the Covid-19 pandemic have used thematic analysis and focused on capturing their various experiences. By using grounded theory, the literature will be drawn together and extended through the development of an explanatory model.

Sampling

Frontline HSCWs were purposively recruited by sharing information about the study on social media platforms (Facebook and Twitter) and the COVID Trauma Response Working Group website. Participants were also recruited using snowball sampling which involved asking health and social care colleagues to share information about the study with potential participants within their personal and professional networks who might be interested in taking part.

Traditionally the concept of 'data saturation' is often used in grounded theory to determine sample size (Strauss, 1987). However, the use of saturation has been criticised in qualitative epistemology due to the variability in how it can be conceptualised and inconsistencies in how it is used (Saunders et al., 2017). The current study used the 'information power' approach to guide the decision about how many participants to interview (Malterud et al., 2015). Using the 'information power' approach, the sample size was determined by considering the study aims, sample specificity, use of established theory, quality of dialogue and analysis strategy (Malterud et al., 2015). This approach stipulates that the more the sample holds information that is actually relevant for the study, the less the number of participants needed. The information power approach was favoured and adopted in this study as the aim of the study was to specifically capture the underlying factors that helped and hindered coping rather than the participant's entire experience of working in the

frontline. All participating HSCWs would have had varying experiences due to differences in profession, personal life, health, age and work environment, which would have made data saturation difficult to attain. Therefore, by adopting the information power approach, recruitment continued until enough information on participant's experiences of coping was gathered. A sample size that offered a pragmatic balance between depth and breadth was sought (Braun and Clarke, 2021).

Participants

The participants were all HSCWs based in the United Kingdom who worked in patient-facing frontline health and social care roles during the Covid-19 pandemic and were recruited in accordance with the inclusion and exclusion criteria, below. In this study, a frontline HSCW was defined as any member of staff involved in direct clinical or non-clinical contact with patients (Nguyen et al., 2020). As grounded theory requires a heterogeneous sample in order to access a diversity of experiences and views (Charmaz, 2006), care was taken to recruit HSCWs from a variety of disciplines working in diverse settings and from across the UK. The eligibility of participants was assessed by the researcher immediately after receiving the first email from the individual interested in participating.

Inclusion criteria:

- Any HSCWs from a variety of disciplines who worked in the frontlines in the United Kingdom throughout the COVID-19 pandemic. This includes doctors, nurses, occupational therapists, physiotherapists, carers, porters, administrative staff and others.
- HSCWs with spoken English language proficiency to ensure they can fully comprehend and engage with the interview.

Exclusion criteria:

- HSCWs based in the United Kingdom who did not continue to work in the frontlines during the COVID-19 pandemic.
- HSCWs who were not working in the United Kingdom during the Covid-19 pandemic.
- HSCWs with insufficient spoken English language proficiency.
- Individuals who are not HSCWs.

Interview Schedule

A semi-structured interview schedule (Appendix E) was developed which aimed to cover all aspects of HSCWs experiences working throughout the first year of the Covid-19 pandemic, from their professional to their personal lives. Part of the interview schedule was designed to allow participants to reflect on their experiences and the challenges they faced in the different time periods within the first year of the pandemic; these included the first wave, first recovery period and second wave. The interview schedule also included questions related to experiences of support and coping within the first year. The questions were all designed with the aim of facilitating reflection. Participants were asked questions about what made it difficult and easier for them to cope, the impact on their wellbeing, the impact on their help-seeking and on the support they found most and least helpful. Further questions on how participants' experiences changed over time throughout the first year of the pandemic were asked.

The first draft of the interview schedule was initially developed through consultation with the project supervisor, who has research and clinical experience in PTSD within occupational groups. The draft was then shared with the clinical and academic trauma experts from the COVID Trauma Response Working Group for consultation and feedback to ensure face validity. After receiving this feedback, HSCWs were then consulted to further ensure the appropriateness of the questions. The interview schedule was shared with two frontline

HSCWs, one working within a healthcare setting and the other working within a social care setting, who both reviewed it and offered comments. These consultations provided information on the suitability and clarity of the questions and whether any additional questions needed to be added. The interview schedule continued to be reviewed after each interview to further assess relevance and whether new strands of enquiry needed to be followed-up on as they emerged, in line with the principles of grounded theory.

Participants also completed a sociodemographic form which was developed to collect additional contextual information about profession, gender, ethnicity and the setting and region they worked in (Appendix F).

The interviews were conducted remotely using Zoom, a cloud-based videoconferencing platform, which provides secure and reliable video call services that are easy to use.

Focused coding was conducted using NVivo Pro software V12 for Mac.

Procedure

After seeing a study advertisement (Appendix G) either on a social media platform, the COVID Trauma Response Working Group website or via email, individuals interested in participating emailed the researcher. The researcher replied to the emails screening for eligibility according to the inclusion and exclusion criteria. Those who were deemed eligible were then provided with additional information about the study. They were sent the information sheet (Appendix H) and consent form (Appendix I) to review and sign if they wanted to participate. Individuals still interested in participating after reviewing this information replied to the email and a convenient date and time for the interview was arranged. The consent form was either signed and sent by email or it was agreed that consent would be taken verbally before the start of the interview.

The majority of the interviews took place remotely over Zoom video call. Only two interviews did not; one which was conducted over the telephone and the other which was completed in person.

All interviews were audio recorded and the digital recording files were uploaded and securely stored on a password-protected computer. The files were saved using unique identifiers to ensure confidentiality of data. The interviews were transcribed verbatim and all identifying features of the individual and their place of work were removed. The interview recordings were deleted after transcribing was completed and checked.

In grounded theory, it is recommended that data collection and analysis take place simultaneously (Glaser and Strauss, 1967). This is known as constant comparative analysis. Through this process of constantly comparing new data with existing data, the theory that emerges is then used to inform ongoing data collection. The constant comparative approach was used in the current study and data analysis commenced as soon as the first interview was transcribed. Data collection and analysis occurred simultaneously throughout.

Analysis

Transcription

The interviews were transcribed verbatim in order to allow for the researcher to become emersed in the data and to allow for a deeper insight into the participants' unique experiences (Charmaz, 2006). The primary supervisor reviewed and commented on an uncoded transcript.

Coding

The analysis was conducted in accordance with grounded theory methodology recommendations outlined by Charmaz (2006). Coding is the process by which verbal data is analysed. It involves actively processing, naming and defining what is occurring within the

verbal data. The coding process within grounded theory has three stages: initial, focused and theoretical coding.

During the initial coding stage, the transcribed interviews were coded sentence-by sentence to facilitate detailed exploration of the data (Charmaz, 2006). The coding at this stage was conducted using gerunds because describing actions rather than only naming topics related to the fragments of data prevented conceptual leaps from being taken and ensured emerging theory remained grounded in the data (Glaser, 1978). The primary supervisor reviewed and verified the initial coding of four interviews. See Appendix J for an extract of a transcript with initial codes. As data collection and analysis were happening simultaneously, reflections after initial coding were written in memos (examples in Appendix K), which informed later interviews and analysis.

All transcripts were then imported into Nvivo Pro V12 for the focused coding stage. The most significant and frequent codes identified during initial coding were selected and used to analyse larger segments of data (Charmaz, 2006). They were selected based on whether they made the most analytic sense to categorise the data thoroughly and completely. Using focused codes helped in exploring the reoccurring codes prevalent in the data and facilitated the linking together of initial codes to form concepts. The provisional coding frame was further extended and edited with the coding of subsequent transcripts. The primary supervisor reviewed the focused codes and provided feedback about the language used to describe the codes and whether the codes were mutually exclusive or could be merged because they represented similar content. The codes were amended following this feedback.

During the theoretical coding stage, the focused codes were reviewed together with the analytical memos to understand the relationships between them and establish how they can be unified into a theory. The focused codes shaped the theoretical codes and the relationships identified between the codes resulted in an emergent theory. Writing memos

throughout the data analysis stage helped in clearly defining the meaning of the codes and in organising and interpreting the relationships between them (Sbaraini et al., 2011). The theoretical and focused codes were then reviewed by the primary supervisor before a final visual representation of the model was developed.

A working model was developed using the analytical memos and integrative diagrams illustrating how the codes were related (Urquhart, 2019). A visual representation of the complete model was then developed to show the relationships between the key theoretical and focused codes. The draft visual representation of the model was then presented to academic peers conducting research in the same area, as a form of a validity check. Modifications were made to the visual representation of the model based on feedback received from this peer-group and from the primary supervisor.

For details on the quality assurance process of the current study and how guidelines on maintaining quality standards for qualitative research (Elliot et al., 1999) were adhered to, see Appendix L.

Reflexivity

In qualitative research, the researcher's perspectives can inevitably influence the research process (Elliot et al., 1999). The constructivist approach taken in grounded theory in particular, views research as constructed rather than discovered (Charmaz, 2006). Due to this view, greater emphasis is placed on the researcher's reflexivity when considering their own actions and decisions taken throughout the research process (Charmaz, 2006). Reflexivity must be maintained to ensure that the researcher's perspectives, positions and privileges are accounted for when considering the findings (Henwood and Pidgeon, 1992).

I, the lead researcher for this study, am a 32-year-old Arab heterosexual female trainee clinical psychologist, with an interest in post-traumatic stress disorder and trauma in occupational groups. I continued to work in client-facing roles throughout the Covid-19

pandemic in different settings within the NHS in London while completing this study. My own personal experience of working in a frontline role during the Covid-19 pandemic helped me understand some of the difficulties the HSCWs were facing at the time, such as the concerns around PPE, safety and anxieties about getting Covid-19 at work and passing it on to others. Although I was not redeployed and did not work in a Covid-specific setting, hearing about some of my colleagues' experiences of being redeployed into Covid wards and about what that process was like increased my interest in the area. At one point, I worked as part of a multidisciplinary team with members who were redeployed and then returned. During this time, I would also visit and work with clients in care homes, engaging regularly with care home workers. I had a few friends who were junior doctors and would also hear about their experiences. While these experiences may have increased my understanding of the difficulties the HSCWs faced, it may also have impacted my objectivity. I developed a particular interest in trying to understand what helped or hindered coping in this population because I witnessed first-hand how individuals working in similar conditions coped differently from one another. I tried to maintain a curious stance throughout the research process to ensure I captured and included the multiplicity of views relating to the individual and the social processes being examined. I had some understanding of post-traumatic stress, coping behaviour and qualitative research methodologies prior to the study, which guided the development the research question and design.

Results

Twenty participants were recruited and took part in the study. The interviews took place between 5 May and 26 October 2021. They started from one year after the peak of the first wave of the pandemic in the UK. Interviews lasted between 37 minutes and 1 hour and

15 minutes, although most interviews took between 45 and 60 minutes. See Table 4 for participants' sociodemographic information.

The data analysis identified eleven theoretical codes and fifty-eight focused codes, each representing different concepts that emerged at the initial coding stage. These are presented in a table in Appendix M and discussed below. Quotes from the participants have been included for each of the focused codes to demonstrate how the codes are grounded in the data. A visual diagrammatic representation of the relationships between all the theoretical and focused codes is presented and discussed. Participants are referred to by their participant number outlined in Table 4 (P1-P20).

Theoretical model of the factors that helped and hindered coping experiences of health and social care professionals working in the frontlines during the Covid-19 pandemic

The current study aimed to develop a theoretical model of the underlying processes that help and hinder coping in HSCWs working in the frontlines during a pandemic. Figure 2 outlines how the eleven theoretical codes relate to each other in an explanatory model. The blue lines represent the relationship between the theoretical codes and their respective focused codes, while the blue arrows present the processes described by participants of how certain focused codes relate and interact with each other. The temporal factors are represented with the orange arrow at the bottom of the figure to highlight the passing of the time throughout the first year of the pandemic and the differences in participants' experiences between the various time periods. These temporal changes occurred in parallel to the factors identified in the rest of the model. Personal context is presented by an oval beneath the rest of the model as participants stated that this factor had a significant and overarching effect on their ability to cope. Therefore, it forms the foundation of the model.

Table 4

Participant Sociodemographic Information

Participant	Profession	Gender	Ethnicity	Settings worked in	Regions worked in
1	Doctor- consultant	Male	White British	Acute ward, General Hospital/Covid Wards	England- South East
2	Midwife	Female	White British	Hospital-based antenatal clinic	England- South East
3	Clinical psychologist	Female	White British	General hospital/Covid wards	England- London
4	Care assistant	Female	White British	Care home	England- North East
5	Nurse	Female	White British	A&E, outpatient department and general hospital/Covid wards	England- Midlands
6	Doctor- consultant	Female	Asian	Pediatric Intensive care unit	England- North East
7	Operating Department Practitioner	Female	White British	Main theater and Covid ITU	England- South East
8	Doctor-Junior	Female	White British	Secondary care: psychiatry ward, pediatric ward, Covid unit	England- South East
9	Clinical psychologist	Female	White British	Community setting	England- London
10	Nurse	Female	Asian British	Mental health community	England- South East
11	Operating Department Practitioner	Female	White British	Theatres	England- South East
12	Nurse	Female	White British	ICU split with respiratory ward	England- South West
13	Nurse	Female	White British	Mental health community	England- Midlands
14	Nurse	Female	Another ethnic group	ICU, Research nurse working on clinical trials	England- London
15	Operating Department Practitioner	Female	Asian British	Theatres	England- London
16	Nurse	Male	White British	Acute ward, community setting	England- South West

17	Physiotherapist	Female	White British	ICU, Covid/respiratory wards	England- North West
18	Nurse	Female	White British	A&E	England- South Central
19	Nurse	Female	White British	A&E	England- North East
20	Nurse	Female	White British	Community setting	England- South East

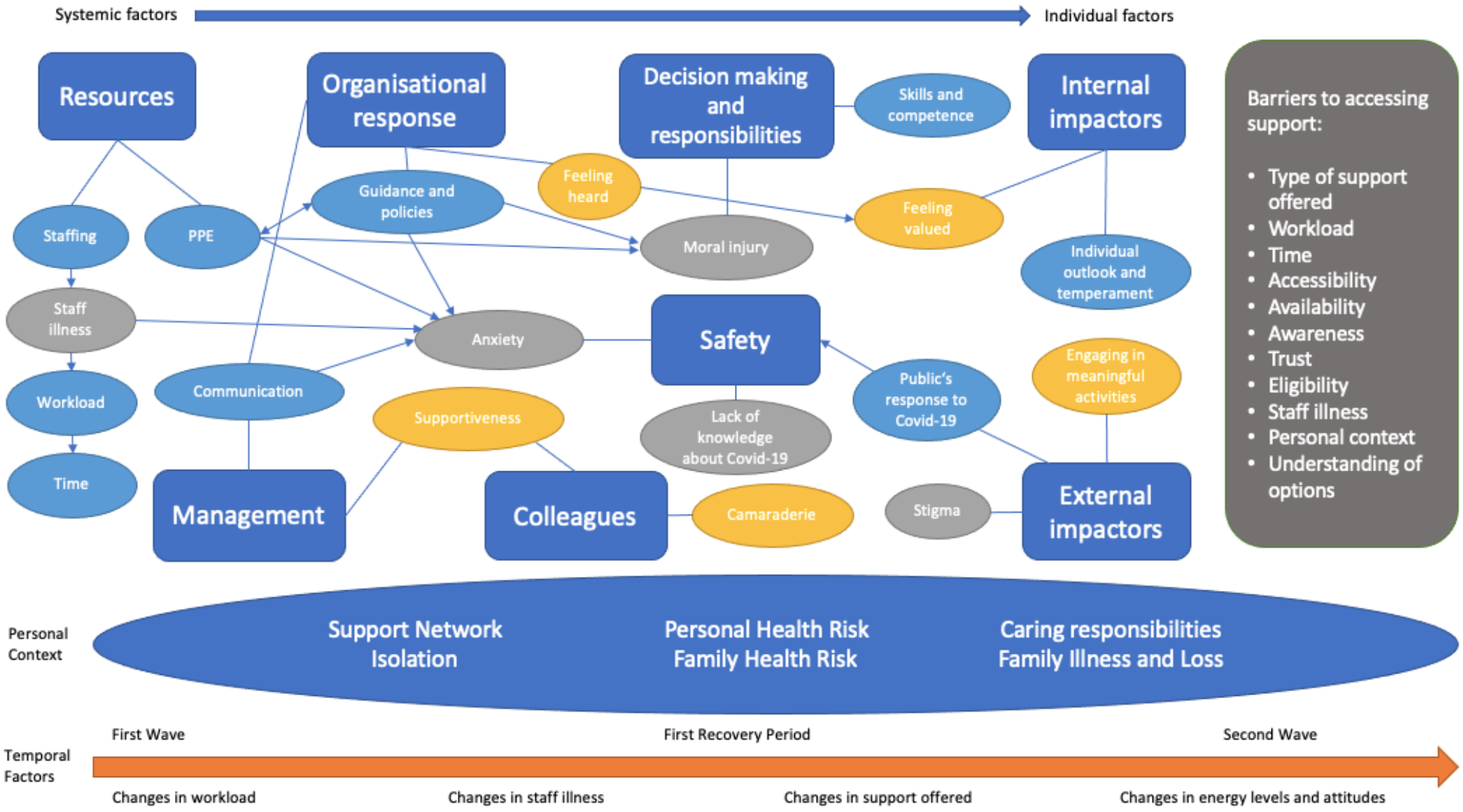
Above this foundation, the rest of the codes are presented starting with the system-related factors on the left and moving towards the more individual-related factors on the right. The systemic factors included resources, organisational response, management and colleagues, while the individual factors included decision making and responsibilities, external impactors and internal impactors. Safety is represented as an outcome of all the other factors which fed into it as participants stated that feelings of safety were influenced by the other factors. The focused codes with a clear positive impact on coping are presented in yellow while the focused codes with a clear negative impact on coping are presented in light grey. The focused codes that are more neutrally worded are presented in light blue. The relationships between the various focused codes were represented in the model. For example, the focused code of PPE within the resources theoretical code had a direct influence on anxiety and moral injury. Anxiety was related to participants' sense of safety while moral injury was related to difficult decisions they had to make while working. PPE had a bidirectional relationship with guidance and policies because although guidance is meant to influence how PPE is used, many participants spoke about how during the pandemic guidance would change depending on PPE supplies, resulting in greater anxiety. Staffing was a resource that had a significant impact on coping as staff illness during the pandemic resulted in increased workloads and less time available. Guidance and policies set by the organisation influenced the anxiety and moral injury participants experienced. Feeling heard by the organisation impacted how valued participants felt. Feeling valued was an internal impactor from within oneself that affected participants' ability to cope. Communication from the organisation and management had a direct impact on anxiety. Supportiveness from both management and colleagues had a significant impact on coping. The public taking Covid-19 seriously had a direct influence on participants sense of safety. This was an external impactor, a factor outside of oneself, that affected participants' ability to cope. Other focused

codes, such as camaraderie, stigma, engaging in meaningful activities and skills and competence, were included because they were highlighted by participants as significant factors that impacted their ability to cope.

The barriers for accessing support were presented because participants reflected on how even if they wanted to access support to help them to cope, there were various factors that hindered their ability to seek help. Factors impacting help seeking were discussed as distinct from factors that directly impacted coping experiences, therefore they were presented separately. However, the barriers for accessing support are presented in dark grey, a similar colour to the focused codes that had a negative impact on coping but different shade, because the barriers mentioned would have indirectly had a negative impact on coping by stopping participants from seeking help when needed.

Figure 2

Theoretical model of the factors that helped and hindered coping experiences of health and social care professionals working during the Covid-19 pandemic



Personal Context

Support Network

Participants reflected on the importance of the informal support provided by their personal support networks and how not being able to access this type of support at certain periods negatively impacted their ability to cope. Support networks had provided vital practical support by helping with caring responsibilities and preparing meals. Not being able to access this crucial support, particularly in relation to childcare, especially when schools were closed, was particularly challenging. Participants found it helpful talking to friends and family who were also frontline workers as they were having similar experiences and could relate to how they were feeling.

"... it had been months and months and months of no one being able to help me or give me any support at all in terms of childcare" P2

"I was very lucky to have the support of all of them [family members], not just mentally but physically. When I got home, I didn't have to do anything. My food was cooked, I was looked after and supported very well at home." P11

Isolation

Participants spoke about feeling isolated from others both physically and mentally and how this negatively impacted on their ability to cope. They did not see family or friends for long periods of time. Many felt the need to isolate themselves from others because of their regular contact with Covid-positive patients as they worried about infecting others.

"I haven't seen my family in person for, my immediate family, for months now, more than a year." P6

"... I felt like I couldn't or I didn't want to meet too many people outside of work with the risk of spreading because I was already meeting so many people who had Covid." P10

Participants left their own household, choosing to stay in a hotel or caravan to protect their families, which left them feeling isolated.

"... the day before the official lockdown, I moved out of the house. My son was two at the time. [...] I just felt like there wasn't the information there, for me to stay at home and potentially put him at risk." P19

Family Illness and Loss

Participants reported having to continue working in the frontline while a family member was severely ill impacted their ability to work. They described feeling more worried and stressed, particularly when they were involved in the care of this family member or had to make difficult decisions regarding their care.

"... my dad got taken into hospital. [...] I remember going into work knowing that he's got COVID [...]. My mind was just, I couldn't concentrate. And I think I got a minute with no patients and I just broke down..." P19

One participant spoke about how their partner died from Covid-19 which significantly impacted her ability to cope and resulted in her having to take a substantial amount of leave from work.

"... my well-being is at rock bottom because [...] my husband caught COVID, he brought it home and unfortunately, he died in May. [...] I'm still not able to go back to work because of the bereavement..." P11

Caring Responsibilities

Participants reflected on the difficulty of having to manage caring responsibilities for children and elderly relatives while working during the pandemic. As schools and nurseries closed, children had to stay at home and frontline workers could not access the support of their network due to lockdown. Participants spoke about how it was more difficult organising childcare with a partner that had to physically attend work and easier when their partner

worked from home. Participants who were able to work from home said this helped reduce their stress regarding childcare.

"… it's [her personal life] been helped by me being at home because […] being able to be at home when they've been in lockdown, not having that stress of having to worry about childcare was quite significant." P13

Single parents found it more difficult to organise childcare when the usual options were no longer available. They had to consider making difficult decisions such as taking unpaid leave to be able to look after their child.

"… my little boy's nursery shut and with very little notice and I'm a single parent so I don't have anyone else at home and to be able to look after him so a lot of stuff happened overnight, I found that period incredibly stressful […] I was going to have to take unpaid leave so it was, financially very stressful as well…" P2

Participants spoke about continuing to support their elderly parents with necessities such as food shopping. They worried about infecting them and spoke about how they noticed a deterioration in their parents' mental health due to isolation.

"I couldn't look after my mum because I was worried about passing it [Covid] down to her. […] She lives on her own so I was going and leaving her shopping for her, but I didn't realize the impact it was gonna have on her mental health until later on really." P5

Personal Health Risk

Participants reflected on how their level of personal health risk impacted on their ability to cope. Being considered medically low-risk made participants feel less worried about their safety while working and even made some participants want to volunteer for riskier tasks.

"There was a ward created for psychiatric patients with COVID. So I just volunteered to change wards and work on that because I kind of thought of all the doctors in the trust, I'm probably the lowest risk in terms of Covid." P8

One participant spoke about how she was "*classed as at risk"* because she has "*asthma"* and how this made her feel "*frightened*" because she knew "*what that struggle is for breath*" *P19,* which made it difficult for her to cope.

Being pregnant made participants feel more anxious initially due to the uncertainty about how Covid impacted pregnancy and later on because they were prohibited from taking the vaccine.

"... because everyone then started to be offered the vaccine and I was being told I couldn't have it. So then yeah it just became more of a worry because of my circumstance" P18

Family Health Risk

Participants reflected on how they worried about putting their family's health at risk by working in the frontline. One participant commented on how not living with anyone "*vulnerable at home*" made her feel less *"concerned" P8*, while another commented on how having children at home made her feel more *"vulnerable"* and worried about whether working in the frontline was *"worth the risk" P10*. Some participants who had children that were medically vulnerable alleviated their anxiety by moving out of their home. Participants who stayed home introduced infection control measures for when they returned home and trained their children to comply with them.

"I kind of trained him [child] that I would walk into the house. I would strip at the door. He wouldn't touch me. I would walk in and my partner would open the washing machine, I would put everything inside the washing machine and I would go straight to the

shower. And once I'd showered and cleaned and scrubbed, then I could be kissed and hugged."P14

Resources

Staffing

Participants reflected on how staffing levels impacted their ability to cope, particularly when they were short-staffed, due to colleagues being on sick leave, stress leave or shielding, as this resulted in increased workloads that were difficult to manage. Participants spoke about how being redeployed to an unfamiliar environment made it difficult to cope. One participant spoke about how *"there was nobody"* to give her an orientation so she *"had to hit the ground running and pick it up as I went along" P2*.

Participants spoke about how being severely under-staffed increased their workloads and made them feel unable to take breaks or leave. Many participants spoke about how their departments were already under-staffed pre-pandemic. Unmanageable workloads forced participants to start making decisions based on "*what's the least unsafe care I can provide?"*

"For a 40-bed care home, it was just me and the team leader and I developed like a cough […] and my team leader was just like, "take off your mask, it's stuffing you up" because they couldn't afford to get me retested and I wasn't allowed to go off sick because I was one of the few people working." P4

"Both teams I'm in at the moment, completely overworked, completely burnt out, not enough staff anyway, let alone now sort of post-pandemic." P9

Participants reflected on how they did not feel like they had a choice but to continue working because this was part of their job as care providers.

"I think we all just felt it was sort of in a position where there was nobody else to relieve us from the roles we were doing. […] It just felt like anybody who could work was working so it didn't really feel like you had a way out really, it's part of your job really." P17

Participants noted colleagues have resigned as a result of working during the pandemic, which is making them even more short-staffed and forcing their departments to work at *"a really unsafe level"P15*, reducing morale even more.

PPE

Participants reflected on how the availability of PPE in their services impacted on their ability to cope. One participant spoke about how she felt *"lucky"* to be working for an *"incredibly well resourced*" trust because she did not experience any *"issues about access to PPE" P3*. Others spoke about how they were frightened due to the lack of PPE.

"We were very, very, very scared. Especially the fact that we lacked PPE so much that was the biggest fear factor." P15

Many participants spoke about how the lack of access to PPE affected their ability to do their job and resulted in many colleagues becoming ill.

"There was no masks. And so we had to make a decision that we wouldn't go into any of the rooms until someone could provide us with PPE, because we knew our patients were COVID positive" P12

Constantly changing guidance about what PPE they had to wear made participants feel less safe, negatively impacting their ability to cope.

"We suddenly went from all this PPE to just the surgical masks, which we couldn't really work out where the evidence was for that, so people were quite worried." P12

Participants questioned whether the constantly changing PPE guidance was evidence-based and spoke about how the discrepancies between the guidance given to different departments reduced trust in the guidance overall.

"It just felt like when PPE stores were running out, then suddenly the rules would change and there didn't seem to be any consistency. And you could go between one ward and the other, and on one place you'd need a full respirator mask, whereas the bed next door, you

wouldn't. And it didn't really make much sense. And it seemed to be where there was a lack of supply of PPE, suddenly, the rules would change." P17

Facilities

Participants reflected on how the lack of space and facilities impacted their ability to cope. Not having any space to go to for breaks or to eat meals negatively *"affected morale"*.

"Sometimes you went up to have your lunch and actually couldn't have lunch because there was nowhere to sit. And so you ended up having your lunch on your lap in the locker room…" P7

One participant took it upon herself to create a space for staff where they could have a break outdoors by creating a courtyard garden.

"I developed a courtyard garden for the staff to utilize. […] And it was somewhere for the staff to go, have their break, sit down because our staff room was very small." P19

Participants spoke about how the lack of space made it difficult to isolate Covid-positive patients, which made them feel guilty for potentially harming other patients.

"People were waiting in the waiting room with COVID, with everyone else, and we couldn't do anything about it to isolate them. So we felt like we were almost hurting our other patients because we couldn't protect them." P18

Participants reflected on how implementing the use of video-conferencing technology helped improve their ability to do their work by making attending meetings *"easier" P8*.

Funds

Participants spoke about how financial resources and changes in salary influenced their ability to cope. Participants spoke about how during the pandemic, the "money was found much quicker than pre-pandemic" P1 when departments requested funds to implement changes.

Participants appreciated being paid overtime for additional time spent at work and reported this made them feel valued.

"... they paid us half an hour more for every shift we did because they know that it took longer to go in and go out because of all the PPE. It's very small things, but they realized that we were making an extra effort" P14

Participants were disappointed by the government's decision to cut the salary increase of healthcare workers because this made them feel undervalued.

"... getting a one percent salary increase has really felt like a slap in the face for many people." P14

Organisational Response

Guidance and Policies

Participants reflected on how continuous and frequent changes to guidance and policies impacted on their ability to cope. The lack of clear guidance resulted in feelings of frustration and distrust of the organisation as well as the individuals responsible for issuing the guidance. Participants felt nobody knew what they were doing, which made them feel less safe. Participants highlighted how PPE policies being issued by their trusts differed from those issued by their professional bodies, which made them question their validity.

"... it doesn't instil you with much confidence because a lot of the time, it didn't feel like the guidance, they knew what they were doing, so that made a lot of people feel quite unsafe." P11

"I think people were frustrated because of guidelines changed so quickly about what you should be wearing, what you shouldn't be wearing, what you should be doing. I don't think people had a lot of faith that those [individuals] issuing the guidelines really knew what they were doing and that what they were wearing was actually going to help them." P8

Participants reflected on how the lack of clarity in the way guidance was written meant it could be interpreted in different ways which made it difficult for them to understand and resulted in conflict between team members. Participants felt more responsible for negative outcomes and experienced greater feelings of guilt due to the lack of clarity.

"… a lack of guidance made it really difficult to cope because it's like everything becomes really personal. It's like have I killed people?" P4

"How do you define urgent needs? And what I might perceive to be an urgent need would be very different to what you perceive […] I think there was a bit more conflict starting to develop between team members, because no one was really sure about what constituted an urgent visit and what didn't..." P13

Feeling Heard

Participants reflected on how feeling heard by their organisation impacted on their ability to cope. Many participants felt their voices and concerns were not taken into consideration or given importance by their organisations. The top-down communication made participants feel their organisation did not care to hear or understand what their experiences were like.

"… they were quite happy to just implement things and expect us to work with this like face to face without proper PPE, and they weren't really listening to our concerns." P18

"They didn't want to hear so much about what it was like working at my level, which was the most junior level, it was kind of like, "This is what you have to do. This is in line with government policy" and it's kind of non-negotiable. […] I think maybe a bit more of a dialogue might have been useful." P8

Participants questioned how their organisation would be able to provide adequate support for them without trying to understand their challenges.

"Listen to the frontline staff and to then make changes based on what they say, rather than sitting in an office deciding what we're going to do. Making decisions that doesn't affect them at all but affects us massively." P7

Participants who felt heard reflected on how this had a positive impact on their ability to cope because it made them feel valued and cared for.

"Even if there is nothing physical or practical that they can do to help you, just that act of listening and checking in and touching base and feeling like someone cares about who you are as a human being […] makes a massive difference." P2

Communication

Participants reflected on how the style and rate of communication from the organisation they worked in impacted their ability to cope. The lack of communication made participants feel more anxious.

"Changes were starting to be made in preparation without much communication to the people actually working on the shop floor that made us more fearful because it was almost like they knew something we didn't." P18

Participants that received regular communications from their organisation through executive briefings where they could also provide input felt this was helpful because it made them feel like the usual *"hierarchical barriers" P8* were absent. However, receiving daily communications about the rates of infection and death in the hospital were viewed as unhelpful as they made participants feel less safe. Participants preferred these to be optional. Participants said the *"pep talks from people that were not on the frontline"* were not helpful and resulted in feelings of resentment.

"The whole "we're all in this together", while they're sitting in an office. That didn't go down well, and people started to resent it." P7

Pace and Management of Changes

Participants reflected on how they had to cope with ongoing changes that were being suddenly implemented and made their work more stressful.

"It was all we're doing this today, but tomorrow we're doing this. So it was a very quick change, very quick turnaround." P13

Participants who were redeployed were told that their services were deemed "*non-essential*" and had their activities "*ceased almost immediately*". Participants reflected on how having their work declared non-essential made them feel. They had to call all their clients to cancel all appointments indefinitely which was "*hectic*" P17.

Participants spoke about how their redeployments were also halted swiftly. They found it difficult returning to their regular roles as they did not have a break after their redeployments ended. It was difficult returning to their teams because all their colleagues had such different experiences. Some were not even redeployed.

Participants felt pressured to get their services back up and running quickly to cope with the backlog of patients that were not seen.

"We'd all sort of separated during COVID, some people had gone to intensive care. Some people had stayed at home in the garden. Some people had carried on doing a little bit of clinical work below the radar. Some people had been doing their private practice. It was a really odd experience to come back together as a team. And there was no recovery time because then we were under a lot of pressure to catch up on the waiting list..." P3

Level of Preparation

Participants reflected on the amount of preparation they were given before their roles and responsibilities were changed in response to the pandemic, and how this made them feel. Changes being implemented suddenly resulted in participants having little time to prepare for their new responsibilities and gain necessary skills. For example, participants who were

redeployed reported they did not receive any training and were expected to "*hit the ground running" P2*.

"I went back to work on the Tuesday and was sent straight into intensive care to COVID ITU. There was no training, there was nothing." P7

One participant who received *"in-depth ITU scenario-based training"* at the start of her redeployment, compared this experience to her previous experiences working through other outbreaks. The greater level of preparation for Covid-19 made her worry more because she felt it was being taken more seriously than others.

"Just from previous experience with like the bird flu, swine flu and things like that, this was unprecedented levels of preparation. And I just thought, no, this is something that I've not seen before. It was a feeling of being on high alert. And it was scary..." P19

Management

Supportiveness

Participants reflected on how the level of support offered by management impacted on their ability to cope. Many participants experienced a lack of support from their managers which made them feel abandoned. Few participants highlighted how the lack of support from management was due to managers being off sick.

"... we felt we were just left to get on with it" P5

"... we didn't really have much support in terms of management only because she was off sick." P10

"... you expect your senior management team to be there through a crisis because that's what they're paid for and that's what they're trained to act, [...] because they weren't there for us [...] they were really big contributing factors as to why we struggled....." P15

The lack of support resulted in staff no longer having *"respect for that hierarchy"* because they *"felt so let down by them [management]" P17*. The lack of support from management was also described as dehumanising.

"I guess the managers kind of attitude to everything didn't help, that definitely made it harder and difficult. […] It felt very much like throughout the whole thing that NHS staff were just seen as this kind of massive machine and we were all just cogs that needed to keep turning in order for everything to keep working, like at whatever cost, and if you didn't have Covid you were meant to be there, being that cog and if you weren't being a cog, you were not useful to them and they were not interested in you and it just felt all very kind of unhuman." P2

Participants who felt well supported by their managers said they felt safer because their managers listened to their needs and advocated for them.

"I went to my line manager […] and I said to him, "I can't do this anymore. I can't do it. I don't like doing the intubation team and I don't mind coming back into theatre, but I just can't do ICU anymore." And he was very good, and he pulled me out." P7

Communication

Participants reflected on how communication with managers impacted their ability to cope. The inconsistency and lack of communication from managers was unhelpful because it made participants feel more anxious.

"There was no communication." P3.

"… there was snippets coming from different managers, it just didn't seem like they were all on the same page." P8

Participants said being informed by their managers about patient bereavements ahead of a shift was helpful and "was a nice human touch" P19.

"I wish that I would have been told before coming on shift who died, […] I would have appreciated that." P4

From the perspective of a manager, one participant spoke about how she held regular meetings with different professionals within her team to listen *"to what people had to say" P6* and offer tailored support when needed.

Understanding and Acknowledging Challenges

Participants reflected on how management understanding and acknowledging the challenges they were facing impacted on their ability to cope. Participants felt management did not understand the extent of their challenges which made it more difficult for their managers to support them. Every role would have had a unique set of challenges, which would have been helpful for management to know. Many participants suggested that management *"come and do a shift" P4*, to understand how to better support them.

"A better understanding of what we do would have helped […] understanding of what people's roles actually are because there's lots of different types of frontline staff and really knowing what they do and stuff like that would help." P10

Managers who communicated with participants in an understanding way and acknowledged that they may not be able to complete all tasks, helped them feel less stressed by alleviating the pressure.

"What I think was very helpful was that while we were in ITU, they [managers] would say, "you can only do what you can do, don't beat yourself up about something. If it hasn't happened, just hand it over. The situation is uncontrollable and relentless". And so giving yourself permission". P14

Empathy

Participants reflected on how the empathy they received from management impacted their ability to cope. Participants experienced a lack of empathy from management and felt

like their concerns were dismissed. Participants found the lack of empathy particularly difficult when they were in redeployed roles because they were suddenly responsible for completing tasks they did not have the skills for. The lack of empathy resulted in *"a few people just walking off shift"*.

"… no one really was concerned about your mental health or how you were feeling, and if you did voice a concern about how you're feeling, it was kind of brushed aside […] There was no real concern. It didn't matter that staff were going home in tears or couldn't sleep and stuff". P7

"What we were doing, we'd never done before, […]. And in fact, the whole process was belittled a little bit by senior staff management to the point where people were saying, "Well, do you know what, then, I don't have to be here today…" P7

Participants who were medically vulnerable and experienced personal difficulties spoke about how the lack of empathy from management upset them and made them feel like an *"assignment number" P19*. One participant spoke about how the lack of empathy from management stopped her being offered support.

"I had a particularly difficult shift, and one of the band sixes was trying to put support in place for me. But our band seven was like, "Oh, you'll be fine". And he was just like cancel it." P20

Visibility and Availability

Participants reflected on how the visibility and availability of their managers impacted on their ability to cope. Participants spoke about how they did not see their managers and described them as *"non-existent" P17*, which made them feel unsupported and angry.

"They just left us to it and they all went to work from home. We didn't see anybody management wise for over three months, so we all got very, very crossed." P5

Some participants spoke about how they felt their managers were unavailable because they were too busy themselves.

"Because everybody was spread so thin at the senior level, you couldn't really go and check with them." P14

Participants working on Covid wards commented on how they could not approach managers even if they wanted to, because of infection control protocols which made it difficult to reach them.

"… if you phoned them they didn't seem to be there and you couldn't see them face to face because you were almost like you were contaminated so it was like a 'don't cross this line' kind of thing" P17

Respecting Staff Time

Participants reflected on how management respecting their time impacted on their ability to cope. Participants who experienced managers respecting their time, by not expecting them to stay late and making sure they took breaks, found this helpful.

"No one was expecting you to stay more to finish them, which is a mentality that is very present in ITU if it is not under those circumstances, so I think that was very helpful." P14

Participants that were pressured by their managers to regularly stay late said this negatively impacted their ability to cope. One participant commented on how this resulted in colleagues going *"off with stress".*

"The manager just kept pushing to do more and more operations in the recovery period, so we'd be staying later, nearly every night." P7

Colleagues

Supportiveness

Participants reflected on how the level of support they received from colleagues impacted their ability to cope. Support from colleagues was described as vital in helping participants to cope.

"[Colleagues were] Very supportive. Absolutely supportive. The doctors, my colleagues, ODPs nurses, cleaners, domestic people, all very supportive. And, two-way things, you supported each other through it." P11

Participants spoke about how the hierarchies that were usually in place disappeared during the pandemic as colleagues from every level were helping each other out.

"There was a levelling. Because it's very hierarchical hospitals, everyone has their position, but COVID was a great levelling thing because you started working as a big globular group where people were interchanging and people were a lot more understanding." P1

Participants spoke about how colleagues offered both practical and emotional support, which they appreciated and found helpful.

"… the night where I had quite a few patients who died, my colleague was able to be like, "Go on, break, I'll cover you" like to just make sure that you get those breaks and things. To make sure you get out of the PPE and that you get a drink and that kind of thing." P12

"They were an important kind of emotional support as well. I think just knowing that they were there and knowing that they understood and that knowing that they were kind of looking out for me and I was looking out for them…" P8

One participant commented on how her colleagues were initially supportive but over time, as the whole team became more exhausted and felt an increase in pressure, colleagues started *"getting a lot snappier with each other".* She reported that this change *"made it harder going to work" P18.*

One participant, based in the community, reflected on how not physically going into work meant she could not receive informal support from colleagues.

"It was really tough and really stressful and actually really lonely because we'd been working on our own as community nurses and not going back to base" P20

Camaraderie

Participants reflected on how the camaraderie they experienced with colleagues impacted their ability to cope. The sense of camaraderie that developed with colleagues had a significantly positive impact on coping. One participant compared the camaraderie he experienced during Covid-19 to his time in the UK military.

"They [colleagues] were my everything. They were my teacher, showing me what the hell I was doing, they were my only adult contact that I was having … they were my only source of emotional support in person apart from my partner. And they were making me laugh, it was the only source of joy really to be honest, my relationship with them, and it was the perfect antidote to everything that was going on and without them I think I would have completely crumbled" P2

"… things that made it easier was the sense of camaraderie between the team. We were like rallying together like we were all in this and we all understood what each other were going through." P12

One participant, based in a community team, reflected on how the lack of camaraderie with her colleagues had a negative impact on her ability to cope.

"I think that would have been just such a huge support for me to be able to talk to colleagues. But I just felt really isolated from my colleagues, […] And I think that was one of the things that made it really tough." P20

Relatability

Participants reflected on how talking to colleagues was helpful because they could relate to how they were feeling as they were *"very much in the same boat" P13.*

"... talking it through with people that had done it with you as well and could relate to what you were saying, made a difference." P7

Learning that colleagues felt equally anxious helped participants to cope because it normalised their own feelings.

"... having other people who are going through the same thing and your feelings [...], a lot of people were feeling like that, made me feel a bit reassured that it's just fairly normal to feel so anxious during such unsafe times." P10

Participants felt it was easier talking to colleagues rather than friends or family because they would not be able to relate to their experiences and may not want to hear about negative subjects such as death.

"... people don't really want to hear how that person died, you might talk about it with your colleagues and go, "Geez, that was a bloody bad one, wasn't it?" It's not always the sort of stuff you can talk through with your kids or wife because they don't really understand." P16

Burden of Helping Each Other

Participants reflected on how they felt compelled to help their colleagues which felt burdensome at times. Participants helped their colleagues despite their reluctance because they felt guilty if they did not.

"Sometimes you'd stay late or you try and kind of cover people, so you might not take a long break because you knew that your break then impacted on somebody else." P12

"Then like the guilt kind of takes over and you think, "Oh, if I cancel my overtime, then they will be shorter. And then it will be harder for other people". Instead of saying "No, actually, I just need some time for myself". I would still go and do my overtime." P18

Caring for Colleagues

Participants reflected on how caring for their own colleagues impacted on their ability to cope. Participants reported feeling more anxious and less safe when they had to care for a colleague.

"We had a lot of staff off sick and we were also looking after staff. […] Looking after your colleagues is obviously not something that you ever want to do and makes you nervous." P12

"I remember staff members being admitted, […] and that wasn't easy." P19

Colleague Bereavements

Participants reflected on how difficult it was for them to cope with the loss of colleagues to Covid-19, particularly after they had to care for them.

"… when your colleagues have died from it and they're in hospital and they're unwell and you're getting text messages saying how scared they are, they feel like they can't breathe and you're just helpless, you really are just helpless." P19

Decision-making and Responsibilities

Skills and Competence

Participants reflected on how their skills and competence in navigating their roles during the pandemic impacted their ability to cope. Participants spoke about how not having the skills to make certain decisions made it difficult for them to cope with the demands of their role, especially redeployed participants.

"I had to make decisions that otherwise someone far more senior would make. It's like I'm unqualified. I don't know…" P4

"And although we could do our best, we're not ITU trained, I'm not nurse trained. […] There was an awful lot that we have never, ever done. And suddenly you're there on your

own looking after a really sick, intubated, ventilated patient. […] I had no idea at times what I was doing*." P7*

Participants relied on colleagues to help train and teach them the skills they lacked when needed.

"But in terms of actual training and education, it was all kind of clinician lead so if you had someone in your team who had a skill, they would teach you it…" P17

Moral Injury

Participants reflected on how they experienced moral injury as a result of difficult decisions they had to make while working during the pandemic. Participants found conversations with patients and their families particularly challenging.

"I could not believe myself that I was having to say it to people: "sorry it's been six years of marriage and your wife is not actually allowed to come in". You're speaking to them on the phone and all you're thinking is you don't want to make this phone call." P1

Participants spoke about how the lack of clear guidance or having to follow guidance they disagreed with, resulted in them making morally injurious decisions.

"… when you feel like you're being blamed for decisions other people have made and you can't really do anything about them, like it's not a nice feeling. You feel so guilty, […] You kind of feel like you're a bit complicit. Because you're parroting the decision that the management has said, …" P8

Participants spoke about how the lack of PPE resulted in them having to make morally injurious decisions such as withholding interventions, which was difficult to cope with.

"… you no longer could do CPR without an FFP3 mask on, and we didn't have enough FFP3 masks to put one in every room. So if you found a patient unresponsive and you pulled the crash bell, you weren't allowed to do chest compressions until somebody got there

in full PPE. We just had to stand there and that just goes against everything that we're taught." P12

Complexity

Participants reflected on how difficult it was to cope with the complexity of the decisions that had to be made.

"For instance, you have people who need to use like a hoist and stuff, so you need two carers. But there weren't two carers in the building, so it's like do I unsafely move this person, or do I just keep them in bed all day? Neither are good…" P4

"… there was one time where there was only one ICU bed left and I had three patients in resus that needed it." P18

Consequences

Participants spoke about how ruminating on the consequences of the difficult decisions they had to make, made their work more stressful. Thinking about how they could have taken the wrong decision made it more difficult for them to cope.

"I just went home feeling like I'd given her a death sentence, like if she caught Covid because I hadn't isolated her. It would be my fault if anything happened to her." P18

External Impactors

Engaging in Meaningful Activities

Participants commented on how being able to engage in meaningful activities outside of work helped them to cope. Continuing to engage in activities that were *"non-medical" P8* was helpful for participants; such as creative pursuits, exercise and church.

"I did quite a lot of crafting at the time just because it took my mind off it [work]." P7

"I think for me that my way of sort of distressing is by doing exercise, so that's probably my way of sort of decompressing." P17

"I do online church, which I normally go every week…" P6

Some participants spoke about how feeling exhausted and burnt-out from work stopped them from being able to engage in meaningful activities in their limited time off.

"I used to be really involved in like sea swimming and I'd spend a lot of time doing it. I was involved in a club and stuff, but then I was just so burnt out from work. I just didn't have the energy to do anything in the evening." P20

Public taking Covid-19 Seriously

Participants commented on how seeing the public taking Covid-19 seriously impacted their ability to cope. Seeing the public take Covid-19 safety regulations seriously helped participants to cope because it made them feel less worried about their safety.

"... when the general public were wearing face masks. It just made you feel that little bit more reassured. P17

Participants spoke about how seeing the public not take Covid-19 seriously was not helpful because it made them feel less safe.

"I just wish people would take it seriously. There are still even now people not wearing masks." P11

Few participants commented on how witnessing the public not following Covid restrictions made them feel angry.

"And I just want to scream at them, which is not a very healthy reaction" P14

Stigma

Participants commented on how they felt stigmatised for working as healthcare professionals during the pandemic because people did not feel safe around them. Participants were not invited to events by family and friends.

"she's one of my best friends, but she was like, "I can't invite you because my sister said you're working with COVID people and she doesn't want you to be there and she won't come if you were there", because people were so worried that I was carrying it" P12

One participant who was living in a flat-share with other healthcare workers spoke about how their landlord did not let them renew their lease because of their jobs.

"... our lease came up on our apartment in [...] August and our landlord didn't want us to renew the lease because of the industry that we all worked in." P17

Internal Impactors

Feeling Valued

Participants reflected on how feeling valued by their organisation and the public impacted their ability to cope. Being supported by their organisations and the public made participants feel valued which helped them to cope.

"You know there's been a lot of public love and support for the NHS, which makes me feel quite valued, ..." P8

"I think my trust in particular has been very helpful. I know other hospitals haven't been as helpful. So we felt very supported, very valued." P14

Participants who experienced a lack of support from their organisations did not feel valued.

"... there were a lot of people that were just angry, angry at the fact that we were just left like, people really felt undervalued and, we got through it, but it was like we got through it, there wasn't any support there." P15

Participants commented on how not being recognised appropriately for their efforts made them feel undervalued by their organisations.

"They came around to all of the wards and gave us this really rubbish badge (laughs), and they made a massive deal about it and it was like tipping someone 2 p and it was best to just not do it at all, like it just felt a bit insulting [...] and they would have said that was a method of support, like a way of showing us that they cared and valued us and stuff but it just felt ridiculous after everything that had happened." P2

Individual's Outlook and Temperament

Participants reflected on how their own attitudes while working during the pandemic impacted on their ability to cope. Participants with an optimistic outlook on their experiences spoke about how this helped them to cope.

"I would take what I say with a pinch of salt because I see the world through rose coloured glasses and so it's not like I'm putting a positive spin on things, it's just the way I see things." P6

One participant commented on how imagining a future where Covid is no longer a threat helped her to cope.

"I think just having the mindset […] that this is going to be over. We're not going to be isolated forever. We're not going to be socially distanced forever. We're not, the hospital isn't going to be like this forever. […] I think just kind of visualising a future where COVID isn't such a big problem. I think that that's what helps." P8

Participants reported feeling *"bitter" P12* and *"a bit jealous" P9* of friends and family that were able to stay safe by working from home. Some participants spoke about how they noticed themselves becoming angrier.

"I've become more of an angry person." P4

Feeling Helpful

Participants reflected on how feeling helpful during a crisis helped them to cope. One participant spoke about how being able to work during the pandemic made it easier to cope because it made her feel *"less powerless" P4*, while another participant spoke about how working in the frontlines made her feel *"proud" P8*.

"… being able to support the team as best I could and support patients and families as best I could. I found rewarding in a way" P3

"I wanted to work. I wanted to help, be helpful. I mean, I tried to cancel my retirement to still carry on working full time or as many hours as they needed me to." P11

Physically Connecting with Others

Participants reflected on how they appreciated being able to physically go into work and connect with others during the pandemic, especially when compared to working from home which was more isolating.

"I have lots of friends […] who were having to work from home and I felt quite lucky in some ways, in comparison to them, because I had that adult contact like with another human day to day, which they weren't having and were really struggling with." P2

"… it's just so much better being able to go in and see people and do things with your hands and like be out and about, than work from home." P4

Safety

Participants reported their sense of safety was influenced by their level of anxiety, lack of knowledge about Covid-19, infection control procedures, testing and the vaccine.

Participants commented on how the **anxiety** they felt was fuelled by the lack of PPE, constantly changing PPE guidance and media reporting during the Covid-19 pandemic.

"There was an obvious anxiety at first, because when we first started working, I don't think we had any PPE. And then it went from having nothing at all, not even your paper face masks, to then get them say "no actually you need a full respirator mask, hazmat suit" and overnight it changed and I think also on the ICU, we were wearing full PPE, but then we would go onto a ward and we didn't have anything. The disparity between it was quite concerning." P17

"It was scary. And there was so much on the news and in the media, especially about the lack of PPE at the time." P7

Participants reflected on how the **lack of knowledge** about the novel virus and about how to treat it impacted their ability to cope. The uncertainty surrounding Covid-19 and how to treat it made participants feel more worried because they felt "*no one really knew what to do about it" P17.*

*"But it was that feeling of, "I don't know what the f*** I'm doing. Nothing I do works and what should be working isn't working, so what do I do?" I think that was probably the hardest bit to deal with...." P14*

Participants reflected on how the **infection control procedures** implemented within their services made them feel safer. Participants who witnessed infection control procedures not being followed felt more anxious.

"There was no social distancing at all in the office, didn't have to wear masks and all just in the same office, just all feeling quite uncertain […] it was really anxiety provoking." P9

Participants spoke about how being able to get **tested for Covid-19** and knowing their Covid status made them feel less anxious.

"We were being tested, so I felt less anxious…" P3

Participants reflected on how they felt safer after receiving the **vaccine** and after their colleagues received the vaccine.

"My vaccination made me feel really loads loads more safer." P2

Temporal Factors

Changes in Staff Illness

Participants reflected on how staff illness levels changed over time during the first year of the pandemic and the impact this had on them. Participants noted there was greater staff illness in the second wave, which resulted in increased workloads.

"We were working ridiculous amount of overtime hours just because we were so short staffed. I think by the time, I don't know whether it was just the hospital I worked on, but by the time the second wave came around like staff sickness, I think at one point staff sickness was around 30%..." P17

A participant who worked in a care home spoke about how in her service they experienced greater staff illness during the first wave and none during the second wave.

"We didn't have any staffing shortages during the second wave. […] it didn't really affect our care home." P4

Changes in Workload

Participants reflected on how their workload changed over time during the first year of the pandemic. Most participants spoke about how their workload increased during the second wave due to staff illness, increased severity of Covid variants and patients avoiding seeking help throughout the first wave. Only two participants, including the care home worker, said they just experienced an increased workload during the first wave.

"... there was a lot more people coming through the doors the second time around, in comparison to the first. Whereas the first time around people were a lot sicker, we had patients just piled up on the corridors waiting for beds, ambulances queued up outside the second time..." P17

"I know that the rest of the outside world went through several waves but like for us, it was one wave and done." P4

Changes in Energy Levels and Attitudes

Participants reflected on how their energy levels and attitudes about working in the frontlines changed over time and how this had a negative impact on their wellbeing. Participants reported that the second wave was more difficult to cope with because by that

point the novelty of the pandemic had worn off and they were feeling exhausted from the *"relentlessness of it" P3*.

"I was tired. I didn't want to keep dealing with it." P12

"Everyone found it a lot tougher the second time around […] first time around it was new, it was different, it was a challenge, it was a bit of problem-solving, whereas the second time around, it just felt like you were fighting a losing battle and everyone was exhausted, everyone was really stressed." P17

Changes in Support Offered

Participants reflected on how the support they were offered changed over time during the first year of the pandemic. Some participants spoke about how they were offered more support during the second wave, due to management focusing on staffing issues and managing general *"panic"*.

"The first wave, everyone was just reeling and just completely overwhelmed and I think they tried to basically make sure there was enough staff everywhere. […] and then the more emotional support stuff came a bit later when I think they realised how long it was going to go on for, what a big impact it was having on people and management had time to get their head around things and actually sort that out." P2

While other participants spoke about how they were offered more support during the first wave as greater efforts were made to alleviate distress during the onset of the crisis.

"… it was within the first wave, I was most aware of it [support offered], […] I've been less aware of it during the second wave. […] But I think there maybe is a tendency to focus on it during the crisis..." P3

Barriers to Accessing Support

Participants spoke about how their **workloads** stopped them from being able to access support.

"I think just work pressure in general and workload was a massive barrier to accessing support." P17

Participants spoke about how the **type of support offered** was a barrier for them accessing support. They did not view the support being offered as helpful.

"There are things [support offered] I've avoided doing because I've looked at it and gone, 'oh my goodness, there is no way that is a good idea. I'm just not going to go and do that'" P3

Participants reflected on how **time** was a barrier to accessing support. Participants did not have enough time to access support due to their increased workloads. There was also the belief that support would have to be accessed during their own personal time, which they did not want to do.

"It was like manic. You didn't have time to think of yourself or, it was just keep on going, it wouldn't have even come to my mind to get support" P11

"It seemed like anything that was offered […] you had to do it on your own time." P17

Participants commented on how lack of **awareness** of what support was available was a barrier to accessing support.

"They [support offered] weren't particularly well advertised…" P7

"If there was support available, I definitely didn't have the information about it, so I don't know what the problem was." P4

Participants spoke about how lack of **accessibility** was a barrier to accessing support.

"I've got loads of stuff to do, so they needed to put stuff in place so that it was like 'this person is going to do all of your jobs for the next 20 minutes. We are going to come and talk about, Are you OK? What do you need? What would be helpful?'" P12

"I know that there was a group of counsellors and psychologists in the hospital which you could go and drop in, but they were never visible." P19

Participants reflected on how the lack of **availability** of support was a barrier to accessing support. A mental health worker reflected on how she provided support but was not offered any.

"I was one of the people who was providing support for other people as part of their redeployment. But interestingly, that meant that often we weren't provided with support ourselves as a psychologist…" P3

A care worker commented on how she *"got absolutely no support" P4* offered to her.

Participants spoke about how **staff illness** was a barrier to accessing support because it resulted in increased workloads and less time available.

"…just the sheer amount that I was working, just doing all the overtime that we could because we were so short staffed, […] so then everyone was trying to do more overtime. So that made it harder to access anything." P18

Participants commented on how **trust** was a barrier to accessing support because they did not feel the support offered by the organisation would be confidential or *"authentic" P15*.

"I've looked at it, and I've considered it on several occasions. But I've not gone ahead with it purely because of time issues and probably also an element of trust as well in that whilst they do say that it's all confidential and things like that, you do wonder how confidential it is and if it will get back to someone...." P13

Participants spoke about how a lack of **understanding of the different options** available and of what type of support might be the most helpful for them was a barrier to accessing support.

"…almost so much support, it was difficult to know what to access. […] I know that other people are also very confused by what it is they should be accessing." P3

Participants reflected on how their **personal context** and responsibilities outside of work were a barrier to accessing support.

"...it [accessing support] would have had to have been outside of my working hours, which I would have never been able to do because I didn't have childcare so even if I wanted to, I wouldn't have actually been able to access it." P2

Participants spoke about how not being **eligible** was a barrier to accessing support, particularly for the social care worker.

"... the thing that made me really feel as if I had no support was when I'd come home from a terrible shift, someone I really cared about had died, order a pizza and then it was like NHS staff get a quarter off and it's like can I get a quarter off? It felt like care workers had just completely been forgotten about." P4

Discussion

The current study explored the underlying factors that impacted the coping experiences of HSCWs working in the frontline during the first year of the Covid-19 pandemic. The study aimed to develop an explanatory model of the processes that helped and hindered the coping experiences of this occupational group and illustrate how they inter-relate.

The grounded theory analysis of the interviews with HSCWs generated eleven theoretical codes made up of fifty-eight focused codes. The results highlighted that HSCWs' coping experiences while working in the Covid-19 frontline were complex and distinct. Personal context had a great influence on coping experiences, which is why it formed the foundation of the conceptual framework. Several factors related to both the individual and workplace system were identified by participants as impacting their ability to cope. Many of these factors influenced participants' sense of safety. Numerous barriers to accessing support

were mentioned as they impacted on participants' ability to seek help. They were represented separately in the conceptual framework because they were discussed as distinct from factors that impacted on coping experiences. Participants reflected on how certain factors which influenced coping experiences changed over time throughout the first year of the Covid-19 pandemic and these were represented by the temporal factors illustrated as an arrow at the base of the model.

All participants discussed how their personal context influenced their ability to cope. Ability to cope was hindered by not being able to access usual personal support networks and having to isolate from family and friends. Previous studies have shown that supportive relationships with family and friends are regarded as an important source of support for HSCWs (Aughterson et al., 2021; Labrague, 2021; Newman et al., 2021). Previous research also found that being socially distanced from established support networks hindered coping during the Covid-19 pandemic (Cipolotti et al., 2021; Dyson and Di Lamb, 2021). Despite being a source of support, family was also described by some participants as a source of worry and responsibility. For example, having to manage caring responsibilities for either children or elderly relatives during the pandemic brought with it additional demands. HSCWs had safety concerns while working in the frontline and worried greatly about infecting their loved ones which further hindered coping. Being deemed medically high-risk themselves or having a family member who is medically high-risk exacerbated the safety concerns. The negative impact of worrying about becoming infected with Covid-19 and infecting others has been highlighted in other research (Greene et al., 2021; Pappa et al., 2021; Plessas et al., 2021). Some participants reflected on how experiencing family illness and loss and having to make decisions regarding a relative's care while working hindered coping. The negative impact of personal bereavements on HSCWs while working during Covid-19 has also been highlighted in previous research (Newman et al., 2021; Das et al., 2021).

Many systemic factors were identified as contributors to the coping experiences of HSCWs during the Covid-19 pandemic. The systemic factors were related to the resources available, organisational response, management and colleagues. Regarding resources, participants identified lack of staff, PPE availability, facilities and funds as factors that hindered their ability to cope. Many staff were unable to work in their usual roles either due to illness, shielding or being redeployed which greatly reduced staffing levels and increased workloads for those that continued to work. The finding that increased workloads had a negative impact on coping while working during a pandemic is echoed in research conducted during the SARS pandemic (Moore et al., 2005; Bergeron et al., 2006). Increased workloads also made it more difficult for HSCWs to take sufficient breaks which they reported was further exacerbated by the lack of facilities and space available for them to take a break. This is in line with other findings that increased workloads resulting in insufficient breaks hindered coping during Covid-19 (Cubitt et al., 2021; Gemine et al., 2021). Participants reported that being adequately compensated financially for their efforts during Covid-19 also facilitated coping. Previous research found that not providing financial remuneration made HSCWs feel underappreciated (Bergeron et al., 2006). Most participants identified lack of access to PPE as a major factor that hindered their ability to cope as it resulted in increased anxiety due to concerns about their safety and ability to do their job. These results are similar to findings from other studies conducted during the Covid-19 pandemic (Cipolotti et al., 2021; Greene et al., 2021). Considering the transactional model of stress and coping, the lack of physical resources resulted in HSCWs appraising that they lacked the ability to cope with the work-related stressors they were facing, resulting in greater stress (Lazarus and Folkman, 1984).

Regarding organisational response, participants identified lack of clear and consistent guidance, not feeling heard, lack of communication, lack of preparation and the fast pace and

management of changes as factors that hindered their ability to cope. Similar to findings in other studies (Cubitt et al. 2021; Plessas et al., 2021), participants highlighted how the lack of clear and consistent guidance from their organisation hindered coping. Constantly changing guidance led to mistrust as many participants speculated that changes to guidance were based on changes in PPE supplies available within their organisation rather than the evidence-base around what protection was most effective. Usually it is the guidance, based on the evidence-base, that dictates what PPE should be used, not vice versa (Tan et al., 2020). The lack of clear guidance resulted in increased anxiety as participants worried about their safety, which is similar to previous findings (Vindrolas-Padros et al., 2020; Nyashanu et al., 2020). Feeling heard was another key factor that impacted coping. Many participants reflected on how not feeling heard by their organisation made them feel undervalued, which hindered their ability to cope. They questioned how their organisation would be able to support them without asking them directly about their experiences to understand the unique challenges they were facing. HSCWs desired two-way, consistent and regular communication from their organisation because a lack of communication made them feel more anxious. The lack of preparation and fast implementation of changes made it difficult for participants to cope, especially when they were redeployed. HSCWs would prefer being consulted more and offered adequate training when given new responsibilities (Billings et al., 2021b).

Management and colleagues had a significant impact on the coping experiences of HSCWs. Most participants reported they experienced a lack of support and communication from management which hindered their ability to cope because the lack of information received from management made them more anxious. Receiving regular appropriate information from management during the Covid-19 pandemic has been found to help HSCWs to cope (Pappa et al., 2021). Participants felt managers did not fully understand the challenges they were facing and wondered how they could without regular communication

and not being physically present in the workplace environment. Greene and colleagues (2021) similarly found that not being able to tell managers that they are not coping hindered HSCWs ability to cope. Participants in the current study highlighted that the lack of empathy, particularly regarding their personal health risks or personal context, also hindered coping.

HSCWs valued supportive and compassionate relationships with both managers and colleagues. Support from colleagues greatly facilitated coping and some participants stated they valued this support over any other because colleagues could relate to their experiences as they were "in the same boat". In addition to supportiveness, the increased sense of camaraderie with colleagues helped facilitate coping as they rallied together while working in the frontline. Camaraderie has been identified as a protective factor in other research (Rose et al., 2021). Similar to the literature, the camaraderie experienced was also compared to working in a military frontline (Dagyaran et al., 2021). However, at times HSCWs felt burdened by colleagues. Particularly when helping them involved taking on additional shifts, which hindered their ability to cope because it resulted in having less breaks. In the literature, workers described feeling burdened by colleagues when they had to support those with emotional difficulties as they worried about offering appropriate advice (Billings et al., 2021b; Newman et al., 2021).

Factors related to the individual themselves which HSCWs identified as impacting their ability to cope included decision-making and responsibilities, internal and external impactors. Not having the appropriate skills and competence to make certain decisions or complete certain tasks made it difficult for workers to cope, especially when redeployed to an unfamiliar working environment. This is in line with the literature which found that receiving training for necessary skills, including PPE use, facilitated coping (Dyson and Di Lamb, 2021; McFadden et al., 2021). Participants described how they experienced moral injury due to the lack of clear guidance and PPE supplies impacting the way they provided care. Having

to follow guidance which they disagreed with made it difficult for them to cope because this interfered with their ability to deliver the level of care they felt morally obliged to provide. Moral injury has been highlighted in the literature as a significant concern for HSCWs during Covid-19 (Greenberg and Tracy, 2020).

Factors outside of the individual which impacted their ability to cope included the public taking Covid-19 seriously and stigma. Witnessing the public disregarding Covid-19 regulations hindered coping by making HSCWs feel less safe and angry, which was echoed in the literature (Aughterson et al., 2021). HSCWs experienced stigma from others because of their occupation because others felt less safe around them, which hindered coping. Examples included a landlord refusing contract renewal and not being invited to social gatherings. Stigmatisation from others for being a HSCW during Covid-19 has been found to hinder coping (Greene et al., 2021; Yufika et al., 2021). Taylor and colleagues (2020) found that fear and avoidance of healthcare workers was widespread during Covid-19.

Factors from within oneself which impacted on coping included feeling valued, feeling helpful and the individual's outlook and temperament. Feeling valued by their organisation and the public was a key factor that had a positive impact on workers coping experiences. Not feeling heard by their organisation made HSCWs feel undervalued which negatively impacted their ability to cope. This supports findings from previous pandemics (Bensimon et al., 2007; Guimard et al., 1995). Participants would have appreciated being recognised appropriately for their efforts during Covid-19. Support from the public helped boost morale and facilitated coping because it made workers feel valued. This is mirrored in other studies conducted during Covid-19 which found that support from the public resulted in HSCWs feeling appreciated and empowered by their communities (Sun et al., 2020; LoGuidice and Bartos, 2021; Chemali et al., 2022). The current study found that individual outlook and temperament impacted coping. Being optimistic and future-orientated were

found to facilitate coping, while experiencing feelings of bitterness and anger hindered coping. Research has shown that positive emotions play a crucial role in enhancing coping resources for individuals experiencing negative events (Tugade et al., 2004).

Systemic and individual factors influenced HSCWs' sense of safety which had a significant impact on coping, thus safety was represented as an outcome in the model. Concerns about safety were exacerbated by staff illness, lack of PPE supplies, inconsistent guidance and little communication from the organisation and management. Other factors related to safety which helped workers cope included gaining knowledge about Covid-19, following infection control procedures, regular testing and access to a vaccine. Studies from previous pandemics highlighted that fear of contamination and of colleagues falling ill was a significant cause of distress amongst healthcare workers (Shih et al, 2007; Raven et al., 2018; Chung et al., 2005).

As HSCWs reflected on their journeys throughout the first year of the Covid-19 pandemic, certain factors changed over time which impacted their ability to cope. All healthcare workers stated that staff illness was greater during the second wave and most reported this resulted in greater workloads during this period. A care worker explained that in the care home they experienced one wave only, therefore staff illness and workload were greater during that period. Experiences of support offered varied between services. Some participants were offered more support during the first wave while others were offered more support during the second wave as management had more time to organise this than during the onset of the crisis. Billings and colleagues (2021b) found that having support offered and then taken away made HSCWs feel undervalued. Workers would appreciate consistency in support offered. With regards to energy levels and attitudes, the novelty of the pandemic during the first wave was met with greater energy as managing the crisis was perceived as a challenge. However, by the second wave the novelty had worn off and participants described

feeling exhausted from the relentlessness of their workloads. There is a lack of research which focuses on the changes over time of the experiences of frontline workers during Covid-19.

HSCWs recognised that they struggled to cope at times and spoke about the support they were offered but reflected on the many barriers to accessing support. An organisation can directly impact on the coping experiences of staff by offering them different forms of support, as this will increase the perceived coping resources staff have available to them when facing a stressor (Lazarus and Folkman, 1984). There was a striking variety of experiences amongst the participants, with some reporting that they had not been offered any form of support by their organisation. Even when support was offered, some participants reported that there was a lack of awareness about available support and perceived that it was not easily accessible. HSCWs highlighted work-related barriers made it difficult to access support. This resulted from greater staff illness causing an increase in workloads and leaving staff with less time to access support during working hours. HSCWs assumed that they would have to access support during their non-working hours which they did not want to do as personal context and family responsibilities were considered another barrier to accessing support. This finding is echoed in another study whereby staff explained how support was usually offered during working hours which made it difficult to access because they did not have the time during the workday to attend (Billings et al., 2021b). The importance of making support easily accessible for staff was echoed in other studies on Covid-19 (Daniels et al., 2021; Dyson and Di Lamb, 2021). There were barriers directly related to the support offered. Some participants did not understand the various options available, particularly when there were many, and described feeling overwhelmed by them, while others perceived the type of support being offered was not helpful for them. Some participants did not think they were eligible for the support being offered. For example, a mental health worker who was

involved in offering psychological support services to other staff did not think she was eligible to access support being offered by her organisation. Also, social care workers who were not employed by the NHS were unable to access a great deal of support being offered by organisations and the public because they were not eligible. The findings of this study suggest that organisations would benefit from making support easily accessible and equitable for all staff.

Strengths and Limitations

The results of the current study should be considered within the context of its strengths and limitations. Although there has been a surge in research focusing on the experiences of HSCWs during the Covid-19 pandemic, to the knowledge of the research team none have focused on developing an explanatory model outlining the individual and social processes that influence their coping experiences. Thus, a strength of the current study is that it addressed this research gap using grounded theory methodology. Another strength was that the interview schedule was shared with clinical and academic trauma experts who provided feedback to ensure face validity as well as a healthcare and a social care worker who provided feedback to ensure suitability and appropriateness of questions. The primary researcher reflected on what was said after each interview and adapted the interview schedule to explore emerging themes (Charmaz, 2006). Initial coding tables for the first eight interviews were peer-reviewed by the primary supervisor, who provided frequent supervision. The draft of the model was also presented to academics conducting similar research as a form of validity check. The sample was diverse in terms of the settings participants worked in which suggests the current proposed model could be transferrable to a wide range of healthcare settings. Another strength was conducting the interviews from one year after the first peak of the first wave as this gave HSCWs ample time to reflect on their experiences and understand what helped and did not help them to cope. Finally, we

endeavoured to meet all the quality criteria outlined by Elliot and colleagues (1999) for qualitative research including acknowledging the primary researcher's own perspective and using memo writing to maintain self-reflexivity.

A limitation of the current study is the lack of diversity in the sample in terms of profession, gender, ethnicity and regions worked in. Only one participant was male and three were not white British. The sample was made up predominantly of nurses, although they worked in different settings, and only one social care worker was interviewed. All participants were based in England, none were from other countries within the UK. Workers in these regions might have had different experiences as they worked in different healthcare systems. The lack of diversity regarding gender, ethnicity, region and lack of social care workers represented in the sample limits the transferability of results. Another limitation was that although theoretical sampling was aimed for, it was not possible to implement because of the difficulty in recruiting participants, especially social care workers. Purposive and snowball sampling were mostly used. Another limitation is that it was not always possible to complete initial coding of each interview before conducting the next one as is preferred in grounded theory (Sbaraini et al. 2011). Although the model was presented to academics with expertise in the area, it was not shown to the participants. It would have been helpful for the model to be validated by them. As the findings of the current study are only related to UK-based health and social care workers, the results are limited in their transferability to HSCWs based in other countries experiencing a different context.

Implications

The current study highlighted important implications for future practice and research. Regarding future practice, this grounded theory model of the factors that impact coping facilitates the understanding of HSCWs' experiences working in the frontline of a pandemic and can assist in the development of effective support to better help staff when facing future

health crises. The model has highlighted there are many variables which facilitate and hinder coping. Organisations can target different factors when providing support to relieve distress and make it easier for HSCWs to cope. To begin with, when considering personal context, the government could offer support to frontline HSCWs' families to help ease distress caused by greater homelife demands, such as increased caring responsibilities. For example, governments can assist with managing caring responsibilities by keeping nurseries and schools open for children of frontline staff. There are many factors related to the system and individual that can also be targeted. The government and healthcare organisations can take necessary measures to ensure they are appropriately resourced. A key resource to help facilitate coping is ensuring adequate staffing levels. The NHS was already understaffed before Covid-19 (Wilkinson, 2015; Millar, 2021), due to challenging work conditions, long hours and burnout. Organisations can improve staff retention by improving staff pay, offering opportunities for flexible working and embedding compassionate and inclusive leadership (The King's Fund, 2022). To help alleviate burnout, workloads need to be manageable and staff should be given sufficient rest breaks. Organisations should prioritise the provision of adequate safety equipment to facilitate coping by helping HSCWs feel safe. Guidance should be driven by the evidence-base and all organisational communication to staff needs to be clear and consistent. Communication should be two-way with staff and organisations would benefit from putting mechanisms in place to facilitate regularly receiving feedback and input from staff. More collaboration and consultation with staff would be appreciated and facilitate coping by making them feel heard. Managers should be visible and available for staff to feel like they can approach them when needed. Competing demands between work and home life should be acknowledged by managers who should support staff in taking time off when needed. Staff peer support should be encouraged and can be facilitated by ensured protected time during working hours.

Regarding individual-related factors that influence coping, relevant training should be offered to help support staff when taking on additional responsibilities and complex decision-making should be shared. Strategies to help staff who faced morally injurious situations include encouraging shared team decision-making, preparing them for likely events, identifying psychological distress early and offering specialist support (Greenberg et al., 2020). Redeployed staff will require more support than others as they will be working in unfamiliar environments. Implementing changes that improve working conditions will help staff feel valued, facilitating coping. Implementing policies that would encourage the public to follow protective regulations would help HSCWs feel safer.

Providing practical and emotional support to HSCWs will facilitate coping. By offering support to HSCWs, organisations will increase the perceived resources a staff member has available to them when facing a stressor, which will make them feel more able to cope (Lazarus and Folkman, 1984). Systemic barriers to accessing support need to be tackled because support offered needs to be easily accessible. Providing staff with protected time during working hours to access support services. Support offered also needs to be consistently communicated to staff through more assertive outreach to raise awareness of what is being offered and engage them. Providing a variety of options which accommodate flexibility and personal preference would be beneficial. Providing adequate information about all support options will help staff feel less overwhelmed by the options and allow them to make an informed decision. There should be equity of access for different teams, services and across professions. Mental health and social care professionals in particular should be eligible and aware of support services.

Regarding future research, as the current study was only able to recruit one social care worker and there is a lack of research focusing on this occupational group, further research focusing exclusively on the experiences of social care workers is warranted. Future research

which focuses on the coping experiences of HSCWs in Wales, Scotland and Northern Ireland should be undertaken as they were not represented in the current study. Future research could also evaluate coping experiences of HSCWs using quantitative methodologies. Scales that measure coping such as the COPE (Carver, 1997) and Coping Strategies Questionnaire (Folkman and Lazarus, 1980) could be used to assess this. Future research could also focus on evaluating the efficacy of different strategies implemented to try to improve coping experiences of HSCWs. For example, if a trust decides to implement a 30-minute per workday break time for workers to access support, a study could be conducted which compares the coping experiences of those workers versus workers who are not given protected time to access support. Future qualitative research could focus on one of the key factors (theoretical codes) identified and delve deeper into understanding the particular nuances of this factor's relationship with coping experiences.

Conclusion

The current study provides an in-depth analysis of the factors that facilitated and hindered the coping experiences of frontline HSCWs during the first year of Covid-19 and illustrates how they inter-relate by developing an explanatory model. The impact on help-seeking was also explored. The results of this study show that there are numerous factors related to the system as a whole and the individual which can impact on coping. Therefore, a "one-size fits all" approach to offering support would be unhelpful. It is hoped that by identifying the various factors that impact on HSCWs coping experiences and help-seeking behaviours, strategies can be developed and implemented to better support this occupational group when facing future health crises.

4. Integration, Impact and Dissemination

Integration

The systematic review chapter of this thesis aimed to aggregate and synthesis all the factors identified that impacted the coping experiences of HSCWs working in the frontline in the UK during the Covid-19 pandemic. The empirical study then aimed to develop a theoretical model illustrating the factors that facilitated and hindered the coping experiences of UK-based frontline HSCWs during the Covid-19 pandemic. I hoped that together the systematic review and empirical study would combine to provide a more detailed understanding of the coping experiences of UK-based frontline HSCWs when facing a pandemic or extreme health crisis. I wanted to shed light on what did and did not help them to cope while working in the frontline during Covid-19 to assist in the understanding of how they can best be supported when facing future pandemics or health crises. I felt the empirical study followed nicely after the systematic review as they were connected in terms of subject matter. The empirical study added to the findings of the systematic review by designing the study to focus solely on coping experiences, which many of the included studies in the systematic review did not do as most focused on understanding distress rather than coping. Another distinction is that the empirical study used grounded theory methodology to pool together findings and develop an explanatory model of coping. There are similarities and differences between the findings of the systematic review and the empirical study.

The main similarity between the findings was the overlap between some of the themes identified. The findings that fell within the theme of work-related stressors in the systematic review are similar to the findings within the theme of resources and decision-making and responsibilities in the empirical study. The factors related to these themes included staffing

levels, increased workload and having to make more complex decisions. The theme of safety concerns was identified and discussed by both sections which included adequate PPE as a factor that impacted sense of safety. The theme of communication and leadership in the systematic review is similar to the factors identified within the organisational response and management theoretical codes which discussed the impact of communication and guidance on HSCWs ability to cope. The factors represented by the theme of support structures in the systematic review was similar to the factors within the colleagues and personal context theoretical codes in the empirical study. They both highlighted the impact supportive relationships with managers, colleagues, friends and family had on coping and the importance for HSCWs to be able to access personal support networks. The theme of individual differences and personal context identified in the systematic review is similar to the personal context and individual temperament and outlooks codes in the empirical study. Both sections identified and discussed the impact of an individual's personal circumstances and their general outlook on their coping experiences. Another key similarity is that both the systematic review and empirical study found feeling valued was a factor that had a significant impact on coping experiences.

The main difference between the systematic review and empirical study was the use of grounded theory methodology. The empirical study took a novel approach compared to the included studies in the systematic review by identifying patterns of psychological experiences. This was achieved by illustrating how the different factors that impacted coping related to each other, instead of only identifying them which is what the studies in the systematic review did. Another difference between the sections was in some of the findings. While the systematic review identified finding purpose and meaning in their work a key factor that impacted the coping experiences of HSCWs during Covid-19, this was not identified in the empirical study. The only factor from the empirical study that could be

considered as slightly related is feeling helpful. Another significant factor which was only identified in the empirical study but not the systematic was feeling heard. I was surprised that feeling heard had not been discussed in previous studies as many participants in the empirical study discussed the importance of feeling heard by their organisation and how being heard made them feel valued. Another difference between both sections was that although the empirical study aimed to shed light on the coping experiences of UK-based HSCWs, I only ended up recruiting participants that were based in England and did not hear from HSCWs in Wales, Scotland or Northern Ireland. The studies included in the systematic review included participants from all over the UK.

The empirical study was completed before the systematic review. I planned to complete the sections in this order because the research related to Covid-19 was fast emerging and I wanted to ensure that I included the most up-to-date and recent studies in the systematic review. Glaser and colleagues (1968) originally proposed that when using grounded theory, the literature review should be done after the completion of data collection and analysis in order to allow the research to focus on the data itself without having any preconceived notions. Although I did not complete the sections in this order for this particular reason, I feel that not having an idea of what previous studies found but then learning that there were many similarities between the findings of my empirical study and previous research provides further validity of the results. More recently in the grounded theory literature there has been a move away from the view that a researcher can be prevented from building a theory based purely on observation by already having knowledge of the literature in that area (Thornberg, 2012; Thornberg and Dunne, 2019).

Challenges and reflections

The main challenge when conducting the empirical study was participant recruitment. Although many potential participants would contact me saying they were interested in taking part, they would not reply to my follow-up email containing the information sheet and consent form. This limited my ability to use theoretical sampling which is the preferred method of sampling in grounded theory. Theoretical sampling would have made it possible to ensure that participants from all countries in the UK were included and would have ensured greater diversity within the sample. To ensure that enough participants were recruited, I used purposive and snowball sampling and regularly promoted the study in Facebook groups for specific occupational groups. For example, a closed Facebook group of UK physiotherapists. Accessing these closed groups catering to specific professionals helped me a great deal to recruit participants. I also tried to explore whether I could promote the study on NHS sites, including the trust where I was on placement. I contacted the head of research for the trust and had a meeting with them. They told me that to promote the study on trust sites, I would have to complete NHS ethics which I no longer had time to do so I did not go ahead with this.

The main challenge when completing the systematic review was my lack of experience and knowledge about how to conduct one. Choosing to use a narrative synthesis approach felt appropriate because I wanted to include all types of studies and not limit to only studies using a certain type of methodology. I wanted to include all findings in this area.

Impact

The findings of the systematic review and empirical study have the potential to impact HSCWs, health and social care organisations, policy makers, psychological support services offering support to HSCWs and academics. Carrying out this research also had an impact on me.

Health and Social Care Workers

The findings of the systematic review and empirical study could have a direct and indirect impact for HSCWs. Workers may be indirectly impacted by the findings through support they receive from their organisation and the government. The findings have highlighted factors that influence how workers cope and these could be targeted when providing support or trying to implement changes that alleviate distress. For example, receiving clear and consistent communication from their organisation helped facilitate coping, therefore health and social care organisations may implement changes to improve communication with staff. In terms of direct impact, both studies included illustrative quotes which has helped give a voice to HSCWs. The qualitative studies have given workers a space for them to tell their stories in their own words.

Health and Social Care Organisations

The findings of the systematic review and empirical study indicate that there are many factors that impact coping which are related to organisational response as a whole and management. For organisations, the findings add to the understanding of what staff would find helpful and this could help guide improvements and changes where necessary. Organisations would benefit from taking into consideration how consistent two-way communication, providing clear guidance, ensuring adequate PPE supplies and staffing levels could have a direct positive impact on how HSCWs cope. These are some of the ways organisations can help support their staff and these findings were also echoed in previous research (Pappa et al., 2021; Newman et al., 2021). Organisations can implement changes to policy, organisational structure and ways of working to help make improvements in these areas in order to better support staff. Ensuring communication is two-way between management and staff will make staff feel heard. Communicating with staff directly in order

to understand they challenges they are facing and what their needs are will help organisations learn how to support them better. Providing clear guidance and ensuring adequate PPE supplies will help reduce safety concerns. Ensuring adequate staffing levels will help keep workloads manageable. Organisations can take necessary steps to ensure positive changes are made to support their staff better. Organisations can also benefit by familiarising themselves with the barriers to accessing support highlighted by HSCWs so that they can work on addressing these issues.

Managers within health and social care institutions can also benefit from the findings because by understanding what factors impact the coping experiences of staff, they will also learn about how to better support them. Understanding the factors related to management specifically that HSCWs identified as impacting their ability to cope will benefit managers because they will be able to directly make improvement in this area. The inclusion of illustrative quotes in both studies will help convey to managers the sentiments of staff in their own words. Managers would benefit from taking into consideration how regular communication, supportiveness, empathy and visibility from managers were identified as factors that facilitated coping. If necessary, managers can make changes to try to improve on these aspects to alleviate distress for staff. Managers could also get involved with trying address the barriers to accessing support identified by HSCWs. Managers could act as advocates for their teams to try to make is easier for them to access the support they need.

Psychological Support Service Providers

The findings of both the systematic review and empirical study can benefit the mental health clinicians who provide psychological support services for HSCWs. Participants in both studies mentioned how they found emotional support helpful during the Covid-19 but spoke about many barriers to accessing support. It would be beneficial for mental health workers to

have a greater understanding of the barriers to accessing support such as availability, time, awareness, accessibility and understanding of options. As they would be able to directly address some of these barriers. Mental health workers would benefit by offering support that is flexible and caters to different preferences, including individual, group, peer-led and expert-led interventions (Billings et al., 2021b). Making the psychological support services more easily accessible will allow more HSCWs to benefit from these services. It would also be beneficial for mental health workers to gain a greater understanding of the factors that impact on HSCWs ability to cope as these can be addressed in treatment or included in formulations. Another barrier to accessing support that was identified was trust, therefore mental health support workers responsible for setting up these support services would benefit from ensuring they provide both in-house and external support options.

Policy Makers

The findings of the systematic review and empirical study can benefit policy makers by informing national policy. Changes in national policy could impact the work-related and personal life stressors HSCWs identified as impacting coping. National policies related to education and childcare services, such as closing school and nurseries, directly impacted HSCWs with families. Many HSCWs spoke about how their responsibilities increased both at home and work during the Covid-19 pandemic. It became increasingly difficult to manage the demands from both and to maintain boundaries between home and work life. By offering more support to frontline HSCWs and their families, policy makers can help make it easier for them to cope while working in the frontline of a pandemic. National policy outlining infection prevention and control measures are necessary to reduce the risk of transmission during a pandemic. By making these policies clear and consistent for the public to follow they could improve adherence to these measures which will help facilitate coping for

HSCWs. Ensuring effective infection prevention and control policies are adhered to will help HSCWs by reducing the number of people that become infected and decreasing their safety concerns. Policy makers within the NHS would also benefit from the findings from both studies about how PPE supplies and guidance around PPE impacted the coping experiences of HSCWs. NHS policy makers can help their staff by ensuring that PPE guidance is evidence-based, clear and consistent. This will help staff feel more safe and able to trust the guidance.

Academics

The systematic review provides the first synthesis of evidence regarding the coping experiences of HSCWs in the UK. The study provided a timely review of all research in this specific area and included studies with all types of designs; qualitative, quantitative, mixed-methods and case series. The quality of the reviewed studies was generally acceptable. The narrative synthesis of the study findings provides academics with a comprehensive account of existing data on the coping experiences of UK-based HSCWs, from which comparisons and further research can be made. The synthesis identified seven distinct themes representing factors that impacted on coping. Future research could focus on taking this research further by examining each theme individually or researchers can use the findings to inform future studies more generally.

The empirical study provided a unique account of the experiences of UK-based HSCWs working in the frontline during Covid-19 by focusing on the factors that impacted coping and developing an explanatory model of how they inter-relate. While there is a great deal of emerging research focusing on the experiences of HSCWs during Covid-19, no previous study has aimed to develop an explanatory model outlining the underlying mechanisms of coping and how they are related. Therefore, the results of the empirical study

provide a valuable addition to the research. The findings of the empirical study are beneficial for academics and researchers because it can help guide the design of future studies. For example, future quantitative studies could be designed to evaluate the qualitative themes that emerged from the current study. Potential future research could involve evaluating the impact of changes implemented which target the factors that influence coping to assess whether they were effective.

Personal Impact

As a trainee clinical psychologist who also worked in the NHS throughout the Covid-19 pandemic, the research process had an impact on me too. The project taught me a great deal about research methodologies I had not used before and increased my awareness of the experiences of different HSCWs during the Covid-19 pandemic. It highlighted how experiences varied greatly which emphasised how a one-size-fits-all approach to providing support for this occupational group would not be suitable. I have always had an interest in trauma and was on a specialist trauma placement for a certain period while collecting data for the empirical study. Hearing the searing accounts of the difficulties HSCWs faced was upsetting at times and has fuelled my desire to promote how their working conditions and wellbeing could be improved. I was working in a team where colleagues were redeployed at one point and heard about their experiences when they returned. I have become increasingly interested in occupational trauma and the results of the research highlights to me the importance of having people's voices heard and documenting experiences so that they are not forgotten. It is important to remember and learn from all that happened to HSCWs during the Covid-19 pandemic to ensure that when they are faced again with a health crisis in future, they are better supported through it by organisations that are better prepared.

Dissemination

Research Community

I have already presented the findings of the empirical study to academics within the COVID Trauma Response Working Group who are conducting similar research. I have also presented the findings to trainee and qualified clinical psychologists. I will focus on disseminating the findings of the empirical study. To disseminate the findings of the empirical study to the research community, I plan on submitting the study to a peer-reviewed journal for publication and on potentially presenting at a relevant conference. It is important for the study findings to reach academics, researchers and practitioners and add to the evidence-base. Therefore peer-reviewed journals such as the European Journal of Psychotraumatology (impact factor= 3.020) or the Journal of Occupational Health (impact factor = 2.708) will be considered for submission. The European Journal of Psychotraumatology publishes papers which aid in the understanding, prevention and treatment of stress and trauma. It has previously published papers related to the trauma and resilience experienced by HSCWs. Potential conferences where the study findings could be presented will depend on the audience and theme. Conferences related to Covid-19, trauma, resilience or occupational stress would be suitable. For example, these could be conferences organised by the European Society for Traumatic Stress Studies (ESTSS) and the UK Psychological Trauma Society (UKPTS).

Clinical Community

By publishing the findings of both the systematic review and empirical study in a peer-reviewed journal, it is hoped that the clinical community will have access to the results. In addition, the findings will be disseminated to the clinicians within the COVID Trauma Response Working Group as they all work in specialist trauma services or within services that offer staff support across the UK. They will be emailed a summary of the findings.

Additionally, if it is of interest to additional teams and stakeholders that the project supervisors and myself know, a summary of the findings could also be sent to them.

Health and Social Care Workers

A lay summary of the empirical study key findings will be developed in consultation with HSCWs and sent to participants who took part in the study. Additionally, if the study is accepted and published in a peer-reviewed journal, the published version of the study will be sent to the HSCWs who took part. Many of the participants requested that any published papers related to the study be sent to them.

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Appendices

Appendix A: Measures Used in Included Studies

For the quantitative and mixed-methods studies, the following measures were used:

Burnout

- Copenhagen Burnout Inventory (CBI; Kristensen et al., 2005) is a 19-tem self-reported scale with three subsections assessing personal, work-related and client-related burnout. The CBI was used in one study (Gemine et al., 2021).
- Maslach Burnout Inventory (MBI; Maslach et al., 1997) is a 22-item self-reported questionnaire with three subsections assessing emotional exhaustion, depersonalisation and personal accomplishment. The MBI is used in one study (Pappa et al., 2021).

Perceived Stress

- Perceived Stress Scale (PSS; Cohen et al., 1988) is a 10-item self-reported scale used to measure the perception of stress. The PSS was used in one study (Gemine et al., 2021).

PTSD, Depression and Anxiety Symptoms

- International Trauma Questionnaire (ITQ; Cloitre et al., 2018) is an 18-item self-reported questionnaire that assesses PTSD symptom presence and severity over the past month. The ITQ was used in one study (Greene et al., 2021).
- Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001) is a 9-item self-reported screening tool for depression which assesses symptom severity over the last two weeks. The PHQ-9 was used in two studies (Greene et al., 2021; Pappa et al, 2021).
- Generalised Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006) is a 7-item self-reported screening tool for anxiety which assess symptom severity over the last two weeks. The GAD-7 was used in two studies (Greene et al., 2021; Pappa et al, 2021).
- Numerical Fear Rating Scale (NFRS; Ahorsu et al., 2020) is a numeric version of a visual analog scale which is used to assess level of fear. The NFRS was used in one study (Pappa et al., 2021).

Insomnia

- Athens Insomnia Scale (AIS; Soldatos et al., 2000) is an 8-item self-reported scale that assesses and quantifies sleep difficulty over the last month. The AIS was used in one study (Pappa et al., 2021).

Wellbeing

- Short Warwick Edinburgh Mental Wellbeing Scale (WEMWBS; Stewart-Brown et al., 2009) is a 7-item self-reported scale that assesses wellbeing. This scale was used by one study (McFadden et al., 2021).

Quality of Life

- The work-related quality of life scale (WRQOL; Van Laar et al., 2007) is a 24-item self-reported scale that assesses the respondents' quality of working life. The WRQOL was used in one study (McFadden et al., 2021).

Coping

- Brief COPE scale (Carver, 1997) is a 28-item self-reported scale where respondents indicate how often they have been using 14 different coping strategies. One study used this scale (McFadden et al., 2021).
- Clark, Michel, Early and Baltes scale (Clark et al., 2014) is a 15-item self-reported scale that measures how often a respondent has used five specific coping strategies. One study used this scale (McFadden et al., 2021).

Resilience

- Resilience Scale-14 (RS-14; Wagnild and Young, 1993) is a 14-item scale which measures levels of resilience. The RS-14 is used in one study (Pappa et a., 2021).

Appendix B: Quality ratings using MMAT (2018) checklist

Qualitative Studies

Qualitative Studies							
	Author	1.1. Is the qualitative approach appropriate to answer the research question?	1.2. Are the qualitative data collection methods adequate to address the research question?	1.3. Are the findings adequately derived from the data?	1.4. Is the interpretation of results sufficiently substantiated by data?	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Total Score
1	Aughterson et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
2	Billings et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
3	Billings et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
4	Daniels et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
5	Dyson and Di Lamb (2021)	Yes	Yes	Can't tell	Can't tell	Yes	60
6	Newman et al. (2021)	Yes	Can't tell	Yes	Yes	Can't tell	60
7	Plessas et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
8	Spiers et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
9	Walker and McCabe (2021)	Yes	Yes	Can't tell	Can't tell	Yes	60

Quantitative Studies

Quantitative Descriptive Studies							
	Author	4.1. Is the sampling strategy relevant to address the research question?	4.2. Is the sample representative of the target population?	4.3. Are the measurements appropriate?	4.4. Is the risk of nonresponse bias low?	4.5. Is the statistical analysis appropriate to answer the research question?	Total Score

1	Cipolotti et al. (2021)	Yes	Yes	Can't tell	Yes	Yes	80
2	Greene et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
3	McFadden et al. (2021)	Yes	Yes	Yes	Yes	Yes	100
4	Pappa et al. (2021)	Yes	Yes	Yes	No	Yes	80

Mixed Methods Studies

Mixed Methods Studies							
	Author	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	5.2. Are the different components of the study effectively integrated to answer the research question?	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	Total Score
1	Cubitt et al. (2021)	Yes	Yes	Yes	Can't tell	Yes	80
2	Gemine et al. (2021)	Yes	Yes	Yes	Can't tell	Yes	80

Appendix C: University College London Ethics Approval

Sunday, June 12, 2022 at 14:18:59 British Summer Time

Subject: [EXT] APPROVED Ethics Amendment and Extension Request - Re Project 18341/001
Date: Wednesday, 17 March 2021 at 15:02:34 Greenwich Mean Time
From: VPRO.Ethics
To: Billings, Jo
CC: Soubra, Karina (2019), Millie Tamworth, Kamal, Zeast
Attachments: Amendment_Approval_Request_Form_Psycho-social Support for High-Risk Groups in Response to COVID-19 31.01.21 Amended 08.03.21.docx, Ethics Application Form (High Risk) - Psychosocial Support for High Risk Groups in Response to COVID19 - FINAL with additions 08.03.21.docx

Dear Jo

Thank you for your responses and updates. The UCL REC has approved your attached amendment (to include the addition of one further quantitative measure in the final data collection point for the survey) and extension request to **21st May 2022**. Please take this email as confirmation of that approval.

IMPORTANT: For projects collecting personal data only
You should inform the Data Protection Team – data-protection@ucl.ac.uk of your proposed amendments, including requests to extend ethics approval for an additional period.

With best wishes, Helen

Helen Dougal
UCL Research Ethics Co-ordinator
Office of the Vice-Provost (Research)
University College London
2 Taviton Street, London, WC1H 0BT
Email: ethics@ucl.ac.uk

Please note that I work from home on **Fridays.** My contact details for each day are as follows:
Monday/Tuesday/Wednesday/Thursday: 020 7679 8717 | (Internal extension 28717)
Friday: 07738 009997

Appendix D: Royal Holloway University Ethics Approval

Ethics Review Details

You have chosen to submit your project to the REC for review.	
Name:	Soubra, Karina (2019)
Email:	NHJT002@live.rhul.ac.uk
Title of research project or grant:	Health and social care professionals' experiences of trauma and resilience while working in the frontlines during the COVID-19 pandemic one year on
Project type:	Royal Holloway postgraduate research project/grant
Department:	Psychology
Academic supervisor:	Professor Dawn Langdon
Email address of Academic Supervisor:	d.langdon@rhul.ac.uk
Funding Body Category:	No external funder
Funding Body:	
Start date:	01/05/2021
End date:	01/09/2022

Research question summary:

The objective of the current project is to develop a grounded theory model to understand the factors which impact on risk and resilience to the traumatic impact of working during a pandemic for health and social care professionals. This will be done by focusing on the impact on this population of working in the frontlines of the COVID-19 pandemic over the last year. This model will aim to illustrate what particular factors made the pandemic difficult for health and social care professionals, how their mental health was impacted by the pandemic, the degree of help seeking that resulted and what type of support helped and did not help improve their mental health during this period. This model will be built on interviews that will be held one year after the peak of the first wave. A benefit of doing this is that health and social care professionals would have had the opportunity to reflect on and fully experience what helps and hinders their coping over the span of a year. Using grounded theory will help shed light on how the different factors inter-relate and the establishment of a theory in relation to this area would be helpful for future similar events.

Research method summary:

The study will be qualitative and exploratory in design, using semi-structured interviews with health and social care professionals, which will be conducted and analysed according to the principles of grounded theory. Grounded theory is justified for this study as I will develop a theoretical model within an area not well understood despite being very current and critical; the experience of working in the frontlines during a pandemic. While quantitative methods have been used to measure the prevalence of mental health difficulties in healthcare professionals during a pandemic, they do not allow for a detailed exploration of individuals' experiences in this unique situation. Grounded theory is considered an appropriate fit for the research aims because through its focus on reciprocal effects between social processes and individuals it enables the in-depth investigation of the impact of social situations and services on patterns of behaviour, resulting in the development of theories to explain behaviour. The development of a theory can help to further understand the processes for this population during a unique time of working through a pandemic.

The grounded theory approach is particularly useful for studying individuals' personal interpretations of their experience and emotions. In the context of health and social care professionals working during a pandemic, this is particularly applicable because the key processes underlying events individuals experience while at work treating others and being offered different types of support when being exposed to traumatic events at work are social processes (e.g. help-seeking, experience with help offered, continuously facing risk of infection from patients). The model developed will be grounded in data allowing for the suggestion of causal connections and can be used to aid understanding when developing support packages and resilience-building programs for healthcare professionals. This will facilitate improved support for this occupational group during a pandemic.

Risks to participants

Does your research involve any of the below?

Children (under the age of 16),

No

Participants with cognitive or physical impairment that may render them unable to give informed consent,

No

Participants who may be vulnerable for personal, emotional, psychological or other reasons,
Yes

Participants who may become vulnerable as a result of the conduct of the study (e.g. because it raises sensitive issues) or as a result of what is revealed in the study (e.g. criminal behaviour, or behaviour which is culturally or socially questionable),
No

Participants in unequal power relations (e.g. groups that you teach or work with, in which participants may feel coerced or unable to withdraw),
No

Participants who are likely to suffer negative consequences if identified (e.g. professional censure, exposure to stigma or abuse, damage to professional or social standing),
No

Details,
A potential ethical issue is the wellbeing of the participants. Asking health and social care workers about their mental health during the pandemic risks identifying untreated mental health problems. To mitigate this, participants will be signposted to appropriate sources of mental health support in both the information sheet and during the interview.

Design and Data

Does your study include any of the following?

Will it be necessary for participants to take part in the study without their knowledge and/or informed consent at the time?,
No

Is there a risk that participants may be or become identifiable?,
Yes

Is pain or discomfort likely to result from the study?,
No

Could the study induce psychological stress or anxiety, or cause harm or negative consequences beyond the risks encountered in normal life?,
Yes

Does this research require approval from the NHS?,
No

If so what is the NHS Approval number,

Are drugs, placebos or other substances to be administered to the study participants, or will the study involve invasive, intrusive or potentially harmful procedures of any kind?,
No

Will human tissue including blood, saliva, urine, faeces, sperm or eggs be collected or used in the project?,
No

Will the research involve the use of administrative or secure data that requires permission from the appropriate authorities before use?,
No

Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?,
No

Is there a risk that any of the material, data, or outcomes to be used in this study has been derived from ethically-unsound procedures?,
No

Details,
One ethical issue is the confidentiality of patients that participants might describe and identifiable information they might share of their colleagues, place of work or family members during the interviews, which will be recorded. The digital recordings of the interviews will be stored on a password-protected computer and saved using anonymous numbers as names to ensure confidentiality of the data. Once transcribed and checked, the original audio recording will be deleted. I will also ensure that all identifying features of the individual, their place of work, colleagues, patients and family members will be removed from the transcripts and from any quotes I might use in the final thesis write-up and dissemination.

By asking participants to recall their experiences working in the frontlines during the pandemic, they might become distressed. It could be distressing recalling and discussing negative experiences. To mitigate this, participants will be signposted to appropriate sources of mental health support in both the information sheet and during the interview.

Another potential ethical issue is if the rate of COVID-19 infections increases drastically again next year when the project/participant recruitment starts. The healthcare professionals may not have time or capacity to take part in a study. However, the trauma working group my external supervisor is a part of did manage to recruit healthcare professionals to take part in qualitative interviews during the peak of the first wave, therefore it is anticipated that recruitment will still be possible in this scenario as I will also be flexible about the scheduling and timings of the interviews in order to suit staff shifts.

Risks to the Environment / Society

Will the conduct of the research pose risks to the environment, site, society, or artifacts?,
No

Will the research be undertaken on private or government property without permission?,
No

Will geological or sedimentological samples be removed without permission?,
No

Will cultural or archaeological artifacts be removed without permission?,
No

Details,

Risks to Researchers/Institution

Does your research present any of the following risks to researchers or to the institution?

Is there a possibility that the researcher could be placed in a vulnerable situation either emotionally or physically (e.g. by being alone with vulnerable, or potentially aggressive participants, by entering an unsafe environment, or by working in countries in which there is unrest)?,
No

Is the topic of the research sensitive or controversial such that the researcher could be ethically or legally compromised (e.g. as a result of disclosures made during the research)?,
No

Will the research involve the investigation or observation of illegal practices, or the participation in illegal practices?,
No

Could any aspects of the research mean that the University has failed in its duty to care for researchers, participants, or the environment / society?,
No

Is there any reputational risk concerning the source of your funding?,
No

Is there any other ethical issue that may arise during the conduct of this study that could bring the institution into disrepute?,
No

Details,

Declaration
By submitting this form, I declare that the questions above have been answered truthfully and to the best of my knowledge and belief, and that I take full responsibility for these responses. I undertake to observe ethical principles throughout the research project and to report any changes that affect the ethics of the project to the University Research Ethics Committee for review.

Certificate produced for user ID, NHJT002

Date:	06/04/2021 21:04
Signed by:	Soubra, Karina (2019)
Digital Signature:	Karina Soubra
Certificate dated:	06/04/2021
Files uploaded:	Participant Information Sheet.docx Poster.png Study Adverts.docx Sociodemographic form.docx UCL Ethics Approval Confirmation.docx Ethics Application Form - Psychosocial Support for High Risk Groups in Response to COVID19 - FINAL with additions 08.03.21.docx Amendment_Approval_Request_Form_Psycho-social Support for High-Risk Groups in Response to COVID-19 31.01.21 Amended 08.03.21.docx Interview Schedule.docx Consent Form.docx Consent form (PLEASE IGNORE THE OTHER CONSENT FORM DOC).docx

Appendix E: Semi-Structured Interview Schedule

Interview Schedule

1) Tell me about what your work was like before the COVID-19 pandemic?
    a. How was it in the period leading up to the outbreak in the UK?

2) Tell me about how your work was impacted by the COVID-19 pandemic a year/ year and a half ago during the first wave?
    a. Were you redeployed?
        i. If yes, what was that like?
            I. Did you have a choice in your redeployment?
            II. When were you redeployed?
            III. Where were you redeployed to?
        ii. If yes, how much support were you given for your redeployment?
            I. What was your experience of receiving additional training/education?
            II. What was your experience of getting an orientation to the new service?

3) What was it like working at your service during the first wave?
    a. How did you feel about continuing to work during the first wave?

4) What were your experiences of management during the first wave?

5) How did you feel about interacting with patients who had COVID-19?

6) What factors made it easier and more difficult to work during the first wave?
    a. How did you initially cope with the difficulties?

7) What was your experience like of working during the first recovery period (after the first wave)?
    a. How was it different to the first wave?
    b. If you were redeployed, what was it like returning to your actual role?

    Did you participate in any of the various research studies involving Covid-19?

i. *If yes, what made you want to take part?*

8) Tell me about your experience in the run up to and then working during the second wave?
   a. Were you redeployed again?
   b. How was it different from the other periods?
   c. How were you feeling in the run up to the second wave?
      i. Did you feel better equipped to deal with it after all you had already experienced?

9) What made you feel more or less safe doing this work over the course of the pandemic?

   Did you carry out weekly or twice weekly lateral flow testing?
   Did you receive the vaccine in the first wave of the vaccination program (which was within the period of December 2020 to January 2021)?
      i. *What was the impact of having the vaccine on how you felt about your work?*
   Did you have access to a meaningful personalised Covid-19 risk assessment to inform your redeployment or work options?
      i. *What impact did this have on your experience?*

10) How has working during the pandemic impacted on your mood and wellbeing?
   a. How has your mood and wellbeing changed over the course of the pandemic?

11) Can you tell me about how your personal life has been impacted by you continuing to work during the pandemic?

12) Did you have to make any difficult decisions while working during the pandemic?
   a. What made it easier, or harder, to make these decisions?
   Were there any potential patient bereavements involved or that had to be considered?

13) What role did colleagues have for you during this period?

14) Was any support offered to you during the course of the pandemic?
   a. In what period was support most offered?
   b. In what period was support least offered?

15) What type of support was offered to you?
   a. Emotional support?
   b. Practical support, e.g. free parking?

c. Group-based support or individual-based support?

16) Was the type of support you were offered appropriate in relation to what you were experiencing?

17) Did you access any of the support that was offered to you?
    a. If yes, what was your experience of accessing the support?
    b. If no, why not?

18) Was there anything that stopped you or got in the way of you accessing support?

19) Did you provide support to others during this time?
    a. Who did you provide support to?
    b. What type of support did you provide?
    c. What was the impact on you providing this support?

20) Did you access any other type of support elsewhere?

21) What type of support did you find most helpful?

22) What type of support did you find least helpful?

23) What type of support do you feel would have been helpful for you at the time?

24) What else, if anything, has helped you to cope during the pandemic?

25) What, if anything, has got in the way of your ability to cope?

26) Looking back now, what advice would you give to yourself to help you to cope with this?

    a. Is there anything that you might have needed that would have helped you to navigate this time?

27) What advice would you give to healthcare planners about how best to support frontline staff?
    a. If you were planning the services that will be providing psychological support for health and social care workers during such a health crisis, what would you like them to include?

28) What, if anything, did you learn during this time of working during the pandemic?
    a. About yourself
    b. Others
    c. The world

29) Is there anything else that you would like to tell us?

Appendix F: Sociodemographic Form

Sociodemographic Form

Please state your gender:

☐ Female

☐ Male

☐ Other

☐ Prefer not to say

Please state your ethnic group:

☐ Asian or Asian British

☐ Black, African, Black British or Caribbean

☐ Mixed or multiple ethnic groups

☐ White

☐ Another ethnic group

☐ Prefer not to say

Please state your professional group:

☐ Administrator

☐ Care home worker

☐ Cleaner

☐ Doctor - Consultant

☐ Doctor - Junior

☐ Healthcare assistant

☐ Mental Health care worker

☐ Nurse

☐ Occupational Therapist

☐ Physiotherapist

☐ Paramedic

☐ Other Allied Health profession not specified

☐ Porter

☐ Other

Please specify: _____

Please select which settings you worked in during the pandemic (*select all that apply)*:

☐ Accident & Emergency (A&E) Department

☐ Acute ward

☐ Ambulance service

☐ Care home

☐ Community setting

☐ General Hospital / COVID Wards

☐ ICU

☐ Nightingale hospital

☐ Older Adult Wards

☐ Psychiatric inpatient setting

☐ Radiology

☐ Rehabilitation ward

☐ Other

Please specify: _____

Please select which region you worked in during the pandemic:

☐ England - South East

☐ England - London

☐ England - South Central

☐ England – South West

☐ England - Midlands

☐ England - North East

☐ England - North West

☐ Scotland

☐ Wales

Appendix G: Empirical Study Recruitment Poster

Appendix H: Participant Information Sheet

Institute of Mental Health

Participant Information Sheet

Psycho-social Support for High-Risk Groups in Response to COVID-19

Frontline health and social care staff experiences of psycho-social support during the COVID-19 pandemic - One Year On

You are being invited to take part in a research project. Before you decide whether to take part it is important for you to understand why the research is being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Please take time to decide whether or not you wish to take part. Thank you for reading this.

If you have any questions about any aspect of the research process you can contact the Lead Researcher, Karina Soubra, on karina.soubra.2019@live.rhul.ac.uk. If you have any questions about data protection, please contact the data protection officer Alex Potts on a.potts@ucl.ac.uk.

What is the project's purpose?

Health and social care workers continue to be at the frontline of the response to COVID-19 and have been identified as being at particularly high risk for negative mental health outcomes both in the short and long term. NHS trusts and hospitals have been implementing a variety of methods of providing psychosocial support to staff, however, there is little research investigating what staff experiences and views of support over time.

The aim of this study is to explore frontline health and social care staff's experiences of working on the pandemic over the past year and their views about psycho-social support provided.

Why have I been chosen?

You have been invited to take part in this study as you are a frontline healthcare (doctor, nurse, physiotherapist, pharmacist, receptionist, porter, cleaner or any other professional working in frontline healthcare services) and social care workers. We are interested in your experiences of working on the pandemic over the past year and your views of psycho-social support provided to frontline health and social care workers during this crisis.

Do I have to take part?

Taking part in this study is entirely voluntary. If you do decide to take part, you will be asked to electronically sign a consent form and return it to the researcher. You can withdraw your consent to take part up until one week after the interview, at which point your data will have been anonymised and included in the analysis and it will not be possible to retract the information.

What will happen to me if I take part?

You will be invited to take part in a one-off interview, lasting up to an hour. The interview will take place at a time convenient to you and will be conducted remotely, over telephone or Microsoft Teams as you prefer. The interviews will be audio-recorded and subsequently transcribed by the interviewer. No identifying details of you or your place of work will be included in the transcripts. Once transcribed and checked, the original audio recording will be deleted.

What do I have to do?

If you decide you would like to take part in this study, please contact the lead researcher, Karina Soubra on karina.soubra.2019@live.rhul.ac.uk . You will be sent a consent form to complete and return electronically. We will then arrange a convenient time for you to take part in the interview.

What are the possible disadvantages and risks of taking part?

You will be asked about your experiences of working on the frontline response to the COVID-19 pandemic over the past year and your views about psycho-social support for staff. Some of your experiences may have been difficult and talking about this could be distressing. You will be able to take breaks if needed and can pause and continue the interview at another time if preferred. You do not have to answer any questions if you do not wish to. Should you continue to feel distressed then the researcher will be able to signpost you to relevant sources of support.

Where can I get help if I become distressed?

Should you become aware of experiencing psychological distress at any point during the research process you can:
Call the National **NHS Helpline** on **0300 131 7000**
For support via text messages, text **FRONTLINE** to **85258**
Contact your GP for support and to access local Psychological Therapy Services

What are the possible benefits of taking part?

Whilst there are no immediate and personal benefits for the people participating in the project, it is hoped that this work will inform future guidance about how best to support frontline health and social care staff.

What if something goes wrong?

If you are unhappy with any aspect of the research process then please do contact the Principal Investigator, who is overseeing this research, Dr Jo Billings on j.billings@ucl.ac.uk. If Dr Billings is not able to handle your complaint to your satisfaction then you would be able to contact the UCL Research Ethics Chair on ethics@ucl.ac.uk.

In the unlikely event that during your interview concerns were raised about a serious adverse event, then it may be necessary for us to contact your professional body, but this would be discussed in full with you.

Will my taking part in this project be kept confidential?

Any information that we collect about you will be kept strictly confidential. Your contact details will be used solely for the purposes of sharing information about the study, obtaining consent and arranging a time for the interview. Once the interview is completed, this information will be deleted.

During the interview you will be reminded not to mention any identifying details of your colleagues or place of work. If any potentially identifying information is mentioned, this will not be included in the transcript of the interview. After your interview has been transcribed, the original audio recording will be deleted and the transcript will be saved under a pseudonym. You will not be able to be identified in any ensuing reports or publications

What will happen to the results of the research project?

The transcripts of the interviews from all the health and social care professionals will be analysed thematically and written up into a brief report which will subsequently inform guidance for NHS service managers and planners. The findings of the study will be written up in more detail for dissemination in a peer reviewed journal. Only the researcher team involved in this project will have access to your data. The anonymised data will be archived by UCL and kept for 10 years, in line with UCL policy. This data may be accessed at some point in the future, but only with permission and under the supervision of the Principal Investigator, Dr Jo Billings.

Who is organising the research?

The study is being organised by the COVID Trauma Response Group, a group of specialist trauma clinicians and clinical researchers based at the Institute of Mental Health at UCL, together with the Department of Clinical Psychology at Royal Holloway. There is no external funding or sponsorship of this research.

Local Data Protection Privacy Notice

Notice:
The controller for this project will be University College London (UCL). The UCL Data Protection Officer, Alex Potts, provides oversight of UCL activities involving the processing of personal data, and can be contacted at a.potts@ucl.ac.uk.

This 'local' privacy notice sets out the information that applies to this particular study. Further information on how UCL uses participant information can be found in our 'general' privacy notice:

For participants in health and care research studies, click here

The information that is required to be provided to participants under data protection legislation (GDPR and DPA 2018) is provided across both the 'local' and 'general' privacy notices.

The lawful basis that will be used to process your personal data are: 'Public task' for personal data.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonymise the personal data you provide we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

Appendix I: Consent Form

PARTICIPANT CONSENT FORM

Psycho-social Support for High Risk Groups in Response to COVID-19

Frontline health and social care staff experiences of psycho-social support during the COVID-19 pandemic - One Year On

Dear Potential Participant

Thank you for considering taking part in this research. Please complete this form after you have read the Participant Information Sheet. If you have any further questions, please do ask the researcher before you decide whether to participate.

I confirm that I understand that by ticking/initialling each box below I am consenting to this element of the study. I understand that it will be assumed that unticked/initialled boxes means that I DO NOT consent to that part of the study. I understand that by not giving consent for any one element that I may be deemed ineligible for the study.

If you have any remaining questions about any aspect of the research process you can contact the Principal Investigator Dr Jo Billings on j.billings@ucl.ac.uk or Lead Researcher Karina Soubra on karina.soubra.2019@live.rhul.ac.uk. If you have any questions about data protection, please contact the data protection officer Alex Potts on a.potts@ucl.ac.uk.

		Please tick/initial
1.	I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction and am willing to take part in an individual interview.	
2.	I understand that my participation is voluntary and I am free to withdraw without giving a reason, up until one week after the interview. After one week the data will have been anonymised and included in the analysis and it will not be possible to retract the information.	
3.	I consent to participate in the study. I understand that my personal information (interview responses) will be used for the purposes explained to me. I understand that according to data protection legislation, 'public task' will be the lawful basis for processing.	
4.	**Use of the information for this project only** I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified. I understand that my data will be stored securely and pseudonyms will be applied before analysis. It will not be possible to identify me in any publications.	

5.	I understand that my information may be subject to review by responsible individuals from the University for monitoring and audit purposes.	
6.	I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the interview.	
7.	I understand no promise or guarantee of benefits, direct or indirect have been made to encourage me to participate.	
8.	I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researcher(s) undertaking this study.	
9.	I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future.	
10.	I consent to my interview being audio recorded and understand that the recordings will be stored securely, will be used for the specifically stated research purpose and will be destroyed immediately following transcription.	
11.	I hereby confirm that I understand the inclusion criteria as detailed in the Information Sheet and explained to me by the researcher.	
12.	I am aware of who I should contact if I wish to lodge a complaint.	
13.	**Use of information for this project and beyond** I would be happy for the data I provide to be archived at UCL in accordance with data protection laws. If so, I understand that other authenticated researchers will have access to my anonymized data.	

Please sign

Participant

Name:
Date:
Electronic Signature:

Researcher

Name:
Date:
Electronic Signature:

Contact details

If you have any questions or concerns, please contact the Principle Researcher Dr Jo Billings, Associate Clinical Professor, Division of Psychiatry, UCL.
Email: j.billings@ucl.ac.uk.

This study has been approved by the UCL Research Ethics Committee:

Project ID number: 18341/001

Committee Contact Details:
Helen Dougal, Research Ethics Co-ordinator, Office of the Vice-Provost (Research) UCL
Email: ethics@ucl.ac.uk. Tel: 020 7679 8717

Appendix J: Extract of Transcript with Initial Coding

Speaker1: And how did you feel about continuing to work during the first wave with everything going on?	
Speaker2: I mean, I think I found continuing to work during the first wave fine in the sense that I think we were all in that really odd phase of focus and adrenaline and just keeping going with things and there was lots to do and it was very busy. So, so, yeah, I think like it def-, I definitely felt quite energetic at that point. I mean, frightened and, you know, a lot of other emotions as well, but I think, um, yeah, it felt like it was it was a good decision, if you like, to have to have chosen to go. Yeah.	Felt very focused and motivated during first wave Very busy in first wave Felt scared working during first wave No regret about redeployment decision
Speaker1: And what were your experiences of management during the first wave?	
Speaker2: (Laughs) It's difficult, a difficult one. I think there were different levels of management and the level that I was at in the organization meant that I was involved in a lot of discussions at very different levels of management, you know, from the sense of kind of what I saw about the management that's happening on the ward, but also within the psychology management and then the wider trust leadership team. I felt that it really varied, some managers were absolutely incredible, supportive, really understood the challenges that staff were facing. Others, you know, we just didn't see anything of them. They disappeared completely. There was no communication. And I think it was very ad hoc, really, in terms of whether they were present, whether they were helpful, I think they were facing particular challenges, you know, in what they did about redeployment and protecting their staff and the situations I was involved in, I think we were in a very challenging situation of needing staff to be redeployed and trying to find a way to support people who felt they couldn't go. Make it fair for the people who did. I think it was just an incredibly complex area. And I mean, you know, I was I was a manager as well. And so, you know, there were people that I was line managing throughout the process as well as, you know, people I was managed by. So I think in that way, I was aware of the (laughs), yeah, that dual role and the pressures I had as an employee, but also the responsibilities I had as a manager. So tricky.	Involved in managerial discussions Variability between managers Some managers supportive Some managers disappeared Lack of communication from managers Management was inconsistent Management had complex challenges Challenge for managers of having to ensure there was enough staff where needed while also being supportive of staff's individual needs Understanding towards management because was manager themselves Understood complexity of managing during first wave
Speaker1: Hmm. And and did you interact with patients with COVID 19?	
Speaker2: Yes.	
Speaker1: And how did you feel about that?	

Speaker2: I mean, I think once I got used to the PPE, it didn't feel any different to any other kind of clinical interaction I've done in in-patient work before, not in intensive care, but in other contexts. So it didn't feel that, you know, different. I think, you know, I was too aware of how high the levels of distress were, in patients and the consequences of getting COVID 19 were, you know, catastrophic for many people. So I think I was very aware of, yeah, how, how, yeah, how how ill people were, but also how how high people's anxiety levels were. So I think it did, it did feel like we could be helpful in some situations as psychologists.	Learning how to use PPE made participant feel safer around Covid-19 patients Witnessed high levels of distress in patients Motivated to support patients in easing their distress More concern for patients than self
Speaker1: And what factors made it easier and more difficult to work during the first wave?	
Speaker2: I think I was lucky in working for an incredibly well-resourced organization and an incredibly large organization, and there were lots of times that we said, I'm so glad I work here and I don't work in another trust. I mean, and I and I feel uncomfortable saying that now, and I and I feel I felt uncomfortable saying it then. But so we never had issues about access to PPE. It didn't feel like. I mean, I don't mean we weren't short staffed, but it didn't feel as unmanageable as it might have been. And as I've heard, it was in other places because of the resources the trust could use. I think incredibly supportive personal relationships, both kind of existing and new, you know, both in work and, you know, with these all family and friends support outside of it. I think. Yeah, I did have a certain sense, even in the chaos of it all, that I trusted that the trust had got a handle on what was going on and that there were plans in place and because I was involved in some of that planning. I also felt like I I don't know we had some influence on some of the things that were happening, and I think also the size of the organization meant that to some extent, people who really couldn't manage to be at work or didn't feel able to or needed to self-isolate or needed to not be on a frontline role because of COVID and caring responsibilities or whatever it was, it was sort of more possible to negotiate that than it feel really punitive when people couldn't come in, and I think that made a made a difference. So there were probably lots of lots of factors, I think, I think also personal resources to some extent as well, you know? My own clinical experience and not not feeling yeah feeling being able to do it from a personal and professional point of view made it a bit more manageable.	The type of trust made is easier Being in a well-resourced trust made it easier Not having issues with PPE supplies made it easier Not as short staffed as other trusts Supportive personal relationships made it easier Trust in organisation made it easier Trusted organisation because they were aware of plans and had some influence on them Being part of large organisation made it easier because of more flexibility and support for staff that couldn't work Being flexible with staff was important Previous clinical experience made it easier
Speaker1: Mm hmm. And what was your experience like of working during the first recovery period after the first week?	
Speaker2: That was awful. That I found challenging and that I found oddly more challenging than the first wave, partly because I think like many redeployed people, I was sort of suddenly stood down with no warning and no preparation and sort of told "We don't	Recovery period worse than first wave Returned to actual role suddenly

need you anymore". And whilst on one level, I was glad because I felt like I, you know, needed a break. The experience of going from that to my old job was very strange. Rejoining a team of people that had been completely, I don't know, what's the word? Sort of, I dont know, we'd all sort of separated during COVID, some people had gone to intensive care. Some people had stayed at home in the garden. Some people had carried on doing a little bit of clinical work below the radar. Some people had been doing their private practice, you know, it was a really, really, really odd experience to come back together as a team. And I think also there was no recovery time because then we were under a lot of pressure to, um yeah,catch up on the waiting list and catch up on the, you know, kind of in inverted commas backlog of patients who hadn't been seen. And there was sort of no there was no recovery period and there was no debrief around our experience at all. And interestingly, again, as a psychologist, I was asked to be involved in a trust-wide debrief program for other staff, but again, there wasn't an opportunity for psychologists to debrief or our team to debrief, or it was it was quite odd. You know, it was something that I'd explicitly suggested and didn't happen, and there wasn't, you know, why take up? So it was a very odd experience of going into other teams to do a debrief for them or a kind of "what was your experience like during COVID?" And and I was aware that I hadn't been a participant in that conversation myself. So it was it was strange to know, I found it I found it really hard. And I think also I found it hard, I think the impact of Covid hit me. I think also um I realized how much I think some of the things that affected me as well, you know, and I realized that, you know, that summer, when everybody else was really excited to be going out more and going out and about, I just didn't have any energy left. I just got nothing left in the tank, really. So I think I think the exhaustion hit me afterwards. So I think that period was incredibly difficult.	Mixed feelings about returning to actual role Difficult returning to old team where every member had a different experience in first wave Difficult coming back together as a team No recovery time during return to actual role didn't help Immediately busy catching up with backlog of patients No debrief offered after redeployment ended As a mental health professional, was providing support to others after their redeployment experiences but did not receive any support themselves The impact of pandemic was felt more in recovery period Felt physically exhausted during recovery period Felt exhaustion from first wave only hit during recovery period

Appendix K: Example Memos

28/07/2021

Participants have spoken about how they were not able to respond to patients needs and care for them because they lacked PPE. One example is when a participant working on a ward recalled how the alarm for a patient went off and she had to make the difficult decision of not entering their room to respond because she did not have adequate protection. None of the staff were able to enter the room and stood at the door looking at the patient through the glass helplessly. They were waiting to receive a delivery of PPE. She reflected on how difficult it was to stick to the decision to not to enter the room and how it went against her values. This highlights how experiences of moral injury were influenced by PPE. PPE stocks were linked to participants having to make more difficult decisions at work.

14/08/2021

Themes of feeling heard and valued. Participants have again spoken about the importance of feeling heard at work either through management or the wider organisation more generally, and how this makes them feel cared for. One participant questioned how her organisation could even put helpful support in place without communicating directly with staff first to understand their challenges and what they feel would be most helpful, which they did not do. I found the frequent suggestions for managers to do a shift interesting and wondered what this would have looked like during the first year of the pandemic.

20/09/2021

Participants have again spoken about the importance of colleagues and how they would not have been able to cope without them. Participants have mentioned the support from colleagues was invaluable because they understood what they were going through and could relate to each other. It was difficult for participants to talk to others outside of work about the difficulties they were experiencing at work. One participant spoke about how she could not discuss deaths she witnessed at work with her family because (1) they did not want to hear about it and (2) they would get more frightened and anxious. Relatability seems to be a key underlying factor for why support from colleagues was helpful.

Appendix L: Quality Assurance Process of Empirical Study

Published guidelines on maintaining quality standards for qualitative research (Elliot et al., 1999) were adhered to in the following ways:

Owning one's perspective- the researcher wrote memos throughout the research process that were used to maintain self-reflexivity. They included reflections on the role and potential influence of the researcher's own values, beliefs and interests on the research process. The researcher also highlighted and discussed their role in the research process in the 'reflexivity' section.

Situating the sample- sociodemographic information was collected from participants to highlight the key characteristics of the sample, including profession, setting and region worked in, and to allow for readers to assess the generalisability of findings. The sociodemographic information can be found in Table 4.

Grounding in examples- example quotes were included for each code discussed in the results section. The quotes were included to provide evidence to the reader of the appropriateness between data and code.

Providing credibility checks- the primary supervisor provided credibility checks throughout the research process and ongoing feedback. The interview schedule was reviewed by two experts by experience, one healthcare and one social care worker, who provided feedback. The final codes and visual representation of the model were presented to a group of academic peers conducting similar research who provided feedback to check validity.

Coherence- this was achieved by sorting the numerous focused codes into a smaller number of theoretical codes in order to logically organise them before mapping the relationships between them onto a visual representation to provide the reader with a comprehensive overview of how the codes inter-relate.

Accomplishing general vs specific research tasks- the researcher carried out 20 interviews with a range of health and social care workers from different professions working in a variety of settings. The researcher emphasised that the conclusions of the research only apply to the groups studied.

Resonating with readers- the researcher aimed to present the material in a way where it was grounded in the data, allowing the readers to judge it as an accurate representation of the subject matter and expanding their understanding of it. This was achieved by ensuring the language used by participants was prioritised when forming codes.

Appendix M: Developing Focused and Theoretical Codes

Theoretical Codes	Focused Codes	Examples of Initial Codes
Personal Context	Support Network	Worrying about not being able to access support from network Talking to others in support network was helpful Talking to other frontline workers in support network was helpful
	Isolation	Isolated from family Isolated from friends Choosing to isolate from others to protect them Isolating themselves by moving out of the home Going into work felt less isolating
	Family illness and loss	Coping with family member being ill Coping with loss of family member
	Caring responsibilities	Concerns about securing childcare Single parent difficulties with childcare Having to care for elderly parents
	Personal health risk	Being low risk was less worrying Having a pre-existing medical condition increased worry Being pregnant increased worry due to uncertainty of impact
	Family health risk	Feeling more vulnerable by living with children Living with family members with health conditions increased worry Implemented infection control measures at home
Resources	Staffing	Increased workload due to staff illness Increased workload due to staff isolating Being short-staffed
	PPE	Frightened due to lack of PPE Inability to complete tasks due to lack of PPE Staff illness due to lack of PPE
	Facilities	Upsetting that there was no space to have a proper break Reflecting on how lack of space harmed patients Benefited from using video-conferencing software

	Funds	Feeling undervalued by salary Feeling valued by being paid overtime Less time to obtain necessary funding
Organisational Response	Guidance and policies	Inconsistent guidance Continuously changing guidance Fast changing guidance Guidance influenced by PPE stock
	Feeling heard	Didn't feel heard Feeling heard made them feel cared for Felt heard and concerns taken seriously
	Communication	Lack of communication Lack of communication caused increased anxiety Style of communication was unhelpful
	Pace and management of changes	Changes implemented suddenly Difficult to cope with ongoing changes No warning ahead of changes
	Level of preparation	Lack of preparation during redeployment No time to prepare for changes to the service Offered training during redeployment
Management	Supportiveness	Lack of support Feeling abandoned Feeling dehumanising
	Communication	Inconsistency in communication Lack of communication Communicating about what is going on in the service
	Understanding and acknowledging challenges	Understanding the challenges being faced Acknowledging that there were challenges
	Empathy	Lack of empathy was upsetting Lack of warmth from managers
	Visibility and availability	Lack of visibility of managers Managers not present on ward Managers unavailable because they were busy
	Respecting staff time	Being expected to stay late Being allowed to take breaks Staying late resulted in more stress
Colleagues	Supportiveness	Colleagues were very supportive Colleagues provided emotional support

		Colleagues provided practical support
	Camaraderie	Colleagues helped by using humour Talking to colleagues was helpful Felt like they could discuss anything with colleagues
	Relatability	Talking to colleagues most helpful because they could relate Similar experiences between colleagues Similar challenges between colleagues
	Burden of helping each other	Having to cover shifts for sick colleagues Helping others out meant taking less time off Helping others resulted in less breaks
	Caring for colleagues	Caring for colleagues was anxiety provoking Felt less safe caring for a colleague
	Colleague bereavements	Not informed of colleague bereavements Hearing of colleague bereavement difficult
Decision Making and Responsibilities	Skills and competence	Lack of skills Feeling incompetent in redeployed role Lack of training in redeployment
	Moral injury	Asked to follow guidance that they disagreed with Difficult to keep family from seeing patient Not being able to provide care due to lack of PPE
	Complexity	Making more complex decisions Complex decisions related to lack of resource
	Consequences	Decisions taken at work resulting in guilt Difficult consequences to complex decisions
External Impactors	Engaging in meaningful activities	Exercising helped Creative pursuits helped Connecting with others over videocall helped
	Public taking Covid-19 seriously	Public following the rules Public social distancing Public wearing face masks
	Stigma	Stigma for being a healthcare worker Denied rent renewal for being healthcare worker

Internal Impactors	Feeling valued	Feeling cared for by public Feeling valued by organisation Feeling undervalued by organisation
	Individual's outlook and temperament	Optimistic attitude Future-orientated mindset Feeling angry
	Feeling helpful	Feeling helpful made them feel less powerless Increased purpose
	Physically connecting with others	Appreciated being able to physically go to work Physically going to work helped feel less isolated
Safety	Anxiety Lack of knowledge Infection control procedures Tested for Covid-19 Vaccine	Worried about safety because of lack of PPE Worrying about not knowing how to treat patients Seeing colleagues following infection control procedures helped Testing availability helped feel safer Vaccine resulted in greater feeling of safety
Temporal Factors	Changes in staff illness	Staff illness greater in first wave Staff illness greater in second wave Greater staff illness resulted in greater difficulty at work
	Changes in workload	Greater workload in second wave Greater workload in first wave in care home Greater workload when more staff illness
	Changes in energy levels and attitudes	Felt exhausted during the second wave Excitement during the first wave Relentless of the work by second wave
	Changes in support offered	Greater support offered during first wave Greater support offered during second wave Lack of support offered throughout
Barriers to Accessing Support	Type of support offered Workload Time Accessibility Availability Awareness Trust Eligibility Staff illness	Type of support offered perceived as unhelpful Too busy with workload to access support Not enough time during the workday to access support Support difficult to access No support offered by organisation/service

	Personal context Understanding of options	No awareness of support offered by organisation Lack of trust in support offered Lack of clarity in eligibility for support Greater staff illness made it more difficult to access support due to increased workload Personal responsibilities made it difficult to access support outside working hours Lack of understanding about what type of support would be helpful