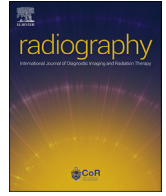




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The challenges, coping mechanisms, and recovery from the initial waves of the COVID-19 pandemic among academic radiographers



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ABSTRACT

Introduction: The COVID-19 pandemic arrived in Europe in March 2020 and created major challenges across healthcare provision and for healthcare education programmes as well as having a major impact on society. Within the profession of Radiography changes in medical imaging, radiotherapy, and teaching practices have been reported along with the negative impact on radiographers and students. The aim of this study was to investigate key challenges relating to academic practice during the COVID-19 pandemic; how radiography academics have coped and to identify recommendations for further support required to facilitate recovery of the academic faculty as the pandemic ebbs.

Methods: A survey was circulated using SurveyMonkey™ via personal, national and international networks, including the European Federation of Radiographer Societies (EFRS), to reach as many academic radiographers as possible. Open questions relating to the challenges of providing radiography education during the COVID-19 pandemic and the coping strategies used were included. Thematic analysis was conducted using NVivo (QSR International, MA).

Results: 533 academic radiographers responded to the whole survey from 43 different countries, with 340 responses relating to challenges and 327 for coping strategies. The main themes for the challenges were clinical practice, communication with colleagues, lack of face to face, managing change, students (support), and staff support. The coping strategy themes were communication with colleagues, physical exercise, self-care and wellbeing.

Conclusion: These data demonstrate a multitude of challenges for academic radiographers and the pressure they worked under during the first year of the COVID-19 pandemic was clear. However, the majority employed healthy coping strategies to help them deal with the pressure, uncertainty and trauma of the situation.

Implications for practice: COVID-19 had a significant impact on academic radiographers and while many reported good strategies for coping, the level of pressure is unsustainable. This study highlights the need to support academic radiographers to ensure a sustainable workforce.

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Introduction

A novel coronavirus (nCoV) was identified on 7 January 2020; it was subsequently named the “COVID-19 virus” and on the 13th of March 2020 the World Health Organization (WHO) identified that Europe was at the centre of a pandemic. Within the profession of Radiography changes in medical imaging, radiotherapy, and teaching practices are evidenced, however the focus has been in

relation to the wellbeing of radiographers working within the clinical environment and student radiographers in training.^{1,2}

A Spanish study performed in the initial wave of the COVID-19 pandemic in Europe, May–June 2020 evaluated 546 radiographer responses. Participants reported concerns regarding the possibility of spreading the infection to family members, their co-workers, and patients.³ A further study by Elshami et al., involving 903 radiographer participants from across Africa and Asia⁴ reported comparable levels of concern with respect to becoming infected with COVID-19. In this study 56.9% identified potential COVID-19 infection as a major stressor, 57.1% stated they may require professional help to cope. Circa 20% of all participants reported signs of anxiety

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which compares to a Chinese study performed by Xiang et al.⁵ Recurring headaches, abdominal cramps, chest pain, changes to eating and sleep patterns are all physical manifestations of stress; as are psychological and emotional occurrences such as nervousness, frustration, tension anxiety and depression.⁶ Elshami et al. recommended support for staff in relation to their emotional wellbeing.⁴ Whilst the aforementioned studies were performed prior to vaccination breakthroughs there are numerous studies which report similar findings up to the current time period of this study and more recently.^{7,8} Some academic staff routinely undertake clinical work, while others returned to clinical practice to assist on the frontline during the pandemic, often in addition to their academic work.

Two significant variants of COVID-19 have impacted on how the pandemic was managed internationally since the 13th March 2020. On the 23rd of July 2021 the SARS-CoV-2 Delta variant was identified by the WHO as being dominant across Europe. The WHO stressed that efforts were needed to prevent transmission and that vaccination roll outs needed to be accelerated. Furthermore, the Omicron B.1.1.529 variant was declared a “Variant of Concern” on 26th November 2021. During these phases of the pandemic the pressures on the clinical environment remained and impacted on clinical staff and upon professional training programmes, as countries went in and out of high-level lockdowns. Despite the commencement of vaccination, rollout from December 2020 in the UK and from spring 2021 across Europe the continuing threat of infection remained serious for all populations and further variants cannot be ruled out in the future.⁹

Healthcare professionals remain as a high-risk cohort of workers with a strong evidence base of high incidences of burnout due to high stress levels.^{10,11} Several publications focus upon coping strategies as the pandemic remains virulent^{12,13} however few focus on academics responsible for healthcare professional training programmes. In a recent study Strudwick et al. investigated how academic staff and clinical practice tutors had supported students during the current pandemic¹⁴ and notes the challenges faced by academic staff as they moved rapidly from didactic lecture delivery to online lectures.^{15–18} The impact on academic training however extended to disruption to essential labs, tutorials and practical placement schedules.

Academic staff also supported students as they entered a very challenging clinical environment and were exposed to increased levels of very sick patients due to the pandemic or as they waited to resume placements which was an immensely stressful time for all parties.^{14,19} These challenges had to be managed to ensure new graduates successfully completed their education, which was paramount at a time when clinical staff were exhausted. To address the paucity of literature related to radiography academic wellbeing, this study was performed to investigate the key challenges and how radiography academics have coped thus far under pandemic conditions and to identify recommendations of further support required to facilitate recovery of the academic faculty as the pandemic ebbs.

Methods

This study was part of a larger study undertaken by researchers collaborating between two European universities.¹⁹ Ethical approval was applied for, and an ethics waiver was granted by the University College Dublin research ethics committee LS-E-21-48-Rainford for both aspects of the research.

Survey development

The survey was developed using SurveyMonkey® (Momentive Inc., San Mateo, USA/www.surveymonkey.com) to facilitate widespread distribution of the survey and ease of data collection.

The full survey included Oldenburg burnout inventory²⁰ along with questions relating to demographics and on how the COVID-19 pandemic had impacted on academic radiographer as published by Knapp et al.¹⁹ The final questions, reported in this paper, incorporated open response options to outline the top three academic challenges during the COVID-19 pandemic to date and to outline any self-care, well-being, and coping strategies academic radiographers had utilised.

Survey participants

Participants had to be employed in a full-time or part-time basis as part of the academic teaching team for undergraduate or postgraduate radiography training programmes during the period from September 2019 through to the survey period. Participants volunteered without incentive.

Survey distribution

The survey was distributed via the European Federation of Radiographer Societies (EFRS) Virtual Research Hub during the European Congress of Radiology 2021 (ECR 2021) and via EFRS mailshots to their membership of national societies, through personal contacts using a snowballing technique. Across all distribution methods, the survey opened on the 2nd of March 2021 and closed on the 31st of March 2021.

Data analysis

Method for qualitative data

The qualitative data were analysed using content analysis by a qualitative researcher. There were 340 responses outlining the challenges, and 327 responses for coping strategies. The first stage of the analysis involved taking the two survey questions as a starting point, namely Challenges and Coping strategies. NVivo software (QSR International, MA) was used for the second stage of analysis with a bottom-up, inductive approach, which allowed themes to emerge as the survey data was explored. From this, the data were coded into the appropriate main themes. The second stage involved breaking down the data even further to explore it at a more granular level, which formed sub-themes.

Results

Participant demographics

In total 533 responses were received for analysis, from 43 countries. Sixty-one percent of respondents identified as female and 38.0% male and 1% preferred not to state their gender or identified as gender queer. The modal age range was 35–39 years and ranged from 20 to 24 years through to 70 years and older.

The majority of respondents, 73.6%, 77.0%, 77.43% and 32.3%, taught across years one to 4 respectively, while 50.0% taught at EQF level 7 and 9.3% supervised doctoral students (EQF level 8). Forty-five percent of respondents reported home schooling children or looking after young children during the pandemic-related school closures.

Fifty-five percent of the respondents described themselves as a full-time academic, 19.2% as a part-time academic, 8.4% as a clinical academic, 11.2% as a clinical tutor or practice educator and the remainder as “other”, with a range of titles. The modal duration in academia as just 0–4 years, with the range extending to 40 or more years. 5.9% of participants had experienced a reduction in pay during COVID-19 ranging from 10% to 30% for three or more months.

The challenges formed the main and sub-themes as outlined in Fig. 1. Clinical practice responses identified the requirement for additional training regarding new infection prevention and control measures in practice, social distancing and dealing with Covid-19 positive patients. Work increased for academics with clinical commitments “Juggling University and clinical practice. They are both demanding, however I can only catch up with academic responsibilities in the evenings in my own time which is not healthy”. This theme also captured responses relating to clinical placements being postponed and the challenges related to this. “Clinical placements have been prohibited, leading to no hands on training”. Concerns about students’ loss of clinical experience was clear “Students clinical practice has suffered a setback”.

Communication challenges with colleagues was identified and linked to increased email loadings due to remote working: “getting a quick answer to a query (usually popped into colleague office to ask, but now have to email/phone and wait for an answer)”. In addition, increased efforts were noted in chasing students who did not respond to e-mail. Many found the lack of personal contact with students difficult. “Pastoral support of students, you have to book time with them not see them after class and the ones that need it are reluctant to reply to emails” Some felt that students had become less motivated. Increased meeting loads were also problematic for some participants, “Increased meetings = less prep time. Lengthy screen time with no breaks” along with the fact that they were online “online meetings: too many and too long”.

The lack of face-to-face teaching and contact with students and colleagues was prevalent in the responses. Many felt that the time taken to deliver the teaching load increased. “Teaching workload increase - face-to-face structured into smaller groups due to pandemic but other teaching loads not altered or distributed. Increasing student issues (as expected given their challenges too) with decreased support from other university services. Short turnaround times for other university workloads (‘we need x by tomorrow 5 pm’).” The lack of direct contact was noted as difficult to cope with, “Lack of face to face contact increase in workload managing in a constantly changing environment” and also negatively impacted academics undertaking clinical research; “no face-to-face research”

Managing change was identified as a challenge by many participants, “the teaching workload was already high and further increased with the restrictions; There was an increase in “change of plans” regarding lectures and placements which increased”. “Constantly changing landscape. Even during the changes the goalposts keep shifting.”

Research was mentioned by fewer academics, but appeared to be a major challenge to those who mentioned it. Some found their research funding was compromised, others struggled to find the time to do their research with all the other pressures on time “finding time to do research” but found requirements for producing research remained “there is little time left for research, but we still have the same requirements for production” Staff reported working longer hours than usual “It has been often impossible to get the required work done within the normal hours. I am working most evenings and weekends. The University’s expectations around student satisfaction have understandably increased but this has meant a massive increase in time requirements for academic staff with little peripheral support (for example trying to action plan for new student surveys on top of all the usual work)” There was a mixture of support from colleagues and leaders, but an overwhelming challenge relating to everything taking longer and this was compounded by the lack of ad-hoc interactions and support from colleagues. Some felt their lack of support was a challenge “Lack of real Support from the Leadership team”. Some, with the lack of face-to-face working making this very challenging, highlighted training and supporting new staff as a particular issue.

Academics found that teaching online was hard to gauge the impact of their lectures and particularly struggled presenting to blank screens “Students keeping their cameras turned off in online lectures” “Change to electronic teaching and learning Increased time in front of a (blank) screen and people/students NOT switching on video”. Student assessment became more problematic “Examining students have become more difficult during the pandemic” “ also exams integrity are problems during pandemic”. The development of remote or digital examinations was also time-consuming “Convert to digital teaching and exams takes much time, time that is not reimbursed in the work schedule.” Particular concerns relating to ensuring that final year students graduating on time were recorded.

The digital support for delivering remote learning was a challenge for some “Getting to grips with the technology” and the time related to learning these new technologies as also cited as a pressure on academics “Increased workload Unrealistic expectations regarding use of new technology for education”. Poor internet connection and the need for academics to use their own personal internet was of concern. “Using personal internet facility to train students”. For some who were home schooling children, the demands on their internet caused issues as well, while others struggled with poor connectivity. “Poor IT support inadequate internet broad band”

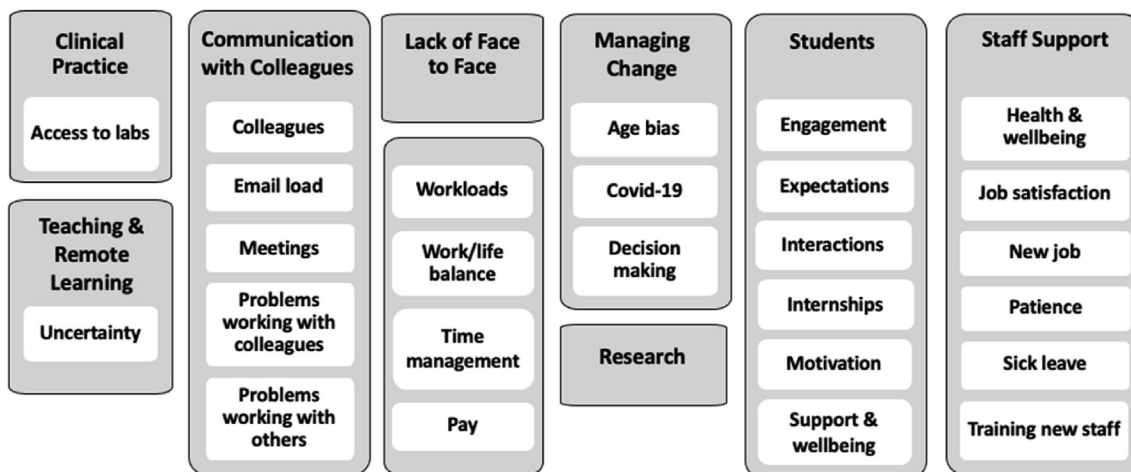


Figure 1. Thematic analysis of the challenges experiences in academic roles during the Covid-19 pandemic (themes shaded grey, sub-themes shaded white).

Many participants mentioned their workload, which was largely reported to have increased due to remote learning, increased meetings, increase reliance on e-mail and the lack of support from colleagues through the short “in the corridor” conversations. *“Increased workload Lack of social and professional contact with colleagues; no “random” conversation leading to lack of creativity and support Lack of work/life distance and therefore balance. Home is work and work is home.”* The increased pressure of work frequently led to longer hours and poor work life balance. Working from home compounded the poor work life balance and many were also balancing home schooling *“Home schooling and full-time job, childcare, no support, double workload because of online switch, a thousand more problems to solve without support.”* *“Workload has been immense and my line manager unsupportive. The university management keeps sending ‘we understand’ messages but no one has actually said well done or Thank you.”*

For some, despite working longer than usual hours, their pay was reduced, and this led to feelings of being undervalued *“1. More time spent ensuring a good educational experience for students 2. Spending more hours to do 1. above whilst receiving a pay cut 3. Feeling undervalued (financially) by the organisation as a staff member who is committed to good teaching practice in difficult circumstances.”* *“Working without regular salary payment.”* *“Using personal internet facility to train students”*

The longer hours, additional pressures, new ways of working, steep learning curves, working from home and poor differentiation between home and work life led to poor work-life balance for many. *“Work-life balance, screen time burnout, teaching online for long sessions ...”* *“Losing balance between work and taking time to switch off. I felt constantly under pressure.”*

Some identified the impact of these challenges on their own wellbeing. *“Significant pressure to meet student’s needs regardless of impact on own wellbeing”* and while Universities were aware of the potential impact on staff wellbeing, providing courses, some reported that the burden on their time was so great that they could not attend them and others found them unhelpful *“All the amount of wellbeing messages and courses, these are actually driving me toward the breakdown they keep; telling me not to have!”*

Despite the challenges identified by the survey respondents, there were also strong themes relating to the methods used to cope with the challenges, uncertainties and trauma associated with the first year of the Covid-19 pandemic. The main and sub themes for the coping strategies outlined by the participants are shared in Fig. 2.

Working at a distance had challenges however; many found that communication with their colleagues was important and supportive. For some this needed to be timetabled in to ensure time was made and different methods of communication were considered *“I deliberately have catch-up time with colleagues in the online calendar that controls my day, where we can talk normally by phone, not sat in front of our computers”*. In particular activities which were outside of the formal work remit were deemed important *“I regularly meet my colleagues through Virtual Coffee Groups”*; *“Exercise, online staff challenge, Zoom coffee meetings with colleagues and murder mystery event in line organised by a work colleague”*.

Family and friends were highlighted as important and the lack of a commute meant that some indicated there were benefits of more time created, which could be spent with their families and spending time with families was clearly important to many *“enjoying time with my child/family time”*, *“More time invested in family and hobbies”*. The pandemic mortality figures undoubtedly impacted on participants as comments included *“understanding that family is the most important thing and dedicate them, most of my time”* and *“keeping in contact with family and friends as much as possible, either in person or using video technology”*.

Many respondents mentioned the importance of exercise and this included a wide range of exercises including breathing exercises, running, yoga, walking, cardio-workouts, dog walking and online exercise classes including Pilates and yoga. Many had to exercise at home, but were able to go outside for walks when possible *“Practice exercise at home or go to a walk”*, *“I do some exercise in between working hours every day”*.

The importance of leisure time was highlighted. When working from home, boundaries become blurred and ensuring protected time to unwind from work was essential *“This year I made a conscious decision to switch off at an agreed upon time, not to answer work emails and prioritize maintaining balance”* and *“proper switching from work to leisure (I work upstairs on my desktop and relax downstairs with no devices)”*. A number of respondents addressed this by setting their own boundaries on work and communicating these with colleagues *“taking up regular hiking on my days off - setting boundaries for days not rostered to work (e.g. not monitoring and actioning emails on days off), communicating these boundaries with colleagues, managers”*. Some used their leisure time for hobbies and to revisit lost hobbies *“Golf simulator putting in the basement”* and *“rediscover of my hobbies”*.

Self-care and wellbeing responses included healthy eating, managing work, meditation mindfulness, sleep, specific courses and the transition between work and home life. Examples of quotes are *“Just listening to my body and make sure I get enough sleep”*, but for some even with sleep, the situation was exhausting *“I have good sleeping habits, eat well and exercise but I still feel absolutely mentally and physically exhausted”*. Some sought help to sleep, including medication and hypnosis *“When my sleep was affected, I took melatonin”*; *“I also listen to hypnosis for sleep and relaxation at bedtime”*. While the use of melatonin is readily available and common in some countries, prescriptions are needed for such medication in others. Some used less healthy methods to support sleep such as *“Drinking wine to get to sleep”*. Participants indicated they attended courses to support their self-care including wellbeing and mindfulness sessions.

While many strategies for unwinding and ensuring good self-care outside of work were noted, some did not use or report any strategies *“No strategy (no travel, no sport, no restaurant, no show, etc.), just exhausted”*, *“I’ve utilised almost no self-care strategies, which is why I’m in the mess I’m in I guess”*. Some recognised the importance of self-care strategies, but under the circumstances struggled *“Despite knowing the benefits of self-help strategies etc. – Have been struggling to engage in these due to low mood and feelings of exhaustion”*.

Discussion

The responses and themes demonstrate a wide range of challenges faced by academic radiographers during the first year of the COVID-19 pandemic, but a wide range of coping strategies, which many employed to help them cope during this difficult period. The cessation of clinical placements for many student radiographers was particularly challenging, while the rapid move to virtual lectures, online assessments and the pressures brought through the lack of face-to-face contact with colleagues created large amounts of work and uncertainty.

Many student radiographers had their clinical placements cancelled in March 2020 due to the COVID-19, pandemic, in part because qualified staff needed to focus on caring for the influx of patients, who were presenting in a large numbers, with an excess case mortality rate.^{21,22} Many, universities ceased on-campus activities in many countries and along with this, the ability to undertake clinical skills training. Jaconia et al. noted the stress on students due to missed clinical opportunities as well as a higher



Figure 2. Self-care, well-being, and coping strategies utilised during the covid pandemic (themes shaded grey, sub-themes shaded white).

risk of burnout and anxiety for those exposed to frontline practice during the pandemic.⁷ Whilst Rainford et al. identified key challenges for students returning to practice during the pandemic.¹⁶

Despite these challenges, academic radiographers managed to deliver education ensure the graduation of final year students. Some students graduated early and joined an emergency register in the UK. Academics identified that they needed to offer support in this situation and students described a sense of loss about not completing their programme in a usual way.^{1,14,15,18,23}

The majority of respondents reported their workload had increased due to COVID-19, with a mixed impact on their work-life balance, which is in keeping with other studies.²⁴ Watermeyer et al. reported that online migration was seen as a challenge to academic roles and personal lives²⁵ and uncertainty was created for students, affected some groups more than others.^{18,26} Research was undertaken by a smaller percentage of academic radiographers in this survey than teaching, but as reported by other authors, most clinical research was disrupted and delays to studies had to be managed.²⁷

Many of the responses highlighted a range of coping mechanisms, with a minority indicating that they did not have a strategy for coping. Communication with colleagues was important and despite the additional layers of complexity imposed through remote working and covid restrictions, virtual social interactions were commonplace and valued by staff, which aligns with other studies.²⁸

A large number of responses cited exercise as an important coping strategy and this ranged from walking to exercise classes online. Shechter et al. also reported exercise and physical activity to be the most common coping behaviour undertaken by healthcare workers during the COVID-19 pandemic.²⁹ Many respondents described being in nature as one of their coping strategies. The positive impact of green spaces on wellbeing has been well evidenced^{30,31} and those lucky enough to have access to these during COVID-19 lockdowns clearly articulated the benefit the received from these. While the respondents explicitly did not mention the use of blue spaces including the sea and waterways, there is an evidence base relating to improving wellbeing, as seen for green

spaces.^{32,33} The way leisure time is used is important and Wijn-daele et al. described higher anxiety and stress in those who did not participate in sporting activities, but had similar amounts leisure time to those who did.³⁴

Leisure time and family time was important to many, as was making contact with friends, even if this meant virtually at some points during the duration of this study period and some respondents reported Mindfulness as a coping mechanism. This technique has been well evidenced to help with stress reduction for clinical and non-clinical problems.³⁵

There are a number of limitations to this study and these include the lack of a pre-pandemic baseline for comparison. However, the qualitative data suggests that many respondents feel that their roles became harder, more time consuming, and with much more uncertainty and change since the COVID19 pandemic, so there is reasonable confidence in the data. There are also a notable imbalance in the number of responses from different countries and COVID-19 rates in the early pandemic varied considerably across the world, so the experiences that different countries had may not be comparable and in fact, different regions in the same countries experienced different levels of prevalence and impact.

Conclusion

In conclusion, the COVID-19 pandemic resulted in a multitude of challenges for academic radiographers including moving curriculums and assessments online, rearranging disrupted placements and clinical skills time. However, the academic radiographers responding to the survey demonstrated a good range of coping strategies to support their wellbeing, many juggling home schooling outside the workplace. COVID-19 had a significant impact on academic radiographers and while many reported good strategies for coping, the level of pressure described in this survey is unsustainable. This study highlights the need to support academic radiographers to ensure a sustainable workforce. Future work needs to explore how academic radiographers are coping post pandemic along with exploring any resultant attrition to the workforce.

Conflict of interest statement

None.

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