SHORT REPORT

The negative impact of the COVID-19 pandemic on UK haematology registrars’ well-being and training: Results of a UK nationwide survey

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Abstract
The COVID-19 pandemic has disturbed medical training. Haematology registrars were surveyed using SurveyMonkey. Eighty-nine out of 269 (24.9%) responded. Reported stressors included concerns about transmitting the infection, disruption of leave, inferior patient outcomes, survivors’ guilt and interruption of career progression. Only 31.2% felt ready to progress to the next training stage. Reported causes of lack of training were disruption of clinics and training days and utilisation of telephone consultations. Several stressors negatively impacted haematology registrars’ well-being, training and progression. More emphasis on psychological support, outpatient clinic work and e-learning is needed.

KEYWORDS
COVID19, haematology training, postgraduate medical education

1 INTRODUCTION

The COVID-19 pandemic first started in China in December 2019 and subsequently rapidly spread worldwide. The multidimensional impacts of the ongoing pandemic include disturbance to all aspects of postgraduate medical education [1–3].

The competence-based haematology specialist training in the United Kingdom encompasses both clinical and laboratory training. The rigorous assessment of trainees’ competence progression across various curricular areas is aided by consultant reports and performance in workplace-based assessments (WPBAs). Passing all parts of the FRCPath examinations is mandatory. There is no published research on the impact of the COVID-19 pandemic on UK haematology registrar training. Our aim is that this work helps all stakeholders to make plans to mitigate the negative impacts on training of current and future pandemics.

2 METHODS

A questionnaire (reproduced in the Supporting Information) was designed using SurveyMonkey® (San Mateo, CA) and was distributed by the HaemSTAR network [4]. Responses were collected between June and October 2020. The statistical package for social sciences version 17 (SPSS-17) (Chicago, IL) was used for data analysis. Respondents’ opinions were gathered using Likert items and described using...
median and inter-quartile range (IQR). A median of 4 or more was assigned to determine respondents’ agreement regarding a statement, while a median of 2 or less was assigned to indicate disagreement. Non-parametric tests were applied using two-tailed testing and a value of 0.05.

### 3 | RESULTS

The survey was sent to 269 haematology registrars, and 89 completed responses were received (response rate of 24.9%); see Supplementary Figure 1. The median age for respondents was 34 years (IQR: 31–36) and 56 (62.9%) were females. Six (6.7%) had active and ten (11.2%) had historic mental health issues.

Stressors affecting the respondents during the pandemic are shown in Table 1. Concerns about transmitting the infection to household contacts, disruption of travel or leave plans and lockdown measures received the highest rating as stressors, as evident by a median and lower limit of IQRs of 4. Reported stressors were fear of infection, care needs including childcare, inferior patient outcomes due to COVID-19 infection or to modifications of haematological management, interruption of career progression (including inability to achieve learning objectives or required WPBAs), interruption of public transport used for personal activities and feeling safer in haematology compared to frontline staff (survivors’ guilt). Fear of adverse pregnancy outcome, the need to self-isolate, staff-shortage and the cancellation of out-of-program experiences were also described.

Respondents did not agree that bereavement related to COVID-19, loss of income or redeployment to other clinical areas caused stress. Perceptions of redeployment as a source of stress, however, varied significantly between deaneries (p = 0.007). Respondents were asked whether the training they had received to enable safe redeployment was adequate. Forty-eight out of 79 (60.8%) had not been redeployed. Of the remaining 31, only six (19.4%) thought their redeployment training was adequate. The degree of satisfaction with training delivered to enable safe redeployment was significantly different between deaneries (p = 0.027). Respondents reported that redeployment negatively impacted training, particularly morphology training and preparation for exams.

Fourteen respondents (17.5%) reported infection with SARS-CoV-2. The infection rate was significantly different between deaneries (p = 0.003). Twenty-two (27.5%) reported infection in a spouse or relative. Negative impact on psychological and mental well-being was reported by 38 (47.5%) respondents. This was significantly more in females (OR 5.74, p = 0.001). Twenty-two (27.5%) reported infection in a spouse or relative. Negative impact on psychological and mental well-being was reported by 38 (47.5%) respondents. This was significantly more in females (OR 5.74, p = 0.001). On a 10-point scale from −5 to +5, respondents subjectively felt their overall level of stress has increased to +1.74 ± 0.24 (SD 2.16) compared to pre-pandemic time.

Respondents strongly agreed that the impact of the pandemic on the promotion of their overall professional skills was negative (median 4, IQR 3–4, p = 0.005). However, their perceptions on the impact of the

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**Table 1** Respondents’ perceptions towards various stressors during the pandemic response period reported as the median and the IQR for nineteen 5-point Likert items

| Item                                                                 | Median | IQR       | p    |
|----------------------------------------------------------------------|--------|-----------|------|
| Lack of appropriate PPE                                              | 3      | 2–4       | <0.001|
| Inferior patients’ outcomes due directly to COVID (i.e. infection)   | 4      | 3–4       | <0.001|
| Inferior patients’ outcomes due indirectly to COVID                   | 4      | 3–4       | <0.001|
| Redeployment to non-familiar areas and other specialties             | 2      | 2–4       | <0.001|
| Feeling guilty being safer in haematology compared to my ‘frontline’ | 4      | 2.25–4    | <0.001|
| Feeling guilty about shielding due to underlying health issues       | 3      | 2–3       | 0.001 |
| Increased haematology workload                                       | 3      | 2–4       | 0.005 |
| Interruption of career progression                                   | 4      | 3–4.25    | <0.001|
| Interruption of research projects                                    | 3      | 3–5       | 0.01  |
| Interruption of changes in public transport                          | 3      | 2–4       | 0.251 |
| Public health and government interventions                            | 4      | 4–4       | <0.001|
| Disruption of leave or travel plans                                   | 4      | 4–5       | <0.001|
| Care needs including childcare                                       | 4      | 3–5       | 0.01  |
| Fear of infection for yourself or your immediate contacts             | 4      | 3.75–5    | <0.001|
| Concerns about transmitting infection                                 | 4      | 4–5       | <0.001|
| Loss of income e.g. locum opportunities                              | 2      | 2–3       | <0.001|
| Bereavement or infection due to COVID                                 | 2.5    | 2–4       | 0.103 |
| Spiritual stresses e.g. suspension of prayers and closure of places of worship, and pressure to trim your beard grown for religious purposes | 3      | 2–3       | 0.02  |
TABLE 2  Respondents’ perceptions on the reasons underlying the lack of training progress during the pandemic

| Item                                              | Median | IQR   | p     |
|---------------------------------------------------|--------|-------|-------|
| Loss of training opportunities in the inpatient setting | 3      | 2–4   | <0.001|
| Loss of training opportunities in the outpatients’ clinics setting | 4      | 4–5   | <0.001|
| Loss of training opportunities in the haematology day unit setting | 3      | 2–4   | 0.252 |
| The utilization of telephone clinics in preference to face-to-face clinics | 4      | 3–4   | <0.001|
| Direct or indirect involvement in the care of patients with COVID-19 | 3      | 3–4   | <0.001|
| Cancellation of didactic teaching and training days | 5      | 4–5   | <0.001|

Our respondents felt that they suffered due to high rates of redeployment and poor preparation to allow this to happen safely. This would raise concerns regarding safety and efficiency, loss of training opportunities, the impact on haematology staffing levels and the risk of cross-contaminating haematology units.

Less than a third of participants thought they had achieved the training required to progress to the next stage. This is much lower than the rate of satisfactory outcome among haematology trainees in 2019 (55%) [13]. The major disruptions of training revealed by our data are in line with a recent General Medical Council survey where more than two thirds reported disruption of training [14]. Reported causes for this lack of achievement were cancellation of didactic teaching sessions, reduced laboratory experience, changes to outpatient clinics and adoption of telephone consultations in preference to face-to-face consultations. Outpatient clinics and laboratory responsibilities represent the majority of haematologists’ clinical work. We thus recommend that deaneries, as part of their plans to mitigate the effects of the pandemic, put greater emphasis on allowing registrars to have more access to outpatient clinics and laboratory work. This is especially true as we predict the utilisation of telephone clinics is likely to persist for prolonged periods. Our study shows a need to develop and use local and national virtual morphology training platforms [15]. UK NEQAS EQATE is one such platform [16]. Many UK laboratories are starting to use haematology analysers with image analysis capabilities (e.g. CellVision®). This may facilitate remote morphology reporting in- and out-of-hours. This together with other changes to facilitate remote working (e.g. changing bleep systems and allowing remote access to hospital systems) would...
allow shielding registrars (e.g. due to pregnancy) to remotely support their onsite colleagues. Remote working would also facilitate social distancing and minimise in-hospital infection transmission at peak epidemic transmission times. Many of the teaching sessions and courses are targeted to exam preparation. This might explain the perception that their interruption contributed to the lack of satisfactory training. We are unable to assess whether trainees at different stages of training (i.e. pre- or post-exams) were differently impacted by cancellation of teaching. E-learning was recommended to replace lost teaching.

In summary, despite multiple studies examining the impact of COVID-19 on medical school education [17] this is the first published survey to report the negative impact of the COVID-19 pandemic on haematology registrars. The pandemic and its response were associated with many stressors, including negative impact on physical and mental health, poor academic achievement and lack of readiness to progress to the next stage among haematology trainees. Increased emphasis on psychological support, outpatient clinic and laboratory experience and on e-learning are urgently required to compensate for the lost training and to mitigate the future negative effects of COVID-19 as it becomes endemic in society.

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CONFLICT OF INTEREST

MOAA has received support to attend a conference from Janssen. PLRN has received research grants from Novartis, Rigel and Principia Biopharma as well as speaker fees from Bayer, Grifols and Takeda. AL and ES have no conflicts of interest to declare.

AUTHORS CONTRIBUTION

MOAA proposed the study, drafted the questionnaire, analysed the data and drafted the manuscript. PLRN, ES and AL reviewed and edited the proposal, questionnaire and the manuscript.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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