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Lessons learned from the experiences of newly qualified therapeutic radiography students who transitioned to work during the Covid-19 pandemic

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ABSTRACT

Introduction: The Covid-19 pandemic raised profound questions regarding healthcare values and responsibility for managing collective and individual needs. This context presents a unique opportunity to explore the experiences of newly qualified therapeutic radiographers transitioning to work.
Method: An interpretivist qualitative design used one-to-one, semi-structured interviews. Questions based on previous findings and person–environment congruence theory focussed on how the reality of transition compared to expectations and the feelings and attitudes this transition generated. Data analysis used a thematic framework approach.
Results: Eleven participants had worked as new Band 5 therapeutic radiographers for at least 12 months in English and Welsh departments. Three related themes were: the transitional state (the psychological nature of transition); professional socialisation (integration was co-constructed by the individual and department, with some conflict evident between the needs of the two parties); motivation (data described a u-shaped arc in level of motivation towards learning, encompassing early aspiration, turning to apathy and then anticipation of new beginnings.)
Conclusion: Whilst a person's motivation relates to the extent that their expectations are met regarding the pace of professional development, preceptorship packages should support the psychological aspect of transition as much as external indicators such as competencies. Recognition of new registrants' individual skills and aptitudes at an organisational level is key to supporting integration.
Implications for practice: The pandemic could be seen as an extreme way to reduce a complex multifactorial transitional event to its constituent parts. Personalised one-to-one mentorship is likely to be the optimal way to support psychological aspects of transition for all preceptees. Senior teams can foster compassionate leadership that enables the sense of having a contributing role within the organisation, which recognises individual skills and aptitudes.

Introduction

A body of literature outlines the impact of Covid-19 on global radiotherapy practices.[1–3] Some innovations have remained post-pandemic,[4] presenting newly qualified therapeutic radiographers with challenges and opportunities.[5]

We have previously reported the expectations of a cohort of therapeutic radiography students immediately before they became registrants on the temporary Covid-19 HCPC register (referred to here as phase 1).[6] Based on these findings, and drawing on (person–environment) congruence theory, we theorised that a mismatch between individual student's expectations and the then reality in clinical departments would threaten professional socialisation and satisfaction; both of which can initiate withdrawal behaviours that precede staff attrition.[7] The current work investigates this proposition by revisiting the cohort to explore their individual experiences within the first 12 months of working as NHS therapeutic radiographers during the Covid-19 crisis.

Literature review

UK healthcare students were concerned about the impact of Covid-19 on their careers, with large-scale survey evidence of increased thoughts about leaving their profession.[8] Yet, almost three quarters of allied health professional student respondents remained confident that they would be supported in their first

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clinical post. From early in the pandemic there were convincing indications of potential benefits from a more blended transition from radiography student to newly qualified practitioner,[9] alongside challenges to learning and risk to health.[10]

We know that newly qualified radiographers benefit from a socially-integrated departmental culture that actively facilitates professional progression.[11] However, the negative effect of Covid-19 on the wellbeing of qualified radiographers[12] has stress tested the extent to which the needs of new graduates can be met by existing policies. Societal and organisational responses to the pandemic exposed deep questions about our health values and acceptance of risk.[13] The balance between collective and personal needs, and where responsibility for this lies, were brought into sharp focus. This context presents a unique opportunity to consider if/how our models for integration of newly qualified therapeutic radiographers can best support this transition. Particularly as new preceptorship guidelines[14] and suggested pathways move from the command-and-control measures adopted during the pandemic to a more compassionate workplace culture *than previously existed*.[15]

Our primary research question was *what were the experiences of new therapeutic radiography practitioners within the first* 12 months *of NHS working during the Covid-19 crisis?* Secondary research questions asked *how the reality of transition to work compared to prior expectations* and *what were the contexts that challenged and facilitated transition?* Study findings can inform support provided to meet the education, training and individual needs of new practitioners, so as to minimise demotivation and withdrawal behaviours.

Methods

An interpretivist qualitative design recognised that everyone was affected by the pandemic in some way(s) but that interaction of personal and work environment factors would likely shape experiences and attitudes during this unique period of professional transition.[16,17]

The current (phase 2) work re-visited the group of new registrants who were eligible to participate in our phase 1 study; referred to here as 'the cohort.' At this time, the cohort were working across a range of UK radiotherapy settings, presenting a natural opportunity to develop a rich understanding of the extent to which different work environments, cultures and managerial responses to the pandemic met a set of individual needs and ambitions.

Recruitment and consent process

Existing institutional ethical permission (13/05/2020 ref: REC728) and consent from the 11 student participants from phase 1 enabled invite to phase 2. The six members of the (N = 17) university cohort who did not take part in phase 1 were invited to participate via alumni channels. An ethical amendment (24/07/2021 ref: REC728a) approved specific research questions and participation of therapeutic radiographers, who were involved in working with/developing new registrants at their centre, in a phase 3 study. Phase 3 data are not presented here but did add discriminatory power regarding what might be typical experiences of professional transition before Covid-19 and what might be particular to pandemic working.

All potential participants who expressed interest were sent a study invitation with an electronic Participant Information Sheet and Consent Form. A mutually convenient time outside of work hours was agreed for interview on receipt of signed consent.

Data collection

One-to-one, semi-structured interviews were conducted online. Interview schedules had been developed by a study advisory group comprising the authors and NHS and PPI representatives. In line with person–environment congruence theory[17] and themes developed in phase 1,[6] questions for phase 2 focussed on how the reality of transition compared to prior expectations and the feelings and attitudes this generated. We were interested in preceptorship needs and what the challenges, or perhaps opportunities, had been during transition to professional practice.

Data analysis

Data were analysed using the framework approach,[18] which enables a consistent approach between data analysts. In brief, two researchers independently read each anonymised transcripts to note key concepts expressed. The preliminary analytical framework was dictated by the data whilst addressing predetermined research questions. Double-coded data were arranged in a framework with consistent wording established between transcripts and analysts. Relationships between codes and cases were reviewed to organise the data into more inclusive subthemes that could encompass recurrent patterns and discordant cases. Differing interpretations of the meaning, relevance and connections between codes and themes were refined through peer debriefing with the study advisory group until consensus was reached.

Findings

Nine of the 11 cohort members interviewed had participated in the phase 1 study. Two of the previous participants agreed to participate in phase 2 but did not arrange an interview date. Two members of the cohort who had not participated in phase 1 did participate in phase 2. Overall, eight participants were females and three males. Work experiences were gained at seven different centres in England and Wales. Participant quotes are anonymous to protect identities.

Three interrelated themes were generated: the transitional state (Table 1); professional socialisation (Table 2); motivation (expectation vs reality) (Table 3). Theory was used to provide analytical depth as to where experiences relate to individual, interpersonal, cultural, organisational or contextual aspects.

This theme focusses on the psychological nature of transition, which is largely absent from preceptorship literature.

Table 1
The transitional state themes.

Theme 1	Subthemes	Common codes
The transitional state	Meanings attributed to an undefined end to university life	Legacy of no graduation event bitterness, performance anxiety, psychological & emotional affect.
	Perceived lack of recognition of knowledge/skills/value	Undervalued, underappreciated, undermined. Peer comparison.

Table 2
Professional socialisation themes.

Theme 2	Subthemes	Common codes
Professional socialisation	Formal social integration • Person–Environment fit (supplementary congruence) • Organisation–Person fit (complementary congruence)	Bubbles preventing rotation & progression. Department staffing levels. Hierarchical cultures. Competing service and registrant needs.
	Informal social integration	Social integration barriers. Impact on AHPs of social restrictions outside work. Support groups.

Table 3
Motivation themes.

Theme 3	Subthemes	Common codes
Motivation (expectation vs reality)	Aspirations	Esteem. Motivation tied to anticipated learning.
	Apathy	Demotivation tied to reality of learning opportunity in department. Uneven patient flows – Unpredictability. Indirect impacts of Covid-19.
	Anticipation	Hopes for return to 'normality'. Renewed sense of purpose. Making professional plans/next steps.
	Pandemic as a learning opportunity	

Meanings attributed to an undefined end to university

Transition to qualified status was coloured by an undefined end to university, which for the majority who started work on the temporary register meant an initial 60:40 time split between university and NHS time. A minority of participants attributed positive meaning to the unexpectedly early start to work:

'' … it was a horrible thing that's happened, but it felt special to be a part of something like that, working at the beginning of it.''

More common was the symbolism of being "*robbed*" of recognition of academic achievement, which created a powerful legacy that could be keenly felt a year hence. That university *"fizzled out"*, *"like a placement that didn't stop"*, added to the concern that technically being students when starting might "*… affect the way that the staff might think of us."* Psychological (*"weird end"*), and confidence dimensions (*"felt undercooked"*) were also evident. Irrespective of individual affect from transition, the experience was blurred for all:

"So it has been really strange, actually realising that you're no longer a student and that you are classed as a staff member, because you couldn't socialise with staff properly outside of work and get to know people properly, it was that that made it more difficult because we were kind of all sticking in a university clique, because, you know, we hadn't had a definitive end to uni."

The consequence of a lack of closure was a sense of being caught in the space between the old university identity ending abruptly and a new professional identity not yet formed. This liminal state could manifest as a lack of confidence/reluctance to let go. It was notable how participant's internal processing of this phenomena, and by extension their descriptions of it, had to continually navigate the profound societal impacts of Covid-19:

"Obviously some people have had it a lot worse, and people that I have been working with have lost their jobs, or their lives … it makes missing the end of uni seem just ridiculous."

Perceived lack of recognition of knowledge/skills/value

This challenging transitional state could become an overtly distressing 'stuck' state when twinned with a perceived lack of recognition of one's professional knowledge and skills.

"… probably June to October, every day it was two Band 5s on triage. And it was really demoralising. Like, it was awful …. literally sat there taking people's temperatures, watching TV, and it … it wasn't even that it was the worst job in the world … I completely understand it. But it just felt very, "Oh, you're not … you're not really that respected."

Perceptions of underappreciation of professional status were evidenced by repeated allocation to menial tasks. Perceptions of being undermined were felt as a lack of trust in professional abilities, *"you're not yet ready for this"*, and a corresponding need to prove one's value to the department (even now this group of students are the 'covid kids'.) Perceptions of undervalue were associated with a lack of recognition of professional ambition that could be heightened by comparison with inter- or intra-departmental peers. Departments that made Covid-19 tasks voluntary, involving all grades, created a more inclusive environment that sought to recognise individual skillsets.

"We do tend to have a Band 7 as the 'green person', who would not have contact with the patient. Just because they can do adaptive matches, and they're more experienced imaging wise, but in terms of being in the room with the patients, all of the staff are treated the same."

Bridge's Transitional Model is an organisational theory that seeks to explain the psychology of individual transition to a new work situation.[19] According to this model (Fig. 1), the initial stage is paradoxically 'endings' as it involves letting go of the previous.[20] The meaning attributed to the undefined end to university appears to have made this difficult for some of our participants.

Two propositions implicit in Bridge's Model are that: (i) transition involves loss, and understanding what is lost for an individual provides a basis for support; (ii) that different paths can be used to navigate transition. Preceptorship packages that are sufficiently flexible to offer early individualised support may help radiographers psychologically shed their student identity more easily/definitively.[9] The intermediate 'neutral zone' in the model represents the psychological adjustment required to move from an old (student) to new (qualified) identity. This core stage of transition is where recognition for our participants – both within themselves and recognition from peers – of the professional value of our participants in their department was seen to be crucial to a more positive experience of the pathway into 'new beginnings'. This third stage is when people *'establish new roles with an*

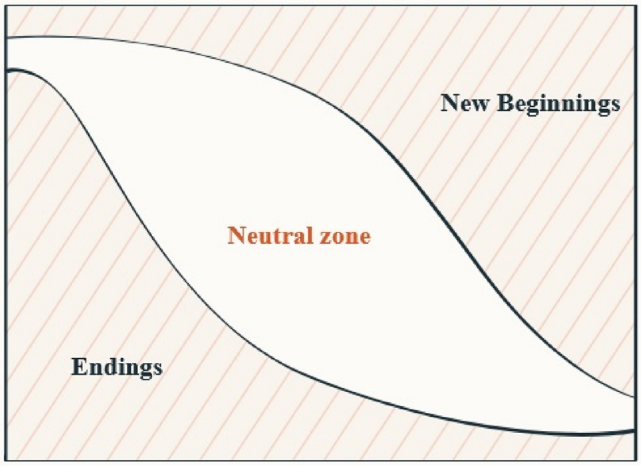

Figure 1. Schematic representation of Bridges Transition Model (1988).[19]

understanding of their purpose, the part they play, and how to contribute and participate most effectively.'[20]

This theme explores how the inner process of theme one is reflected in how participant experiences of professional socialisation were co-constructed by the individual and their department; with some conflict between the needs of the two parties.

Person–environment fit (supplementary congruence)

Visiting all departmental areas, if only briefly, was seen as vital to formal professional integration. Examples of where this was not possible included a pre-treatment planning team maintaining a strict 'bubble' and shielding staff working in an 'off limits' area. Bubbles were felt to be intrinsically problematic for anyone on a steep learning curve. The nature of work bubbles was a universal discussion point in our data, providing examples of both social bonding and distancing in action. Bubbles could be felt to protect less confident new registrants, but more fundamentally limited rotation through clinical areas and progression with competencies. This led to strongly perceived dissatisfaction and risk of stagnation.

> *"I should not have been left on the same machine for a year. They [senior] had other things on their mind"*

> *"Covid probably has hindered it [rotation] but I think … [pause] … there has been way more opportunity to get people through those things."*

In practice, pre-existing staff shortages or absence through mandated Covid-19 isolation meant that bubbles (and related tension) burst.

> *"Oh, well we're not moving people because of covid, and we're keeping people in bubbles of their teams." … well, that's what they're saying, but … in a week, you could be working on five different machines.*

When bubbles burst, participants often felt it beneficial to retain the same senior team member where possible, so as to foster mutual understanding and trust with the wider team.

The extent of fit between a person and the group of people who make up a work environment has been called supplementary congruence (Fig. 2).[16,21] Key indicators of supplementary congruence are individual performance level, satisfaction, and duration of employment. In our data, Covid-19 was seen as a contextual threat to this congruence, primarily through dissatisfaction when rotation/progression was slower or less comprehensive than expected. This situation had already prompted some of our participants to consider, or to move, to a different centre. Support to build supplementary congruence/address incongruence should be offered at an individual level, for example through a mentor or coach.

Organisation–person fit (complementary congruence)

The second professional socialisation subtheme centres on situations where social distancing protocols set the needs of new starters and the host service at odds. For example, forced changes to staff meetings creating an experience characterised as being isolating or hierarchical.

> "I think it's probably slowed it [integration], in the sense that because you're not meeting that variety of people and things are done remotely or virtually, or just band 5 together … and the opportunity to meet is perhaps less, or they're doing less meetings, and definitely less face-to-face things … because they can't take place."

This was seen to be exacerbated at one centre by an influx of new staff that made it difficult (but maybe not impossible) to rotate everyone at the expected pace. There was a perception that movement of new staff occurred only when the needs of department moved.

> "They discussed now that they're hoping to start rotating us properly through the department again, because it's come to a point where quite a few of us have been on call at weekends, and there's people not had their 2D imaging signed off, or they've not been Elekta trained … And that's become a problem. So it's not only becoming a problem for us, it's becoming a problem for management who are putting us in those on call roles."

Questions were often raised about the extent to which attribution of staffing issues to Covid-19 became a convenience over time. Importantly this acted to reduce participant trust in the host organisation and led some to feel that they had fewer opportunities to use their individual skills and attributes than expected.

> "We are usually appointed to be the student's mentor as well, while they're on the machine with us. … It's not the way that it would usually go if covid hadn't been a thing."

This limitation could also generate a keen appreciation of the needs of future student's transition. The fit between an individual's skillset and the needs of the host environment is called complementary congruence (Fig. 2).[16,21] The ideal situation of the two being congruent was comprehensively stress tested during the pandemic,[13] but ultimately revealed our co-dependence. The success of complementary congruence is determined at the organisational level: typically, through the culture established by senior teams. Influential work by the King's Fund[15] shows a progressive approach that champions the mutual benefits of a less hierarchical, more collaborative workplace culture, which should support newly qualified radiographers.[11]

The implication of congruence theory is that a person who feels comfortable (fits) will be more productive, committed and

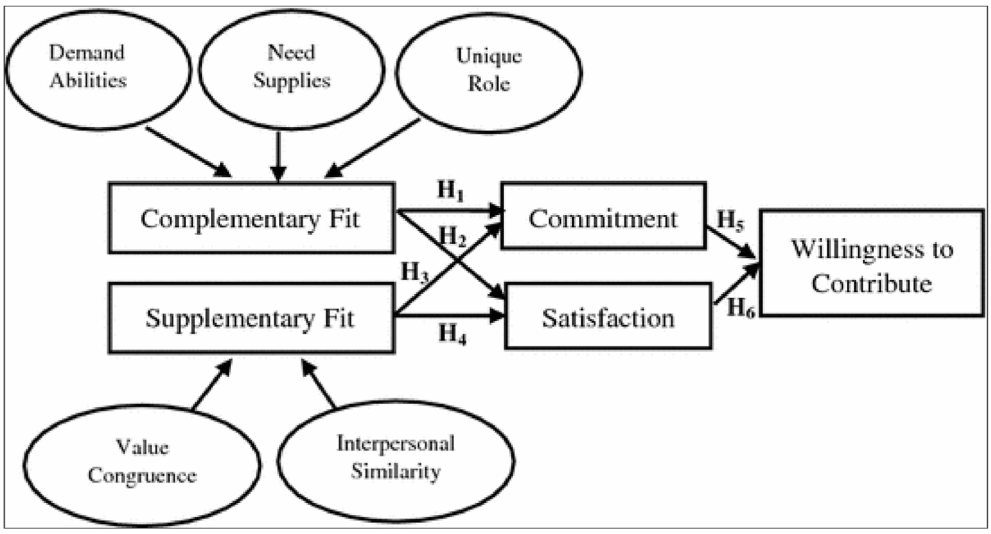

Figure 2. Theoretical model of Person-Environment Congruence (2015).[21]

satisfied.[17,21] A poor fit limits willingness to contribute: the very withdrawal behaviours that lead to instability and ultimately attrition.[7]

Informal social integration

One participant articulated the powerful conflict of being a new oncology professional using social distancing (in and out of work) to minimise the risk of infecting cancer patients, whilst recognising their behaviour hampered the very social integration that would have helped them be a better healthcare professional (or stay motivated at least.)

> "So there's a lot of onus on what the NHS are doing at the minute, how we're helping. So you feel that sort of, not pressure, but responsibility, level of responsibility to uphold those values. But it does make it difficult to definitely integrate and get to know people and things like that."

Many discussed reduced enjoyments from work due to social limits. In work this was experienced as reduced understanding of others point of view or expression, "Don't know whether to laugh with them [existing staff] or not." Reduced socialisation out of work prevented the anticipated end of the week rewards ("[covid] prevents unwinding") and exaggerated a sense of isolation that was felt keenly by those who had moved to a new town or city.

> "It's been very difficult, because you can't socialise outside of work. So the only thing you can do is see people in work, and then even in work, you're all geared up with all the PPE on and you're only with a bubbled team"

It is unsurprising that support networks were an aspect of this subtheme. Support comprising university peers was seen to be vital to counter isolation, when previously it may have hindered integration. Travel restrictions meant that those with nearby peers or family acknowledged that they were in a better position than others relying on social media to connect.

This third theme describes the impacts of theme two and related pandemic contexts on internally-felt motivation towards the support offered to develop new-registrant competencies.

Aspirations

Early aspirations focussed on a sense of public duty and esteem, amplified by pandemic 'superhero' contexts.

> "I felt needed by NHS. They [management] were really grateful for us being there and being able to start early."

Apathy

This (sometimes passive) expectancy turned to apathy as slower than expected clinical rotations arrested development, *"Stagnating!"* More reserved personalities who had initially thrived in a bubble soon felt restricted too.

> *"Not getting anywhere, some days just want to treat and go home."*

Our data describe a u-shaped arc of motivation, which also tracked the contemporaneous Covid-19 case numbers and deaths.[22] The nature of this relationship is not straightforward as motivation could partly relate to associated public health restrictions, the seasons, or the number of radiotherapy patients being referred. We do know that the mood of our participants dropped as Covid-19 cases rose sharply at the start of the second wave of autumn 2020.

> *"Stressed out round Christmas. Patients more stressed too."*

All participants reported lower than expected numbers of patients during lockdowns. Initially reduced patient contact could "help ease into the job" but soon was viewed as a demotivating limit to progression. Some participants linked workflow with the pandemic – patients not coming forward with symptoms/lack of other oncology services/increased proportion of palliative patients – but others did not explicitly acknowledge this impact. All anticipated a future increase in workload that would increase likelihood of service delivery problems and errors.

A more immediate demoralising aspect of the pandemic was having no common areas to meet staff in work. For example, *"we were having lunch sitting in our cars at the beginning. Horrible!"* This predicament could be perceived by participants as a failure to meet

the reported student expectation that they would be fully supported and respected whilst navigating Covid-19 in their new roles.[8]

Anticipation

The welcome precipitous fall in Covid-19 cases during Spring 2021 was concurrent with a sense of anticipation associated with progression into the 'new beginnings' stage of Bridge's Transitional Model (Fig. 1).[20] Participants began to understand their roles, and therefore established how they might contribute and participate most effectively. As a result, they felt a renewed sense of satisfaction and purpose, which included taking a more proactive approach to training needs, involvement in special interest groups and moving from *"just surviving to making plans."*

Pandemic as a learning opportunity

Coming to view the pandemic as a self-development opportunity was a common subtheme in our data. This was expressed as a heightened realisation of one's resilience and self-worth alongside a maturing view of the value of personal contact and connection.

> "I feel so lucky to be able to leave the house every day. Even if you're having a really bad day … even if you're feeling really rubbish about not being able to see your family, when you have, like, a really lovely patient that's so grateful for what you've done for them … it doesn't make it better, but it makes it easier."

Participants could find themselves challenging their assumptions regarding work-life balance and ambitions, whilst recognising that this may change again with circumstance.

> "I think covid has made me realise that work is not … I think before this, I would have said that I'm going to work my up and then go into this extra study and do this, and I think the last year has made me realise that actually, just the slower paced-life, where you see your family and friends more, and work is not everything, is definitely more what I want than the extra work and the extra money and stuff."

Limitations & strengths

Measures adopted to address threats to trustworthiness and credibility in our data include.

- Double coding of data to check validity of analytical framework developed within and across participants;
- An audit trail that included debriefing of theme development with the study advisory group;
- Field notes compiled post-interviews to reflect on potential bias relating to existing knowledge of participants and their work environments.

A further strength of the study is the longitudinal design and multiple work settings, however two of the participants were different between phase 1 and phase 2. The timing of data collection enabled exploration of recent experiences/feelings. However, the sequential collection of phase 3 data (from qualified radiographers involved in the development of new staff) has delayed the reporting of phase 2 findings here. Arguably, this distance enables a higher-level view of what can be learnt from the Covid-19 period. Finally, our theoretical approach to qualitative research enhances transferability beyond the pandemic.

Conclusions

With the great luxury of hindsight, Covid-19 can be seen as an epidemiologically classical coronavirus event but an extreme social experiment. We propose that Covid-19 pandemic acted as a stress test to the existing (formal and informal) systems for the integration of new therapeutic registrants into a department and thereby exposed the constituent parts of what is a complex multifactorial transition event to scrutiny. Attention was drawn to how the responsibility for development and motivation is shared between the person and the organisation. Interpretation of results in light of transitional and congruence theory have generated original insights with significance for support offered to new therapeutic radiographers. These insights are also relevant to the wider group of AHP preceptees, which encompass those returning to work after a break, working in the UK for the first time or joining a new organisation.[14]

1. Our key finding is that preceptorship programmes should support the psychological nature of transition as well as external indicators of competency. As this process is internalised, one-to-one personalised support is likely to be optimal. Importantly, our theorised approach means this insight translates beyond our new-registrant participants to any preceptee who transitions from an old to new identity.
2. Successful integration requires that personal skills and talents are recognised by peers. This helps the person develop the profound sense of a contributing role within the organisation. Whilst this is to some extent a shared endeavour, senior teams and managers lead in creating the prevailing environment and culture. A supportive environment is likely to be/feel less hierarchical, with compassionate and empowering leadership.
3. Expectation regarding development and learning that is not met is likely to contribute to a dip in motivation that may be steep and/or deep. Reduced satisfaction can indicate an unstable/poor fit between the person and their new environment (supplementary incongruence). A co-created individual needs development plan can help set realistic expectations on both sides and provide a common record for monitoring.
4. Our new graduates anticipated increased development opportunities post-pandemic. Withdrawal behaviours that underlie attrition are risked wherever this does not happen: a situation that might be aggravated in Wales where a requirement to work for two years in the Welsh NHS limits the movement seen in our English-based participants.
5. Opportunities for informal socialising with peers can positively impact the factors above. Although enforced on AHPs, the costs of isolation are not to be underestimated. A flipside being that Covid-19 highlighted a huge upside of our profession, where meaningful activities help reframe and refocus individual and collective values.

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Conflicts of interest

The authors have no conflicts of interest to declare.

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References

1. Spencer K, Jones CM, Girdler R, Roe C, Sharpe M, Lawton S, et al. The impact of the COVID-19 pandemic on radiotherapy services in England, UK: a population-based study. *Lancet Oncol* 2021;**22**(3):309–20. https://doi.org/10.1016/S1470-2045(20)30743-9.
2. Slotman BJ, Lievens Y, Poortmans P, Cremades V, Eichler T, Wakefield DV, et al. Effect of COVID-19 pandemic on practice in European radiation oncology centers. *Radiother Oncol* 2020;**150**:40–2. https://doi.org/10.1016/j.radonc.2020.06.007.
3. Piras A, Venuti V, D'Aviero A, Cusumano D, Pergolizzi S, Daidone A, et al. Covid-19 and radiotherapy: a systematic review after 2 years of pandemic. *2022 Clin Transl Imaging* 2022;**10**(6):611–30. https://doi.org/10.1007/s40336-022-00513-9.
4. Coles CE, Choudhury A, Hoskin PJ, Jones CM, O'Leary B, Roques TW, et al. COVID-19: a catalyst for change for UK clinical oncology. *Int J Radiat Oncol Biol Phys* 2020;**108**:462e465. https://doi.org/10.1016/j.ijrobp.2020.06.041.
5. Mc Fadden S, Flood T, Shepherd P, Gilleece T. Impact of COVID-19 on service delivery in radiology and radiotherapy. *Radiography* 2022;**28**(Suppl 1):S16–26. https://doi.org/10.1016/j.radi.2022.03.009.
6. Courtier N, Brown P, Mundy L, Pope E, Chivers E, Williamson K. Expectations of therapeutic radiography students in Wales about transitioning to practice during the Covid-19 pandemic as registrants on the HCPC temporary register. *Radiography* 2020;**27**(2):316–21. https://doi.org/10.1016/j.radi.2020.09.001.
7. Williamson K, Mundy LA. Graduate radiographers' expectations for role development - the potential impact of misalignment of expectation and valence on staff retention and service provision. *Radiography* 2010;**16**(1):40–7. https://doi.org/10.1016/j.radi.2009.05.001.
8. Health Education England. *'The impact of Covid-19 on students' survey: survey II key findings*. 2022. Available from: https://www.csp.org.uk/documents/nhs-hee-impact-covid-19-students-survey-ii-findings. [Accessed 14 October 2023].
9. Cushen-Brewster N, Strudwick RM, Doolan C, Driscoll-Evans P. An evaluation of the experiences of radiography students working on the temporary HCPC register during the COVID-19 pandemic. *Radiography* 2021;**27**(4):1000–5. https://doi.org/10.1016/j.radi.2021.03.003.
10. Rainford LA, Zanardo M, Buissink C, Decoster R, Hennessy W, Knapp K, et al. The impact of COVID-19 upon student radiographers and clinical training. *Radiography* 2021;**27**(2):464–74. https://doi.org/10.1016/j.radi.2020.10.015.
11. Chipere TGA, Motaung T, Nkosi B. Structuring improved work environments for newly-qualified radiographers. *Radiography* 2020;**26**(1):e14–7. https://doi.org/10.1016/j.radi.2019.06.005.
12. Flood T, McFadden S, Shepherd P. The impact of COVID-19 on the mental health of radiography staff and managers in Northern Ireland, UK: the radiography managers' perspective. *Radiography* 2022;**28**:S27–34. https://doi.org/10.1016/j.radi.2022.06.011.
13. Power N. *The politics of care: rethinking collective being in the wake of COVID-19*. 2020. Available from: https://ninapower.net/2020/10/26/the-politics-of-care-rethinking-collective-being-in-the-wake-of-covid-19/. [Accessed 20 October 2023].
14. Health & care professions council (HCPC). *Principles for preceptorship: helping health care professionals through career transitions*. 2023. Available from: https://www.hcpc-uk.org/resources/information/principles-for-preceptorship/. [Accessed 3 November 2024].
15. Bailey S, West M. *Learning from staff experiences of covid-19: let the light come streaming in: the King's Fund 2020*. 2023. Available from: https://www.kingsfund.org.uk/blog/2020/06/learning-staff-experiences-covid-19. [Accessed 20 October 2023].
16. Muchinsky PM, Monahan CJ. What is person-environment congruence? Supplementary versus complementary models of fit. *J Vocat Behav* 1987;**31**(3):268–77. https://doi.org/10.1016/0001-8791(87)90043-1.
17. Spokane AR, Mair EI, Catalano M. Person-environment congruence and Holland's Theory: a review and reconsideration. *J Vocat Behav* 2000;**57**(2):137–87. https://doi.org/10.1006/jvbe.2000.1771.
18. Gale NK, Heath G, Cameron E, Rashid S, Redwood S. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol* 2013;**18**(13):117. https://doi.org/10.1186/1471-2288-13-117.
19. Bridges W, Bridges S. *Managing transitions: making the most of change*. 4th ed. Boston: Da Capo Press; 2016. p. 40.
20. Bridges Transition Model. William Bridges Associates https://wmbridges.com/about/what-is-transition.
21. Shen X-L, Li Y-J, Sun Y. Knowledge contribution in customer-centric brand community: a person-environment-fit model. *Transforming healthcare through information systems: Proceedings of the 24th International Conference on Information Systems Development (ISD-2015). Track 7 General concepts realted to Managing IS developments. AIS eLibrary* 2015. Available from: https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1093&context=isd2014. [Accessed 28 September 2024].
22. *UKHSA COVID-19 in UK dashboard*. 2023. Available from: https://ukhsa-dashboard.data.gov.uk/topics/covid-19. [Accessed 14 July 2023].