The F3 phenomenon: Early-career training breaks in medical training. A scoping review

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Abstract

Background: Since 2017, more than 50% of UK doctors have undertaken a ‘Foundation 3 (F3) Year’ training break after completing their foundation programme (the first two years following graduation), rather than immediately enter specialty training. The reasons for, and consequences of, the growing F3 trend are largely unknown. This scoping review presents the current evidence and identifies future research in this field.

Methods: Following Arksey and O’Malley’s guidelines, 12 databases and three UK-based national postgraduate organisation websites were searched for articles published in English (final searches January 2020). Multiple search terms were used to capture articles relating to the ‘F3’ time-period, including ‘post-foundation’ or ‘pre-specialty’ training. Title, abstract and full-paper screening selected articles reporting any aspect of F3, including within a wider context (eg postgraduate training breaks), and then underwent mixed-methods analysis.

Results: Of 4766 articles identified, 45 were included. All articles were published after 2009; 14/45 (31.1%) were published in 2019. 27 articles reported research, and the remainder were opinion/commentaries. Specific personal (including demographic), professional and organisational factors, particularly the UK postgraduate training structure, are associated with undertaking an F3. The majority of F3 training breaks last 1 year and involve working (clinically or non-clinically) and/or travel. The decision to undertake an F3 is made either prior to or during foundation training. Evidence regarding the impact of F3 on health care service provision was limited but evenly balanced.

Conclusions: In summarising the existing F3 evidence, this review has highlighted important issues including health care workforce equality and diversity, training pathway inflexibility and the effect of negative early-career experiences on subsequent career decisions. More research is needed to understand the financial impact of training breaks on health care service provision, how training programmes must adapt to retain more trainees and the long-term effects of training breaks, such as F3, on subsequent career progression.
1 | INTRODUCTION

In 2005, the Modernising Medical Careers (MMC) initiative\(^5\) streamlined UK postgraduate medical training in response to long-standing concerns over doctors’ career progression and medical workforce planning. It introduced the foundation training programme (FTP) and subsequent run-through specialty training programmes (STPs)\(^6\) to expedite the completion of training and gain consultant or general practitioner (GP) status.

Following graduation from medical school in the UK, the FTP aims to ‘bring trainees up to the standards required for full GMC regulation’ in Foundation Year 1 (FY1) and ‘give candidates a range of practical, communication and decision-making skills’ in Foundation Year 2 (FY2).\(^1\)

The MMC proposals have been heavily and frequently criticised. The well-publicised Tooke report\(^5\) made 47 recommendations for change, including the uncoupling of the FY1 and FY2 whereby the latter would be absorbed into 3-year core training post in a broad clinical areas (e.g., medicine, surgery). These core training posts would individualise doctors’ training and facilitate movement between programmes (should the doctor wish to change specialty). These recommendations were widely supported by the medical education community.\(^5,6\)

Since the introduction of MMC doctors, perhaps aligned with Tooke’s criticisms, appear to have explored less streamlined career pathways. Over the past 10 years, the unwavering increase in the proportion of doctors taking time out between foundation and specialty training have seen it become the most popular postgraduate training break.\(^7\) The annual UK Foundation Programme Office (UKFPO) reports between 2017 and 2019 reflect that over 50% of doctors undertake an ‘F3 year’, thereby making this the new norm.\(^8\)

The MMC mandated to ‘address the uncertain career prospects of the ‘lost tribe’ of Senior House Officers’\(^5\) who were perceived to be undecided and reluctant to enter into STPs, but the F3 phenomenon has arguably created a new ‘lost tribe’. However, given that approximately 90% of post-foundation doctors enter into an STP within 3 years,\(^9\) perhaps F3s should be considered ‘temporarily misplaced’ rather than ‘lost’. So why is the F3 phenomenon a problem? Firstly, there is little known about why doctors undertake an F3 year and why the trend has increased so rapidly over the past decade: is F3 a choice or a necessity very early in a doctor’s career pathway?\(^5,10\) Secondly, what activities are undertaken during an F3 year? Are doctors taking a clinical break, or compensating for an FTP that does not fulfil their preparedness for STPs? Thirdly, does the magnitude of the trend challenge workforce, and consequential financial, planning locally and nationally? In the long term, it reduces, or at least delays, the number of consultants and GPs produced at the end of training. Finally, the label of the F3 ‘year’ is slightly reductive since ‘F4’ and ‘F5’ years (and beyond) are not unusual\(^5,9\) and hence in this review will be referred to as ‘F3’ as an umbrella term for all immediate post-foundation training breaks, regardless of their length.

Prior to this review, the authors became aware of one other review which included aspects of the F3 year. The Royal College of Physicians’ narrative review\(^11\) outlined their Student and Foundation Doctor Network workstreams and referenced the F3 year as a ‘growing workforce challenge’. They acknowledged the increasing popularity of F3 but stated there was ‘little research-based evidence to explain the underlying reasons for this’. The review suggested some theorised motivations for F3 and suggested better support for, and utilisation of, doctors outside of training posts to support the overall workforce. By contrast, our review aims to present the current evidence surrounding the F3 phenomenon more comprehensively to better equip doctors considering an F3 post, training programme leads and those with medical career advice responsibilities. The objectives of the review are to summarise what is currently known regarding the ‘who, what, where, when and why’ of the F3 training break and to identify gaps for future empirical research. The methodology chosen to achieve these aims and objectives is a scoping review.

2 | METHODS

The authors anticipated that this review would yield a heterogeneous collection of articles and, rather than addressing preconceived questions, these articles would identify knowledge gaps using a broad, flexible and more inductive approach. Scoping reviews are considered an appropriate methodology for this purpose, whereby article content is included regardless of characteristics such as article type or quality,\(^12\) but instead is presented accurately and avoids the limitations of absolute systematicity.\(^13\) That being said, scoping reviews should adopt a systematic methodology by including transparent, reproducible and comprehensive search strategies, take steps to reduce error and increase reliability, and extract and present results using a structured approach.\(^14\) To that end, this scoping review adhered to the Arksey and O’Malley’s\(^15\) guidelines.

2.1 | Stage 1: Identifying the research question

The research question of this scoping review was ‘What information has already been published about F3 phenomenon?’ This encouraged a broad search strategy, with no restrictions on article type (empirical research articles, editorials, reports and opinion pieces) or year of publication.

2.2 | Stage 2: Identifying relevant studies

To find relevant articles, nine literature databases were searched specialising in medicine, psychology and social science (MEDLINE, PubMed, EMBASE, CINAHL, PsycINFO, ERIC, ASSIA, Scopus, Web of Science). Grey literature, including conference proceedings and research dissertations/theses, was identified by searching ETHOS and OpenGrey databases. Google Scholar was also searched to capture any additional articles not identified by the more formal search tools. All of the above databases/resources were guided by our institution’s
library advice on literature reviews. Searches were completed across all databases between January 09, 2020 and January 17, 2020.

The authors were also aware that reports concerning the F3 phenomenon had been published by the British Medical Association (BMA), General Medical Council (GMC) and the UK Foundation Programme Office (UKFPO), and therefore, their official websites were also searched.

The search terms were applied as consistently as possible across databases, but allowed for minor formatting differences to optimise search results. The only inclusion criterion was that articles had to report one/more aspect of F3; hence, search terms included phrases describing ‘post-foundation’ or ‘pre-specialty’ training breaks as well as ‘F3’ synonyms. Appendix S1 contains the search terms used for each database and BMA website. The GMC and UKFPO websites were title-searched manually.

The only exclusion criterion was articles not written in English (to avoid translation error). Articles were not excluded based on article type or quality.

2.3 | Stage 3: Study selection

Each article identified from primary search was subjected to sequential title, abstract and full-paper screening to achieve final inclusion to the review. Initially, this was performed by HC. Uncertainty about inclusion of an article was discussed between the two authors and inclusivity favoured. Figure 1 demonstrates how articles were processed using an adapted PRISMA flow diagram.16 Appendix S2 contains the raw dataset for the included 45 studies.

2.4 | Stage 4: Charting the data

All included articles were logged into a spreadsheet for analysis. Each article was examined initially against predetermined items including year of publication/article type/methodology based on Arksey and O’Malley’s15 guidance, and the deductive themes were named and aligned directly to address the ‘who, what, where, when and why’ research objectives. Inductive sub-themes emerged through the analytical process, including issues regarding training programme structure and doctors’ perceptions of F3. The authors iteratively moved through the papers to ensure all extraction topics were comprehensively examined for each paper.

HC undertook initial data extraction for each paper, which was subsequently independently checked and verified by SA. Uncertainties were discussed until agreement was reached.
2.5 | Stage 5: Collating, summarising and reporting the results

In contrast to a systematic review, a scoping study presents an overview of all included material and does not seek to ‘synthesise’ or assess the quality of the evidence. A consistent approach to reporting the findings allowed comparisons across article types, and a mixed-methods approach, incorporating both content and thematic analyses, was adopted to analyse both quantitative and qualitative data. The content within a single article often contributed to more than one theme. For example, ‘why’ doctors undertake an F3 and ‘what’ they do during that time were often addressed within the same article. However, to avoid over-interpretation, making spurious links between themes or adopting a reductive stance, this review will present each theme individually and will include all content which contributed to that theme. This approach might lead to some repetition across themes, but is in keeping with scoping review methodology.

3 | RESULTS

Forty-five studies were included in this scoping review. The full data extraction table can be found in Appendix S1.

3.1 | Article characteristics

As demonstrated in Table 1, the majority of the 45 included articles were research papers (13 articles, 28.8%). Editorials/commentaries (10, 22.2%), reports (8, 17.8%) and personal opinion pieces (7, 15.6%) were also common. When categorised methodologically, the majority of articles were considered personal opinion (18, 40.0%), rather than incorporating research output from cross-sectional (14, 31.1%), qualitative (6, 13.3%) or cohort studies (2, 4.4%). Four articles reported or commented upon secondary data from other sources (8.8%). Only one review was found, which was narrative in methodology.

Over half of the included articles were written from a national perspective (27, 60.0%). The remainder were written from regional (5, 11.1%), local (3, 6.7%) or personal (10, 22.2%) perspectives.

All articles found in the literature search were published after 2009 with a clear surge in the number of articles from 2016 onwards. Almost one-third of all included articles were published in 2019 (14, 31.1%).

Only 3 articles (4.4%) cited one/more specific career theory.

Thirty-three (73.3%) articles reported research data, with just over two-thirds (23 of 33, 69.7%) reporting their own empirical (primary) research findings and the remainder reporting secondary data from other sources. Of those reporting empirical data, the number of study participants ranged from 13 to 38,905. FY2 doctors were the most common cohort to be enrolled across all primary empirical data articles (8 of 23, 34.8%). No studies recruited medical students.

3.2 | Thematic findings

Table 2 contains the results of the thematic analysis, displaying the six major themes, the nested sub-themes and the citation numbers of the articles which contributed to each. Figure 2 provides a visual overview of the spread of evidence within the review. Within each of the thematic segments of the star, a single dot represents an individual article which contributed to that theme. Most articles provided evidence for more than one theme. Within each theme, the articles are further differentiated by their focus on F3 topics. The innermost section contains articles which specifically report aspects pertaining to the F3 phenomenon (‘About F3’), whereas in the outermost section articles discuss aspects of F3 within a more generalised context (‘Around F3’). Examples of the latter include articles focusing on general career or training breaks, or issues linked to the medical workforce, and whilst both of these provide some insight, they do not relate exclusively to F3.

3.3 | Theme 1. Who is undertaking an F3?

Although Figure 2 and Table 2 demonstrate that many articles explored this theme, on closer inspection the vast majority of papers simply highlighted that the F3 phenomenon is increasing year-on-year.

Seven articles mentioned specific variables which increased the likelihood of doctors undertaking an F3, such as personal characteristics or career/training factors. Cleland et al. revealed that doctors who were ‘male, white, entered medical school as (high) school leavers and whose parents were educated to degree level’ were most likely to take a post-FTP training break. Doctors from geographical areas of low participation in higher education according to the Participation of Local Areas (POLAR) classification were significantly more likely to proceed directly into specialty training. According to the GMC, aside from career-related reasons, doctors consider a training break ‘in order to stay in a particular geographical area for family/personal reasons’ which are ‘compound if partners are in medicine too’.

Having demonstrated that doctors from higher socio-economic backgrounds are more likely to undertake an F3, Cleland et al. suggest that ‘widening access and encouraging more socio-economic diversity’ at medical school admission may redress the balance and encourage a higher proportion of F2s into specialty training posts.

Scanlan et al. revealed that doctors considering an F3 valued ‘supportive culture and excellent working conditions’ more than those who had applied for specialty training immediately post-FTP and that male doctors valued location and a supportive culture less than females. Another article by Scanlan et al. highlighted that negative experiences during FTP had immediate consequences on subsequent postgraduate career progression. Doctors who perceived strong organisational support during their FTP through positive relationships with senior staff and colleagues and felt valued in their
| Article characteristic                        | Variable                                           | Number of articles |
|----------------------------------------------|----------------------------------------------------|--------------------|
| **Type of Article (Total=45)**               |                                                   |                    |
| Research reporting                           | Original Research paper                            | 13                 |
|                                              | Report                                             | 8                  |
|                                              | Short Communication                                | 3                  |
|                                              | Conference Abstract                                | 2                  |
|                                              | Review                                             | 1                  |
| Non-research reporting                       | Editorial / Commentary                              | 10                 |
|                                              | Perspective piece / personal opinion               | 7                  |
|                                              | Web-based resource                                  | 1                  |
| **Year of Publication (Total=45)**           |                                                   |                    |
| 2010                                         |                                                    | 1                  |
| 2011                                         |                                                    | 1                  |
| 2012                                         |                                                    | 1                  |
| 2013                                         |                                                    | 3                  |
| 2014                                         |                                                    | 1                  |
| 2015                                         |                                                    | 2                  |
| 2016                                         |                                                    | 4                  |
| 2017                                         |                                                    | 5                  |
| 2018                                         |                                                    | 13                 |
| 2019                                         |                                                    | 14                 |
| **Article Perspective (Total=45)**           |                                                   |                    |
| National                                     |                                                    | 27                 |
| Personal                                     |                                                    | 10                 |
| Regional                                     |                                                    | 5                  |
| Local                                        |                                                    | 3                  |
| **Methodology/Research Design**              |                                                   |                    |
| Personal Opinion                             |                                                    | 18                 |
| Cross-sectional Study                        |                                                    | 14                 |
| Qualitative Study                            |                                                    | 6                  |
| Secondary Data Analysis/Report               |                                                    | 4                  |
| Cohort Study                                 |                                                    | 2                  |
| Review Article                               |                                                    | 1                  |
| **Career theories Underpinning Findings/Discussion of Article** | No theory mentioned                                 | 43                 |
|                                              | Theoretical lens of Perceived Organisational Support (POS) | 1                  |
|                                              | Career mobility theory                             | 1                  |
|                                              | Self-concept theory in career development          | 1                  |
| **Research Data Reported in the Article? (Total=45)** | No                                                   | 12                 |
|                                              | Yes                                                | 33                 |
|                                              | Empirical (Primary) Data                           | 23                 |
|                                              | Secondary Data                                     | 10                 |
| **Sub-Analysis: Primary Empirical Research Data Studies (Total=23)** | Number of participants | (Continues) |
role were more likely to apply for ‘higher training and/or intended to stay working in the NHS’.

Four articles suggested that F3 provides opportunities to explore career options, delay career decision making, and a ‘back-up’ plan in case of unsuccessful STP application.\(^1\)\(^2\),\(^2\)\(^1\),\(^2\)\(^3\),\(^3\)\(^4\),\(^3\)\(^5\) Lachish et al\(^2\)\(^1\) observed that doctors who were not employed in specialist training 3 years after graduation were more likely to agree with the statement ‘I had to choose my career specialty too soon after qualification’ compared to those in STPs (\(P\) < .001). Whereas doctors who had reached a specialty career decision by the end of their FTP strongly valued the time spent rotating through, or gaining knowledge of, that specialty.\(^3\)\(^3\) Doctors intending to apply for certain clinical specialties were statistically significantly more likely to undertake an F3 (\(P\) < .05).\(^2\)\(^3\) Academic and intensive care careers,\(^2\)\(^3\) or specialties with ‘higher risk of burnout, such as emergency medicine and surgery’\(^3\)\(^5\) were strongly associated with undertaking F3s, compared to specialties thought to attract more mature doctors into training, such as general practice, psychiatry or pathology.\(^2\)\(^3\)

### 3.4 | Theme 2. What are doctors doing, and where are they undertaking, their F3 post?

16 articles discussed the activities that doctors undertake during an F3.\(^8\)\(^9\)\(^10\)\(^12\)\(^22\)\(^24\)\(^26\)\(^29\)\(^30\)\(^35\)-\(^39\) Clinical F3 roles were mentioned most frequently, ‘the majority of doctors who take time out of training will be working in some other capacity during this time…in the NHS or working overseas’.\(^9\) These roles were mainly described as ‘staff grade’ or ‘fellow’ posts,\(^3\)\(^9\) both of which are synonymous with doctors working outside of a training programme who are employed directly by a hospital/general practice. ‘Non-clinical roles’, that is F3 posts without direct clinical responsibilities, included teaching, for example becoming a medical education fellow,\(^3\)\(^0\) writing (including both clinical journal articles and non-medical writing such as poetry),\(^3\)\(^7\) learning a language or dedicating time to research or further study.\(^3\)\(^6\) In the 2018 UKFPO Careers Destination Report,\(^8\) over 80% of FY1 doctors who intended to take a post-foundation training break intended to travel outside the UK, but it was not established whether this would be for work, leisure, or both.

Many articles alluded to the F3 period as a short-term option. The 2018 GMC Training Pathways report\(^7\) and Jewell and Majeed’s\(^2\)\(^9\) article offered specific statistics, reporting that approximately 90% of UK doctors entered an STP within 3 or 4 years following completion of their FTP, respectively. Cieland et al\(^2\)\(^3\) found that most doctors took a 1-year (38.8% of cohort) or a 2-year break (14.0% of cohort) following completion of their FTP.

Regarding the future trends of the F3 phenomenon, the 2018 UKFPO careers destination report found that around 19% of doctors intending to take time out of training immediately post-foundation planned to do so for more than 1 year.\(^8\) Similarly, a
| Theme | Codes | Major outcomes with theme | References |
|-------|-------|---------------------------|------------|
| 1. Who is undertaking an F3? | a) Trend of F3 Phenomenon | i. Current trend: Increasing number of doctors undertake an F3 | 8,9,11,24-32 |
| | | ii. Future trend: Increasing widening participation in medical school admissions could maintain workforce | 23 |
| | b) Personal characteristics | i. Higher socio-economic background/parental education, older age, undergraduate entrant into medical school, male—increased likelihood of taking an F3 | 9,21,23 |
| | | ii. Doctors who highly value work/life balance and working in a supportive environment—increased likelihood of taking an F3 | 33 |
| | c) Career/training factors | i. Doctors who had a poor experience during foundation training (single or prolonged event)—increased likelihood of taking F3 | 19 |
| | | ii. Certain specialty preferences or career uncertainty predict likelihood of taking F3 | 21,23,34,35 |
| | | iii. Using F3 as a ‘back-up plan’ if not successful at specialty application | 34 |
| 2. What are doctors doing, and where are they undertaking, their F3? | a) Activities | i. Clinical roles—working as ‘staff grade’, ‘fellow’ or ‘locum’ doctors | 8,10,22,26,30,35,36 |
| | | ii. Non-clinical roles | 8,24,30,36,37 |
| | | iii. Travel | 8,29 |
| | b) Length of time | i. Most doctors take up to three years between completing foundation training and entering specialty training | 8,9,20,23,24,29-31,38,39 |
| 3. When do doctors decide to take an F3? | a) Prior to starting work as a doctor | i. Doctors state intention to take a post-foundation training break at the beginning of their first foundation year | 10,32 |
| | b) During foundation training | ii. Doctors state intention to take a post-foundation training break during foundation training | 8,10 |
| 4. Why are doctors choosing to take an F3? | a) Push factors | i. Doctors feel they need a break from training | 9,11,20,29,31,41,42 |
| | | ii. Doctors don’t feel ready to apply for/enter specialty training | 10,11,20,21,23,26,29,32,34,39-49 |
| | | iii. Doctors feel unsupported/unappreciated in their current role | 9-11,19,20,38,46,50 |
| | b) Pull Factors | i. Personal factors, for example health/well-being, gain ‘control’ of working pattern and location | 9-11,22,35,37,40,51,52 |
| | | ii. Career progression opportunities | 11,24,36,41,44,45,48,53,54 |
| | | iii. F3 job (and working environment) characteristics | 8,10,25,33,40,42,55 |
| | c) Neutral factors | i. Opportunistic—Natural break in training programme. | 32,36 |
| 5. What is the relationship between F3 and career decision making? | | i. F3 post is superior for doctors’ personal and professional development compared to training post | 20,35,41,54 |
| | | ii. Popularity/increasing number of doctors taking F3 normalises it/increases acceptability | 32,36 |
| | | iii. Career progression concerns | 10,36,37,50 |
| | | iv. Lack of F3 structure/support around F3 career decisions | 10,11,34 |

(Continues)
study of Irish doctors found that training breaks were more popular and longer at the earlier career stages compared to higher training.\textsuperscript{39}

3.5 | Theme 3. When are doctors deciding to take an F3?

Only three articles (4.4\%) reported the timing at which doctors considered taking an F3. Two of these used the same data source, with one being the UKFPO Career Destination report,\textsuperscript{8} and the other article citing an earlier version of the same report.\textsuperscript{32} Both articles therefore reflect both the increasing trend of doctors intending to take an F3 when commencing their FY1 posts (6.4\% in 2017\% vs 9.6\% in 2018) and their reported destinations at the end of FY2 (13.8\% in 2017\% vs 14.4\% in 2018). Of note, the data collected at the two time-points are unmatched and therefore ‘do not reflect individual doctors’ intentions in comparison with their reported destinations’.

The third article contributing to this theme, the GMC Training Pathways 2 report,\textsuperscript{10} included trainees who had either considered an F3 during medical school and ‘the idea crystallised during their foundation training’, or had decided during their FTP. The latter group felt that their F3 plans were due to a ‘change in mind set’ arising

| Theme | Codes | Major outcomes with theme | References |
|-------|-------|---------------------------|------------|
| 6. What is the relationship between F3, Service Delivery and Training? | a) F3 and Service Delivery | i. Training posts underfilled due to F3 posts being taken up instead | 27,36 |
| | | ii. F3’s fill rota gaps created by under-appointment of specialty trainees (with financial and continuity-of-care effects on hospitals) | 27,36,42,52,53,56,57 |
| b) F3 and foundation training | | i. Foundation programme length | 47 |
| | | ii. Foundation trainee support | 28 |
| | | iii. Organisation of rotations | 47 |
| | | iv. Opportunity for skill development | 45 |
| | | v. Careers support | 23,26,36,41,52,58 |
| c) F3 and specialty training | | i. Application process | 48 |
| | | ii. Organisation of training programmes post-Modernising Medical Careers (MMC) | 23,26,42,49,51 |

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Thematic star chart of articles from literature review: About/Around F3}
\caption{Thematic star chart of articles from literature review: About/Around F3}
\end{figure}
from negative training experiences, an unsuccessful STP application or career uncertainty.

### 3.6 | Theme 4. Why are doctors choosing to take an F3?

This was the most heavily populated theme of the review, with factors coded into ‘push’, ‘pull’ and ‘neutral factors’. The latter focused on the opportunity for a training break given the natural division between completing the FTP and applying for an STP.22,36

‘Push’ factors included doctors wanting to step off the training programme ‘treadmill’.20 Burnout was reported as a significant contributor to needing time out of training,10,31 which was especially pertinent here given that ‘burnout seems also to peak at FY2’.32 Other push factors included low morale, feeling unappreciated20 or unsupported,19 feelings of isolation due to lack of interaction with peers and little support from seniors which impacted enjoyment at work.20 Doctors reported a lack of preparedness for entering, and even applying for, STPs due lack of specialty exposure and clinical experience during their FTP. Wakeling et al.43 presented the conflict within the FTP where consultants acknowledged the need for ‘variety’ to ensure different specialty exposure but simultaneously increasing popularity of the F3 makes it more ‘socially acceptable’32 as an alternative to entering an STP immediately post-foundation training.35

Doctors’ negative perceptions of F3 commonly related to its potential impact on subsequent career progression and the lack of structure/support during F3 posts. These concerns included ‘falling behind’ peers, taking longer to achieve Completion of Certificate of Training (CCT), receiving less support than an equivalent-level doctor enrolled in an STP, change of STP contract terms/conditions prior to applying to that training programme and how F3 is perceived on future job applications given that some senior doctors ‘couldn’t understand the appeal because they thought I was putting my career on hold’.34 Consultants echoed concerns that locum-style F3 posts do not provide the necessary supervision that junior doctors require.10,36

Supporting doctors to take a career break may support their long-term retention in health care,50 ‘letting junior doctors step off the training conveyor belt does not mean that they will all leave—some, like me, will return with a fresh outlook on their career’.37 Two articles called for more guidance for doctors considering an F3, particularly planning time abroad, working in UK non-training posts, revalidation and maintaining a licence to practise.34 Although arguably outside of the remit of the FTP, ‘the input of trainees who have experience of time out of training’34 perhaps through a ‘peer to-peer framework and a well-established mentoring scheme’11 could be useful to those planning a training break.

### 3.7 | Theme 5. What is the relationship between F3 and career decision making?

The majority of articles in this theme highlighted positive perceptions of, and reiterated some of the aforementioned reasons for taking an F3.

From a mental health perspective, specialty trainees who had undertaken an F3 were less likely to burnout than those who entered into an STP immediately post-FTP.35 Doctors who spent their post-FTP break outside of the UK reported ‘increased motivation, a greater sense of perspective, increased confidence, improved clinical skills and a better-informed decision on which specialty they wished to pursue’.53 Other countries’ health care systems, such as Australia, were considered to provide better working environments, training conditions and pay.20 In a similar mechanism to peer influence, the increasing popularity of the F3 makes it more ‘socially acceptable’32 as an alternative to entering an STP immediately post-foundation training.35

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### 3.8 | Theme 6. What is the relationship between F3, service delivery and training?

The articles in this theme established a supply/demand relationship between rota gaps and F3 posts: The increasing uptake of F3 posts contributes to STPs being underfilled which causes rota gaps at Trusts which accommodate specialty trainees.36 These rota gaps may be filled by short-term locum doctors who are unable to provide continuity of care and are expensive to employ.26 Alternatively, employing F3 doctors on fixed-term contracts to fill rota gaps may
be more cost-effective\textsuperscript{42,56} and establish a longitudinal working relationship with the department.\textsuperscript{52,53}

The F3 raises questions about the length and organisation of rotations within the FTP. Watts\textsuperscript{47} suggests that ‘although the foundation programme contains a variety of specialties, they are often grouped in a non-sensical fashion’. Watts also suggests that the FTP should be extended to three years, whereby FY2 and FY3 would include thematically arranged rotations to allow specialty exploration and support STP applications. Many other articles echo the sentiment that FTP organisation fails to support career decision making\textsuperscript{23,26,36,41,52,58} where taster sessions and careers advice are ‘not an adequate replacement for actual experience’.\textsuperscript{58} Hatley\textsuperscript{26} reinforces this opinion with a quote from the deputy head of the Wessex Foundation School who said, ‘The foundation programme was designed to give doctors a broad experience and to gain generic competencies not necessarily to set them up for a specialist career’. Finally, the FTP was also perceived as failing to support doctors to develop clinical skills beyond basic medical competencies, such as teaching, leadership and assessment, which are required both to enter and progress in STPs.\textsuperscript{45}

Specialty training programme organisation also appears to contribute to the F3 phenomenon. Firstly, regarding STP applications, more than a third of surgical trainees in a deanery-wide survey expressed that foundation training ‘had not provided enough time to prepare for CST [core surgical training] application’.\textsuperscript{48} More than half of these trainees would have ‘welcomed an extra year, helping to improve their portfolio’. The second issue is the perceived difficulty of changing from one STP to another, should doctors wish to change clinical career,\textsuperscript{23} which deters doctors who are uncertain about their future career choice from applying. One retired physician recalls that following the introduction of MMC ‘the voices of experienced NHS physicians and surgeons’ were ignored when they ‘warned of the dangers of forcing young people into decisions that would determine the course of their careers for decades’.\textsuperscript{51} The introduction of MMC was ‘intended to give better training for what had been called the “lost tribe” of senior house officers’.\textsuperscript{26} Although it could be argued that F3 doctors have replaced this cohort, Checkley and Remmington\textsuperscript{26} suggest that ‘they are not yet lost to the NHS.

4 | DISCUSSION

The findings pertaining to the ‘who, what, where, when, why’ research objectives have been addressed in the Results section through their dedicated themes. These results will now be discussed in the context of what is known about F3, what remains unknown and, to address the final research objective, what empirical research could be undertaken to further understanding of the F3 phenomenon.

4.1 | What does the evidence tell us?

The evidence supporting this F3 scoping review includes a combination of research reports and personal commentary. Figure 2 demonstrates that several of the review themes are heavily populated with articles but given that many of these are personal perspectives rather than report large studies, and many of national perspective articles include secondary data rather than empirical research, the quantity of data known about F3 is relatively small. However, given that F3 is such a new and individualised career choice, personal commentary articles arguably offer valuable qualitative information.

Figure 2 also highlights that many of the articles were not written specifically About F3 but addressed broader topics Around F3, therefore aiming to clarify the amount of evidence currently published specifically pertaining to F3. The increase in publications in more recent years may demonstrate the increased interest in this area of medical careers or reflect the contemporaneous nature of the F3 phenomenon.

Doctors’ dissatisfaction with the FTP and STPs appears to be a major contributory factor to the rise in F3 popularity. Many articles in this review implied that changes to these programmes would flatten the F3 curve and retain more trainees.\textsuperscript{25,45} Given that the FTP appears not to support career decision making\textsuperscript{21,43,47} and the STPs are viewed as binding contracts which doctors may struggle to move out of,\textsuperscript{49} an F3 provides time to evaluate career options before committing to a specialty.

The diversity of opportunities available to potential F3 doctors poses a challenge for postgraduate educators and deaneries in offering tailored advice.\textsuperscript{34} and such advice might be perceived controversially as deterring doctors from applying to STPs immediately post-FTP. However, all doctors with clinical responsibilities (and many with indirect responsibilities, such as medical education fellows) are contributing to the wider NHS workforce, and supporting non-training grade doctors\textsuperscript{26} must be considered to ensure retention in the long term.

Wider literature regarding STP applications reflects the importance of gaining experience and additional research qualifications,\textsuperscript{59} which does not seem well-supported by the current FTP structure. However, F3’s who obtain further skills, experience and qualifications might be inflating the standard of application for STPs each year, creating a self-fulfilling prophecy of ever-increasing competition with which FY2s cannot compete. Are these extra competencies/experiences are required to gain STP posts or are the expectations of what is required to gain an STP post unrealistic?

After all, the surgical trainees who expressed that they would have liked to have been given an extra year of time to improve their portfolios pre-STP application,\textsuperscript{48} were nonetheless all appointed to an STP post. Would additional portfolio-boosting time have been of any benefit? Perhaps securing one’s desired specialty post, in the desired location containing the desired rotations, one’s application must be very competitive.
4.2 | What remains unknown?

Many variables such as demographics, working environment preferences and chosen specialty have been independently identified as contributing to the likelihood of a doctor undertaking an F3. However, are there confounding influences play? For example, trainees who enter general practice are less likely to have undertaken an F3, but this specialty also attracts higher numbers of mature, graduate-entry female doctors and offers more career familiarity in terms of exposure to the specialty during undergraduate and postgraduate training. The exact opposite is true of specialties with high higher F3-rates, such as academia and anaesthesia/intensive care. The latter also have higher STP competition ratios, further encouraging F3s for career exploration and portfolio enhancement. Are some variables more predictive of doctors taking an F3, are they all interlinked, and what can be done to address this?

There is a paucity of evidence regarding the timing of doctors' decisions to undertake an F3 post, yet this is likely to be directly related to the reason for undertaking an F3. For example, doctors who plan their F3 year whilst still in undergraduate training may do so in response to the anticipated demands of working as a foundation doctor or to achieve a specific personal or professional goal prior to entering an STP. Alternatively, foundation doctors who had not considered an F3 year prior to starting work may have been influenced by their (negative) experiences of the FTP. As the 2018 UKFPO Career Destinations report contains unmatched data about F3 intentions at the beginning, and then at the end of, the FTP, it does not demonstrate how many doctors change their intentions during their FTP, and if so, why they do so.

The suggestion to extend the FTP to three years, aligning the latter two years with potential specialty interests, is similar to recommendations made by Tooke and would increase clinical experience, and support care decision making, prior to STP application. Although this would be ideal for foundation doctors who had chosen a specific specialty/general area (e.g., surgery, medicine), would this not compound the pressure on those uncertain about their career to declare specialty interests at an even earlier stage in their training?

4.3 | Areas for future research

Future F3 research could be guided by the least-populated themes shown in Figure 2 and also overlapping issues with other current topics of interest within medical education.

A larger-scale study could more comprehensively investigate retrospectively how long doctors take out of training following FTP completion, their objectives for the F3 and whether these were achieved. Although many articles assert that the F3 is used to explore career options, uncertainty is often not resolved at the end of an unstructured F3. So, does F3 serve its purpose for doctors?

The synergistic workforce relationship between the F3 and STP posts invites further exploration. STPs are underfilled, in part due to the appeal of flexible and incentivised F3 posts, and consequently, F3 posts plug these rota gaps. Do hospital Trusts benefit more from employing F3s than specialty trainees regarding continuity of care for patients, longitudinal employee/employer relationship and the additional leadership/management responsibilities built into F3 roles? More broadly, what financial and workforce implications are there on the NHS, for example training costs and delayed CCT dates?

Although burnout is the fastest growing reason for taking a break from training, statistics on fatigue during F3 are also increasing. The reasons for this are unclear, but may include lack of support/guidance surrounding the F3 and concerns about repercussions on subsequent applications or the lack of job security, and require further investigation.

With increasing importance being placed on equality, diversity and inclusion throughout all aspects of medical training, socio-economic factors and F3 doctors' demographic characteristics must be investigated in more granularity including F3 trends for doctors from Black, Asian and Minority Ethnic (BAME) backgrounds and those with specific health conditions/disabilities.

Very little is known about the career theories underpinning the F3 phenomenon. Further exploration of this would allow a better understanding of the current situation, predict future trends and allow transfer of findings to other contexts both in the UK and other countries regarding the personal, professional and organisational reasons underpinning doctors' decisions to not apply for higher training. The F3 phenomenon has been unwavering in its increasing popularity for the past 10 years. How will the COVID-19 pandemic in 2020 affect the trend? Will more doctors need a 'break' after completing their FTP and use the F3 to compensate for disrupted training and specialty experience, or be encouraged to enter STPs immediately to regain control over their career and ensure financial stability during this time of uncertainty?

4.4 | Strengths and limitations of the review

This review was approached using a systematic, well-established methodology, with associated reporting guidelines, searched a wide range of databases and did not exclude any article based on type or quality.

Levac et al's paper 'Scoping studies: advancing the methodology', which builds upon Arksey and O'Malley's original scoping review framework, recommends that two reviewers should review articles for inclusion within the 'Study selection' phase. Although there is no specific guidance on an optimal number of reviewers for the 'Charting the data' phase, other published scoping reviews appear to favour two authors. Furthermore, given that systematic reviews conform to much stricter methodological requirements to achieve their superior evidence status and also recommend two independent reviewers, we consider our review in this context methodology rigorous. Both authors approached this topic with a good understanding, but different with different
perspectives of, postgraduate medical training. HRC is a clinical academic currently in postgraduate medical training, whereas SA is an academic with an extensive background working in a postgraduate deanship. Neither author had completed an F3 post themselves and therefore did not bring that particular bias to the interpretation of the results.

This was not a systematic review, but given the contemporaneous nature of, and the lack of prior published literature reviews pertaining to, the F3 phenomenon a wider-reaching scoping review was considered more appropriate and useful to the readership. Some relevant articles may have been overlooked by this review: Despite using a wide-reaching search strategy, it was not as comprehensive as a systematic review. Given the increasing interest in this topic, related articles are likely to have been published after the review data collection date (January 2020).

This review presents the literature specifically surrounding F3, a UK-centric phenomenon. As such, the literature search strategy did not aim to discover articles pertaining to other postgraduate training breaks in the UK nor in other countries. Therefore, the review does not provide generalisable outcomes, but does provide transferable considerations pertaining to postgraduate training breaks both in the UK and other countries, including ‘what’ activities doctors might undertake during a training break and ‘why’ they may do so (ie the personal, professional and organisational reasons underpinning the decision to take a training break).

5 | CONCLUSION

There appear to be personal, professional and system-level influences on persons’ decision to take an F3 training break, yet not all of these aspects have been fully explored. By collating and summarising the current F3 literature, this review offers practical information to doctors considering an F3, employers wishing to recruit F3s and STPs/royal colleges wishing to better understand current trends in medical career progression and workforce planning. There are few empirical studies into the F3 phenomenon, but the increasing number of personal commentaries in this area suggests there is growing interest within the medical education community.

This scoping review has established the increasing popularity of the F3, typical demographics for doctors undertaking F3, and has summarised some of the reasons for, and issues surrounding, the phenomenon. There are many questions which remain unanswered, such as how F3 impacts health care service workforce and finances, whether doctors make and meet their personal and professional objectives during their F3(s), and how the rising F3 phenomenon is impacting competition at specialty training level. We encourage the medical education research community to address these questions through further empirical research.

CONFLICT OF INTEREST

No competing interests declared.

AUTHOR CONTRIBUTIONS

HRC planned the scoping review and collected the data. She undertook initial data extraction and analysed the data. She drafted the scoping review. SA provided guidance regarding search terms/databases. SA checked data extraction independently. He critically revised the draft of the manuscript. Both authors agree on the final version.

ETHICAL APPROVAL

Ethical approval was not required for this scoping review.

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SUPPORTING INFORMATION
Additional supporting information may be found online in the Supporting Information section.

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