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An insight into mental health analysis in intensive care of Staff during COVID 19

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Abstract
During the COVID-19 pandemic, ICU staff have encountered significant challenges that may have had an impact on their mental health. The purpose of this study is to determine the prevalence of mental health disorders among ICU personnel in nine English hospitals between June 2020 and July 2020. Staff members were given an anonymous, brief web-based survey that included standardised surveys probing for signs of anxiety, depression, post-traumatic stress disorder (PTSD), general well-being, and alcohol use. Significant numbers of ICU staff, particularly nurses, showed signs of likely mental health disorders and suicidal ideation. These findings highlight the requirement for a national approach to safeguard the mental health and reduce the risk of cognitive impairment of ICU staff as they perform their crucial work during COVID-19. More research is needed to fully understand the true extent of clinical need among ICU staff.

Keywords: COVID 19, doctors; intensive care; mental health; nurses

Introduction
On 12 March 2020, the WHO announced that the COVID-19 viral outbreak was a pandemic [1]. Healthcare professionals around the world have served at the forefront of national responses, working long hours to cope with a dramatic uptick in demand and burden in a wide range of healthcare-related fields. Intensive care and anesthesia teams, which together improved access to lifesaving treatment, have felt the effects most keenly.

Fear of getting the virus and threatening those they love, concerns over the absence of protective gear (PPE), and distress related to adverse patient outcomes and the loss of patient lives despite best efforts are just some of the psychological stressors that frontline healthcare workers will have experienced [2, 3]. About a third of the 175 000 people in the UK who were hospitalized with COVID-19 were treated in intensive care facilities. During the initial wave of the global epidemic, hospitals were forced to establish ad hoc intensive care units (ICUs) with highly modified staffing models; reducing the normal 1:1 ICU nurse:patient ratio to as low as 1:6 in some instances [4]. High rates of staff sickness and quarantine during the first COVID-19 surge have significantly worsened preexisting shortages of experienced ICU staff.

As a result, intensive care unit (ICU) staff have had it particularly tough, notably during the first wave, due to the fact that they spend extended amounts of time in areas with a high risk of COVID-19 exposure while wearing PPE and must constantly deal with difficulties arising from staffing and equipment shortages. Staff may have struggled at times to provide their usual level of service as a result of this. In particular, the high mortality rate among COVID-19 patients admitted to the ICU, along with the difficulty in communicating with patients and their next of kin due to visiting restrictions, has been a strain on all ICU personnel.

Psychological distress, moral injury [5] and the onset of mental health problems like depression and post-traumatic stress disorder are all possible outcomes of working in an intensive care unit. (PTSD). A survey of the mental health of front-line employees working in ICU settings during COVID19 in June and July 2020 is needed to determine the appropriate level of psychological support to provide.

Methods
Using data from the Intensive Care National Audit and Research Centre (ICNARC) and local ICU reporting systems, we were able to identify nine NHS hospitals with intensive care units

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(ICUs) that had between 10 and 75 severely ill COVID-19 patients at their peak ICU bed occupancy. The facilities came from a variety of NHS acute trusts, such as major teaching hospitals and community health centers. The information was collected in the course of a service assessment exercise conducted during the first COVID-19 surge in the UK to see how the shift in work schedules affected critical care and anesthesia personnel.

We communicated with clinical directors at the affiliated ICUs and pushed for widespread distribution and participation in the poll. A corporate e-mail mailing list and a departmental short message service (SMS) contact group were used to disseminate the poll.

In order to gauge people's mental health and happiness, researchers created a short online survey that can be finished in a maximum of five minutes. The survey is comprised of several verified questions.

Quantitative variables with binary outcomes were specified by the subsequent cut-off scores in the survey: scores of >9 on the 9-item Patient Health Questionnaire (PHQ-9) indicate probable moderate depression and >19 on the 9-item PHQ-9 indicate probable severe depression [7]; a score of >18 on the 6-item PostTraumatic Stress Disorder checklist (PCL-6) civilian variant to measure PTSD [8]; and so on. Responses to the PHQ-9's item "thoughts that [they] were better off deceased, or of harming [themselves] in some manner [within the past two weeks]" were also analyzed. Finally, the emotional and practical aspects of mental health were investigated with the help of the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) [10], a 14-item scale in which all questions are worded positively. A web-based survey form containing these questions was made available via a link in an electronic mail or text message.

The brief online poll was conducted in an anonymous manner, and the collected data were separated from any device-specific information. The survey was finished voluntarily by the participants, who were informed that their information would be kept confidential and that they could stop at any time without having their responses lost.

The poll was created with the help of LimeSurvey (https://www.limesurvey.org/), and it is currently being stored on a secure university server. Participants could take part in the poll without providing any personal information or registering for anything.

Two university ethics panels were consulted to determine whether or not ethical approval was necessary for the survey, and both agreed that it was not because it was an anonymous audit and quality development exercise. The 'is my project research?' decision tool developed by the NHS Health Research Authority likewise concluded that no review by an investigation ethics committee was necessary.

To summarize the characteristics of the group, descriptive analyses were performed. The correlation between the mental health assessment ratings was analyzed using a bivariate correlation. Using logistic regression analyses, we looked at how ratings varied by occupation, specifically between physicians, nurses, and other ICU healthcare professionals.

Results

There were a total of 709 people who participated in the research. In this group, 291 (or 41%) called themselves physicians, 344 (or 49%) called themselves nurses, and 74 (10%) called themselves working in some other type of professional capacity. Although most participants (n = 418, 59%) reported high levels of well-being on the WEMWBS, nearly half (n = 322, 45%) reached the threshold for serious depressive disorders, PTSD, severe anxiety, or problem drinking. (see Table 1). Thirteen percent of people said they had seriously considered suicide or self-harm on multiple occasions within the previous two weeks. When broken down by profession, 19% of nurses versus 8% of physicians and 10% of other clinical employees reported having these ideas (2 = 26.8, df = 8, P0.002).

Table 1: Frequencies of participants split by role which met psychological measures thresholds; logistic regressions carried out on each psychological measure threshold to examine effect of role are presented.

N (% of Sample)		Role Counts			Logistic Regeression 95% CI for Odds Ratio			
		Doctor (% of sample)	Nurse (% of sample)	Other (% of sample)	B (SE)	Lower	Upper	Odds ratio
Good well-being	417 (59)	185 (64)	186 (54)	46 (62)	0.39* (0.16)	1.08	2.04	1.48
Probable PTSD	280 (40)	92 (32)	168(49)	20 (27)	-0.73* (0.16)	0.35	0.67	0.48
Problem drinking	51 (7)	20 (7)	28 (8)	3 (4)	-0.18 (0.30)	0.46	1.51	0.83
Moderate depression	262 (37)	76 (26)	167 (49)	19 (26)	-0.98* (0.17)	0.27	0.52	0.38
Severe depression	45 (6)	13 (5)	30 (8)	2 (3)	-0.71* (0.34)	0.25	0.96	0.49
Moderate anxiety	189 (27)	58 (20)	115 (33)	16 (22)	-0.70* (0.19)	0.34	0.71	0.49
Severe anxiety	80 (11)	23 (8)	52 (15)	5 (7)	0.73* (0.26)-	0.23	0.81	0.48
AMD	322 (45.4%)							

According to logistic regression, physicians are more likely to report high levels of well-being, while nurses are more likely to satisfy the criteria for serious depression (average and severe), post-traumatic stress disorder (PTSD) (probable), and anxiousness (moderate and severe). (see Table 1). In general, lower scores across the board were linked with higher WEMWBS scores. (depression, PTSD, anxiety and alcohol use). There was a strong correlation between anxiety, sadness, and PTSD symptom measures. There were no statistically significant correlations between any indicator of mental illness and alcohol intake. (see Table 2).

Table 2: Bivariate correlations carried out between psychological measures

	WEMWBS Su	PHQ-9	PCL-6	GAD-7	AUDIT-C
WEMWBS	-	-0.708**	-0.601**	—0.659**	-0.135**
PHQ-9	-0.708**	-	0.730**	0.784**	0.047
PCL-6	-0.601**	0.730**		0.701**	-0.013
GAD-7	-0.659**	0.784**	0.701**	-	0.039
AUDIT-C	-0.135**	0.047	—0.013	0.039	-

**Correlation IS significant at the 0.01 level (two-tailed)

Discussion

As the first phase of the pandemic of COVID-19 surge hits the NHS in the latter half of June and July 2020, we looked at the mental health effects of working in ICUs during this time. Some 45 percent of the population reported having symptoms consistent with probable post-traumatic stress disorder (PTSD), major depressive disorder (MDD), or an anxiety disorder (AD). Nurses were more likely to indicate poor mental well-being and concepts of harming oneself or self-harm than doctors or other medical staff, and more than one in seven ICU staff in this study reported having ideas that they were better off dead or of harming themselves in some way on multiple days over the past 2 weeks. Finally, moderate drinking was not significantly linked to worse mental health outcomes, despite the fact that about 8% of the sample looked to be at risk of alcohol-related difficulties.

Our findings demonstrate the possible severe effect that COVID-19 may have had on the emotional well-being of UK frontline workers. Other studies have reported an overall PTSD prevalence in UK military personnel of around 7%, with the highest rate, of 17%, in veterans who had recently served in a combat role [12]. The 2014 Adult Psychiatric Morbidity Study [11] found rates of probable PTSD in the UK general population to be 4%. Therefore, the incidence of probable PTSD we report (40%) was roughly nine times that discovered within the population as a whole and more than twice that observed among recent combat veterans. These results indicate that ICU clinicians have a substantially increased risk of suffering from PTSD, though additional studies are needed to clarify what percentage actually meet the diagnostic requirements for PTSD on clinical evaluation. Since there is substantial evidence linking poor mental health to functional impairment, which in turn could raise the risk of incidents involving patient safety [13], our results of elevated levels of PTSD and other issues with mental health, such as melancholy anxieties, are highly pertinent.

Although it is impossible to know for sure why ICU clinicians stated such high rates of poor mental health, staff still faced an array of substantial stressors at the point in time these data were collected (June-July 2020), such as long shifts, caring for kids who were dependents and other household duties [14], and regular encounters with ethical quandaries with the important risk of moral injury [15]. Lack of personal protective equipment may have also contributed to problems for some [13]. While it is possible that the high rates of probable mental illnesses are the result of the ICU always being an unpleasant one, a 2015 study of 335 ICU staff discovered rates for possible PTSD of 8% among those working with adults and 17% among those working with children [16], suggesting that the rates in the present investigation are indeed elevated.

We discovered that nurses, more so than doctors or other ICU staff, were more likely to disclose experiencing mental health difficulties. It's unclear whether this profession's workforce is disproportionately affected by mental health issues due to demographic risk factors or other variables. But we do observe that UK intensive care unit nurses are disproportionately young adults and female [16], and that this age group has been shown to be at a higher risk of suffering from poor mental health in the population as a whole during this pandemic [17]. Other studies have also highlighted the high risk of burnout among nurses and the possibility that poor mental health among nurses could have an impact on retention rates [18], indicating that healthcare may be a profession particularly prone to poor mental health. We were unable to further explore whether doctors were more inclined to understate symptoms than nurses in this research. It is very concerning that over one in seven doctors (and almost all of the nurses) in our group worked in the intensive care unit and had suicidal thoughts. However, our poll did not inquire as to whether or not respondents had deliberated over self-harm or suicide. It's also not obvious how common these kinds of ideas are among healthcare professionals. For instance, one study from 2014 found that about fourteen percent of nursing students had suicidal ideation related to self-injury [19, 20]. We argue that healthcare administrators should be made aware of the existence of such ideas and that prompt action should be taken to provide compassionate support to any member of the staff who may be suicidal.

It should come as no surprise that our data revealed that those who met the criteria for one type of suspected mental disorder were also significantly more probable to meet the criteria for another disorder. Only in cases of chronic alcohol abuse was this not the case. While we did find that about 10% of the population engaged in drinking behavior consistent with alcohol misuse, we did not find any correlation between poor emotional health and alcohol misuse, implying that self-medicating with alcohol was not prevalent among those who participated in this study. The identified prevalence of alcohol misuse was also consistent with prior estimates, which ranged from 2% to 24% [21]. This may be due to the fact that healthcare workers have a heightened awareness of the risks associated with alcohol use, or because they were aware that drinking heavily the night before would make coping with work the next day even more challenging for them. Irrespective of the cause, this result is encouraging.

A number of benefits and drawbacks exist for this research. The study's strengths include its broad scope (including hospitals from all over the United Kingdom) and the fact that participants could complete the study's evaluations in secret. Due to space limitations and participants' desire to remain anonymous, this research has a flaw in its lack of demographic information. It would be helpful for researchers to have this data, as it shows that women, young people, and parents with dependent kids are more inclined to experience mental health issues. And second, instead of the standard of care diagnostic interviews, this research relied on self-report indicators of mental illness. Lastly, response bias may have occurred, meaning that the respondents may have had particularly noticeable mental health problems that they were keen to report. Either randomly selecting participants or conducting a non-responder analysis would enhance future studies.

However, despite these caveats, this research provides sufficient data to support a number of suggestions. To begin, our findings indicate that NHS managers should give priority to providing evidence-based staff support, which is likely to increase staff mental health and lessen the probability of mentally ill staff offering substandard care. Second, given the benefits of formal therapy over the long run, it is essential that those in need have quick access to it. (eg. reduced staff absence, improved quality of life). And third, other trauma-exposed professions, like firemen [22] or soldiers [23], have found that supervisor and peer support are

especially helpful. Having some of the ICU personnel go through active listening or support from peers training could help patients as well. In the fourth place, managers in the NHS should keep an eye on the health of their ICU workers to make sure that the effects of increased workloads are adequately understood and dealt with. This would make it possible to adopt improved staffing and other forms of support in a flexible manner. Safeguarding the psychological well-being of intensive care unit (ICU) workers, upon who much of the UK's fight against the pandemic relies, is another benefit of this measure. Employees are less likely to report psychological health issues if they believe their managers cannot identify them as individuals, so this is an essential factor to consider when conducting psychological health monitoring [24].

Patients and staff in the intensive care unit throughout the current pandemic were found to have significantly higher rates of poor mental health, with a focus on elevated levels of probable PTSD, according to this research. Medical professionals, especially nurses, were at a higher risk. These findings indicate that NHS employers have a moral and legal obligation to provide adequate support to properly safeguard staff well-being [25], as the care of critically ill patients requires intensive care unit staff to be highly functional. Moreover, without appropriate mental health protection from their employers, ICU staff are more likely to perform poorly, which in turn reduces their ability to provide high-quality patient care that is desperately needed right now.

Conflict of Interest
Not available

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Not available

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