

Accepted Manuscript

BJGP OPEN

Understanding the impact of professional motivation on the workforce crisis in medicine

Andah, Efiowan; Reeve, Joanne; Greenley, Sarah; Spears, Maria; Harvey, Kathryn; Essang, Blessing; Friend, Charlotte

DOI: <https://doi.org/10.3399/BJGPO-2021-0005>

To access the most recent version of this article, please click the DOI URL in the line above.

Received 04 February 2021

Revised 04 February 2021

Accepted 15 February 2021

© 2021 The Author(s). This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>). Published by BJGP Open. For editorial process and policies, see: <https://bjgpopen.org/authors/bjgp-open-editorial-process-and-policies>

When citing this article please include the DOI provided above.

Author Accepted Manuscript

This is an 'author accepted manuscript': a manuscript that has been accepted for publication in BJGP Open, but which has not yet undergone subediting, typesetting, or correction. Errors discovered and corrected during this process may materially alter the content of this manuscript, and the latest published version (the Version of Record) should be used in preference to any preceding versions

Understanding the impact of professional motivation on the workforce crisis in medicine

*Efioanwan Andah MBBS BSc (Hons) PGCert
Blessing Essang MBBS PGCert
Charlotte Friend MBBS BSc (Hons) PGCert
Sarah Greenley BA (Hons) MSc
Kathryn Harvey MBBS MPH
Maria Spears MBBS
Joanne Reeve MBChB MPH PhD FRCGP

*corresponding author: efioanwan.andah@gmail.com

Academy of Primary Care, Hull York Medical School, University of Hull, Cottingham Road, Hull HU6 7RX

Abstract

Background

The NHS is facing a workforce crisis. Responses to date have focused on improving recruitment of staff, but with less attention paid to retention.

Aim

To conduct a rapid review using Moss Kanter's 3M's model of workforce motivation as a sensitising framework to examine the current medical workforce crisis. Our work considers how insights from research in other professions offers new thinking for understanding what motivates doctors to continue working.

Design and Setting

Rapid literature review with secondary analysis of existing research examining reasons for leaving medicine.

Method

A systematic search strategy was developed with the aid of an Information Specialist. (Search terms: medical professionals, retention, NHS; exclusions: commentaries, non-medical professionals, non-English language etc; limited to post-1990). Applied to three electronic databases, MEDLINE, EMBASE and HMIC. This produced a dataset describing study design/quality; and factors related to motivation for leaving the medical profession. Comparative thematic analysis distilled core themes explaining the reasons for leaving and their relation to the 3M's model.

Results

Of 3389 abstracts identified, screening and assessment produced 82 papers included in the final analysis. Thematic analysis identified 4 key themes: low morale, disconnect, unmanageable change and lack of personal and professional support. The themes of mastery, membership and meaning were substantially present within the dataset.

Conclusion

The 3M's model of motivation can be applied to the medical workforce to understand retention issues. This work supports the development of targeted solutions to tackle the worsening workforce crisis.

Keywords

Workforce, job satisfaction, retention, NHS, general practice

How does this fit in?

This study offers new insights into the important and time critical problem of the medical workforce crisis, the challenge of improving staff retention. Current initiatives focus on extending training numbers and providing financial incentives. Our analysis highlights why these initiatives alone may not succeed. Future work should pay attention to understanding and addressing factors in the workplace that can undermine professionals' sense of worth and value, and the ability to exercise their distinct expertise within a broader community of practice.

Introduction

The NHS is dealing with a workforce crisis. Forewarned by Kings Fund in 2018,¹ we now see critical shortages within some specialities (general practice, psychiatry), disciplines (nursing notably community nursing), and geographical locations.² The immediate progression of doctors into specialty training after the foundation programme has fallen from 71.3% to 37.7% (2011 - 2018).³ With more than 100,000 NHS staff vacancies, this crisis poses a bigger threat to the NHS than underfunding.¹ Recent events such as Brexit and the Coronavirus pandemic further highlight the need for a strong healthcare workforce to deliver high quality and effective healthcare.⁴ In this study, we start by focusing on the medical profession.

Measures to tackle doctor shortages have focused on recruiting more staff: expanding both undergraduate and postgraduate training places⁵, and offering golden handshakes to GP trainees taking up posts in the hardest to recruit to geographical areas.⁶ Less work has been done to understand and address retention issues; with some exceptions - for example tackling the pension issues contributing to early retirement.⁷

Marchand's⁸ 2017 review of the workforce evidence described an emphasis on short-term policies responding to immediate needs; and noted that intrinsic factors (e.g. career opportunities and job satisfaction) are more important than extrinsic factors (e.g. golden handshakes) in influencing retention.⁸ Importantly, the review highlighted an overall lack of evidence to inform practice and policy.

Outside of the medical profession, there is rich literature describing how to motivate and retain employees.⁹ Based on a distillation of research across a range of professions, Moss Kanter identified three key factors needed to motivate professionals in the workplace: meaning, membership and mastery (*Table 1*). All are grounded within the intrinsic motivators flagged by Marchand⁸. Moss Kanter has used this model to understand *and address* workforce problems within a wide variety of businesses.¹⁰ To our knowledge, this model hasn't been applied to the medical profession.

INSERT TABLE 1

This study considered whether Moss Kanter's model of workforce motivation might help us understand and address the retention crisis within medicine. We identified two research questions; 1) what factors explain retention problems in the medical profession; 2) how do these map to the 3M's model.

Methods

We chose to undertake a rapid review in order to test the utility of the 3Ms model. The aims were:

- To describe factors stated as reasons for leaving the medical profession and the variables which predict/explain variation in responses.
- To analyse whether the 3M's model can explain current trends in retention.

With the aid of an information specialist (SG), database specific indexed and text word terms were used to draft a search strategy for OVID Medline which was then translated to EMBASE and HMC via OVID, based on inclusion and exclusion criteria (*Table 2-3*). Preliminary searches identified 'burnout' as a key search term to capture the literature on reasons for leaving. The search strategy combined three concepts: medical professionals AND retention/burnout AND NHS/United Kingdom (*Supplementary Box 1-3*). Databases were searched from 1990 to March 2020. Results were loaded into an EndNote library and duplicates removed. As a rapid review¹¹, no additional databases, resources or supplementary search methods were used.

INSERT TABLE 2 AND 3

Titles and abstracts of each results were screened for eligibility by EA with a random 25% doubled screened by SG. Second stage of screening used full text. Data extraction used the headings described in *Table 4*. Included studies were each extracted by one of five of the authors (EA, KH, MS, BN, SG), with 10% double reviewed with no disagreements arising.

INSERT TABLE 4

The 3M's model was used as a framework to sensitise our analysis of the dataset meaning that we specifically sought out data that described, explained or refuted the 3M's model. However, we also remained open to other explanatory themes emerging from the dataset.

Thematic analysis using the constant comparison approach¹² generated key explanatory themes across the dataset that explained retention issues. This was carried out by EA and JR with disagreements resolved through discussion. Cross-comparison between emerging descriptive themes and the full data, with particular attention to areas of dissonance and similarity, allowed the researchers to systematically identify core explanatory themes. Details of study design and findings were used to critically explain any differences in explanatory themes identified.

Our analysis produced core themes from the dataset describing reasons for retention problems in the medical profession. In our discussion, we will consider how these related to the 3M's principles.

Results

The results of our search are summarised in a PRISMA diagram (*Figure 1*). The eighty-two (82) final papers included staff from primary care (n=47)^{8, 6, 13-57} secondary care settings (n=14)⁵⁸⁻⁷¹ or both (n=21).⁷²⁻⁹² Studies used online/postal questionnaires (59), interviews/focus groups (18), systematic reviews (2) and a mix of these methods (3) to collect data, carrying out qualitative and quantitative analysis.

INSERT FIGURE 1

Thematic analysis of the final included dataset identified four core themes explaining retention problems:

1. Low morale
2. Disconnect

3. Unmanageable change
4. Lack of personal and professional support

Low morale

Low morale is expressed repeatedly across the dataset. Factors that contribute to low morale include loss of continuity in patient care⁴⁵, loss of autonomy in clinical practice,⁶⁵ high levels of burnout⁷⁸, low levels of job satisfaction⁷⁴, along with increased workload, long working hours and lack of resources.¹⁸ Analysis thus revealed the negative impact on doctors of doing an (almost) undoable job (Mastery) on their own sense of purpose⁴⁴ (Meaning) leading to burnout. These effects may be compounded by data which reported clinicians feeling undervalued by the health system.⁴⁵

Disconnect

Evidence across the dataset demonstrated a mismatch between doctor and patient expectations contributing to doctors' intentions to leave the profession. Professionals described concerns about differences between patient and professional understanding of what was possible; citing high patient expectations, dealing with difficult patients and fear of complaints or litigation as causes of stress and job dissatisfaction^{17 46}. Perceptions that the public were more demanding and less respectful of healthcare professions⁴⁶ were potentially compounded by negative portrayal of the profession in the media.¹⁷ Disconnect was also seen at the level of health systems with Dale et al²⁰ highlighting growth in patient expectations unmatched by governmental resource provision contributing to retention issues. Disconnect thus served to undermine Meaning and Mastery as motivating factors for the profession; but also, membership of a shared community between professionals and the public.

Unmanageable change

Whilst evolving demography and epidemiology make change inevitable, two factors were identified which were perceived to make this unmanageable: inadequate resource, and lack of control. The impact of discrepancies between need and resources was evident across the dataset. Examples included services being moved into primary care without the equivalent additional supportive resources¹⁷ and a failure to increase the availability or duration of appointments to meet the needs of an ageing population with complex needs.^{17, 44 22} Dale et al²⁰ reports increasing administration and bureaucracy not allowing for the pursuit of other professional interests contributing to retention issues within the GP workforce. At a service level, Lester et al³² described continual restructuring and uncertainty about the future, as well as increased administrative work and decreased time with patients. Unmanageable change undermines the exercise of Mastery, but also disrupts Membership of a community.

Analysis also revealed the impact of undermining professionals' sense of control on retention. Doctors described changing job role, often without prior consultation, as a factor behind reasons to quit. Rizan et al⁶⁸ highlighted regaining control as a reason for F2 doctors taking time out of training before deciding whether to pursue specialty training. Upton et al⁷¹ reported stress and burnout resulting from loss of control, with no direct relation to workload. Doctors reported concerns about increasing pressures on the NHS with regular restructuring and underfunding resulting in an inability to provide high quality healthcare as reported in Sansom et al.⁴⁴ Unmanageable change also impacts on Meaning as a motivating factor for the medical workforce.

Lack of personal and professional support

Lack of support at a personal and professional level for doctors was highlighted across the dataset, with increasing levels of burnout and poor mental health amongst doctors on the rise.^{34 41 51} Detrimental stress due to the demands and bureaucracy involved with revalidation, appraisals and exams, compounded by a lack of support, were reported by Dale et al.¹⁹ Doctors report lower levels of perceived support from NHS management compared with those outside of the NHS/abroad.⁹⁰ Lack of supervision and mentorship, both during clinical practice and with career progression contributed to trainees feeling unsupported.⁶⁴ Gregory et al⁷⁷ reported improved job satisfaction outcomes associated with interventions to address supervision and mentorship.

These effects are not equally distributed across the workforce. Sibbald et al⁴⁶ highlighted men reported less job satisfaction than women, although women were shown to have more mental health symptoms as seen in Newbury-Birch et al.⁶⁶ Poor work life balance and the demands of family commitments has also been shown to affect women more than men.³¹ Lower job satisfaction in ethnic minority doctors and those serving urban and deprived populations is also observed⁴⁶. Secondary care doctors self-reported high levels of job satisfaction in Sharma et al,⁶⁹ despite high levels of depersonalisation, emotional exhaustion and burnout.

Our theme of personal and professional support was seen to map to Moss's third category of Membership – the importance of building communities of practice which support and enable individuals to thrive in their role and motivate them to stay.

Discussion

In summary, our analysis described four key themes explaining reasons for leaving medical practice: low morale, disconnect, unmanageable change and lack of support. Our findings resonate with Marchand's⁸ review in highlighting the importance of intrinsic factors such as job satisfaction linked to workload explaining retention of doctors. We highlighted disconnect, unmanageable change and lack of personal and professional support as additional elements. Reflection within the team considered how the themes arising related to Moss Kanter's model of motivation (*Table 1*).

We now consider how Moss Kanter's work may offer new insights into how to motivate the medical workforce.

Meaning

Meaning is an important motivating factor in a workforce (*Table 1*), needed to enable both the mundane everyday tasks to continue as well as individuals to thrive.^{9, 10} Our analysis highlighted the impact of both unmanageable change and disconnect in undermining professionals' sense of meaning and purpose in their work. At a time of high workload and pressures, professionals describe uncertainty in whether their work is valued by both the public and the 'health system'. We described how a low sense of meaning may be contributing to the low morale that leads to burnout and leaving the profession. Applying Moss Kanter's model to our analysis, we highlight the need to pay attention to reviewing and revitalising professionals' sense of meaning in a rapidly changing health service context if we are to address the retention crisis. The challenges of recovering from COVID-19 underline the urgency of this work.

Mastery

For a workforce to remain motivated, the workplace must offer them opportunity to both utilise existing expertise and extend and develop their role. Our analysis highlighted several themes which undermine the exercise and development of mastery within the medical profession. Unmanageable change described a rapidly shifting service context which makes it increasingly difficult for doctors to exercise their current expertise, let alone extend and develop new areas such as portfolio careers.²⁰ Doctors feel unconfident in using their professional expertise for fear of missing the expectations⁹³ of patients or health systems. Our findings highlight a need to review and address the contextual factors that undermine the exercise of mastery (including pressure of workload and performance management targets) if we are to both motivate those still working within the profession and stem the tide of those leaving.

Membership

Moss Kanter described why it is important to attend to an understanding of community in addressing workforce motivation. Our themes of disconnect and unmanageable change highlight the significance of the speed and scale of change in the NHS in undermining a sense of community. This has been compounded by disruptions to personal and professional support. Reorganisation has been a regular feature in the NHS for some years, acutely compounded by the challenges of COVID-19. The focus to date has been on a goal of integration – smoothing the pathway for a patient through the service. We have seen a multitude of initiatives including development of new clinical roles, new networks and the movement of work between primary and secondary care settings. Whilst integration remains an important goal, our analysis and Moss Kanter's work reminds us that we must also pay attention to the impact on professional networks and sense of membership.

Our findings therefore suggest that addressing the retention crisis in the medical profession will need 3 distinct elements not currently addressed by workforce initiatives. COVID-19 recovery plans may provide an opportunity for new conversations between the profession, the public, and policy makers on the purpose of the NHS: revisiting and revitalising shared expectations of what it can, and can't do (MEANING & VALUE); and the distinct value of the medical profession in a wider multidisciplinary workforce (MASTERY & MEMBERSHIP).

We also recognise the scope to translate these 'higher level' discussions into actions at practice level. Moss Kanter¹⁰ offers rich descriptions of using the 3Ms model to make active improvements to workforce motivation in a number of case studies. Although much of her work is in the private sector, the principles could be translated into the NHS context. Initiatives included deprioritising working weeks to enable employees to undertake (lead) their own quality improvement projects; buddying and mentoring programmes which also support out of work activities and broader personal development; and active engagement during work time with community service activities.

Strengths and Limitations

This rapid review is a timely contribution to the factors affecting the current NHS workforce crisis. It introduces the 3Ms themes of motivating a workforce - meaning, mastery and membership. The review highlights how these themes might be utilised to aid in further discussions aimed at effectively tackling recruitment and retention in the NHS. The use of a systematic search and theory informed analysis, as well as its resonance with the results of the Marchand et al⁸ review are strengths of this paper.

Limitations include a narrow database search (EMBASE, MEDLINE and HMIC) due to the time constraint on completing this piece of work. Most of the included studies were questionnaires/surveys with no clear validation tools highlighted in some of the papers, possibly introducing a risk of bias. The intention of this work was to rapidly critically and transparently consider the potential for further, more detailed work.

Comparison with existing literature

Current literature such as Owen et al³⁵, Samson et al⁴⁵, Hann et al²⁷, Dale et al²⁰ have rightly focused on recruitment and retention issues in the workforce, with our findings similar to those of the Marchand et al⁸ review. This review is the first to examine whether the 3M's model proposed by Moss Kanter in non-healthcare settings can help in the understanding and effective tackling of the current NHS workforce crisis hence existing literature on this topic is not yet available.

Implications for research and practice

The worsening workforce crisis in the NHS is an issue that needs addressing urgently. Current strategies are not tackling this effectively with more healthcare professionals still leaving the NHS.

The current strategies to tackle the workforce crisis focus on hiring more staff, expanding the number of GP's in training, with a target of 15,000 new GP's between 2015 and 2020, as well as adding 1500 new places to medical schools.⁵ Yet our analysis shows that low job morale, disconnect, lack of personal and professional support and unmanageable change all contribute to demotivating a workforce.

New strategies need to be developed to continually provide a high quality, safe and effective National Health Service for all. Future work should pay attention to understanding and addressing barriers to the workplace supporting professionals' sense of worth and value, and ability to exercise their distinct expertise within a broader community of practice. Our analysis provides support for the use of the 3M's model in redesigning policy and practice in this area.

New research is now needed to examine the enablers and barriers to development of each element of meaning, mastery and motivation in the current workplace. Moss Kanter's model provides an evidence-based framework to support the systematic development and evaluation of retention interventions. Within the general practice setting, we propose the need for multi-professional and patient input into systematically describing what changes are needed, and developing, implementing and evaluating their effect. Drawing on Moss Kanter's experience¹⁰ we propose that this work needs to be 'bottom-up', led by – and so supporting the development of – communities of practice on the ground.

References

1. Beech J, Bottery S, Charlesworth A, et al. Closing the gap: key areas for action on the health and care workforce Health Foundation, The King's Fund, Nuffield Trust; 2019. Available from: <https://www.kingsfund.org.uk/publications/closing-gap-health-care-workforce>.
2. Royal College of Nursing. District nursing: Harnessing the potential. London: Royal College of Nursing; 2013.
3. UK Foundation Programme Office. F2 Career Destination Report 2018. Birmingham: UK Foundation Programme; 2018. Available from: https://www.foundationprogramme.nhs.uk/wp-content/uploads/sites/2/2019/11/F2-Career-Destinations-Report_FINAL-2018.pdf.
4. Dayan M. Brexit and coronavirus: how can the NHS avoid a fight on two fronts? . 2020. Available from: <https://www.nuffieldtrust.org.uk/news-item/brexit-and-coronavirus-how-can-the-nhs-avoid-a-fight-on-two-fronts>.
5. NHS England. Next steps on the NHS Five Year Forward View. 2017. Available from: <https://www.england.nhs.uk/five-year-forward-view/next-steps-on-the-nhs-five-year-forward-view/>.
6. Lee K, Cunningham DE. General practice recruitment - a survey of awareness and influence of the Scottish Targeted Enhanced Recruitment Scheme (TERS). Education for primary care : an official publication of the Association of Course Organisers, National Association of GP Tutors, World Organisation of Family Doctors. 2019;30(5):295-300.
7. BMA. Pension rules force consultants to retire early. 2019. Available from: <https://archive.bma.org.uk/news/2019/january/pension-rules-force-consultants-to-retire-early>.
8. Marchand C, Peckham S. Addressing the crisis of GP recruitment and retention: a systematic review. Br J Gen Pract. 2017;67(657):e227-e37.
9. Kanter RM. Three Things that Actually Motivate Employees. Harv Bus Rev [Internet]. 2013. Available from: <https://hbr.org/2013/10/three-things-that-actually-motivate-employees>.
10. Kanter RM. Evolve! Succeeding in the digital culture of tomorrow. Boston: Harvard Business School Press; 2001.
11. Tricco AC, Antony J, Zarin W, et al. A scoping review of rapid review methods. BMC Med. 2015;13(1):224.
12. Braun V, Clarke V. Successful qualitative research: A practical guide for beginners. London: Sage; 2013.
13. Appleton K, House A, Dowell A. A survey of job satisfaction, sources of stress and psychological symptoms among general practitioners in Leeds. Br J Gen Pract. 1998;48(428):1059-63.
14. Blades DS, Ferguson G, Richardson HC, Redfern N. A study of junior doctors to investigate the factors that influence career decisions. Br J Gen Pract. 2000;50(455):483-5.
15. Calnan M, Wainwright D. Is general practice stressful? Eur J Gen Pract. 2002;8(1):5.
16. Chambers R, Wall D, Campbell I. Stresses, coping mechanisms and job satisfaction in general practitioner registrars. Br J Gen Pract. 1996;46(407):343-8.
17. Cheshire A, Ridge D, Hughes J, et al. Influences on GP coping and resilience: a qualitative study in primary care. Br J Gen Pract. 2017;67(659):e428-e36.
18. Croxson CHD, Ashdown HF, Hobbs FDR. GPs' perceptions of workload in England: A qualitative interview study. Br J Gen Pract. 2017;67(655):e138-e47.
19. Dale J, Potter R, Owen K, Leach J. The general practitioner workforce crisis in England: a qualitative study of how appraisal and revalidation are contributing to intentions to leave practice. BMC Fam Pract. 2016;17:84.
20. Dale J, Potter R, Owen K, et al. Retaining the general practitioner workforce in England: what matters to GPs? A cross-sectional study. BMC Fam Pract. 2015;16:140.

21. Dale J, Russell R, Scott E, Owen K. Factors influencing career intentions on completion of general practice vocational training in England: a cross-sectional study. *BMJ open*. 2017;7(8):e017143.
22. Doran N, Fox F, Rodham K, et al. Lost to the NHS: a mixed methods study of why GPs leave practice early in England. *Br J Gen Pract*. 2016;66(643):e128-35.
23. Fairhurst K, May C. What general practitioners find satisfying in their work: implications for health care system reform. *Ann Fam Med*. 2006;4(6):500-5.
24. Fletcher E, Abel GA, Anderson R, et al. Quitting patient care and career break intentions among general practitioners in South West England: findings of a census survey of general practitioners. *BMJ open*. 2017;7(4):e015853.
25. Hall LH, Johnson J, Heyhoe J, et al. Strategies to improve general practitioner well-being: findings from a focus group study. *Fam Pract*. 2018;35(4):511-6.
26. Hall LH, Johnson J, Watt I, O'Connor DB. Association of GP wellbeing and burnout with patient safety in UK primary care: a cross-sectional survey. *Br J Gen Pract*. 2019;69(684):e507-e14.
27. Hann M, Reeves D, Sibbald B. Relationships between job satisfaction, intentions to leave family practice and actually leaving among family physicians in England. *Eur J Public Health*. 2011;21(4):499-503.
28. Huby G, Gerry M, McKinstry B, et al. Morale among general practitioners: qualitative study exploring relations between partnership arrangements, personal style, and workload. *BMJ (Clinical research ed)*. 2002;325(7356):140.
29. Iversen L, Farmer JC, Hannaford PC. Workload pressures in rural general practice: a qualitative investigation. *Scand J Prim Health Care*. 2002;20(3):139-44.
30. Jenson C, Reid F, Rowlands G. Locum and salaried general practitioners: An exploratory study of recruitment, morale, professional development and clinical governance. *Educ Prim Care*. 2008;19(3):285-302.
31. Leese B, Young R, Sibbald B. GP principals leaving practice in the UK: Similarities and differences between men and women at different career stages. *Eur J Gen Pract*. 2002;8(2):62-8.
32. Lester H, Campbell SM, McDonald R. The present state and future direction of primary care: a qualitative study of GPs' views. *Br J Gen Pract*. 2009;59(569):908-15.
33. Luce A, van Zwanenberg T, Firth-Cozens J, Tinwell C. What might encourage later retirement among general practitioners? *J Manag Med*. 2002;16(4-5):303-10.
34. O'Connor DB, O'Connor RC, White BL, Bundred PE. The effect of job strain on British general practitioners mental health. *J Ment Health*. 2000;9(6):637-54.
35. Owen K, Hopkins T, Shortland T, Dale J. GP retention in the UK: A worsening crisis. Findings from a cross-sectional survey. *BMJ Open*. 2019;9(2):e026048.
36. Riley R, Spiers J, Buszewicz M, et al. What are the sources of stress and distress for general practitioners working in England? A qualitative study. *BMJ open*. 2018;8(1):e017361.
37. Riley R, Spiers J, Chew-Graham CA, et al. 'Treading water but drowning slowly': what are GPs' experiences of living and working with mental illness and distress in England? A qualitative study. *BMJ open*. 2018;8(5):e018620.
38. Ross S, Gillies JC. Characteristics and career intentions of Scottish rural and urban GP registrars: cause for concern? *Health Bull (Edinb)*. 1999;57(1):44-52.
39. Rout U. Stress among general practitioners and their spouses: a qualitative study. *Br J Gen Pract*. 1996;46(404):157-60.
40. Rout U. Job stress among British general practitioners: Predictors of job dissatisfaction and mental ill-health. *Stress Med*. 1996;12(3):155-66.
41. Rout U, Rout JK. Job satisfaction, mental health and job stress among general practitioners before and after the new contract - A comparative study. *Fam Pract*. 1994;11(3):300-6.
42. Rowsell R, Morgan M, Sarangi J. General practitioner registrars' views about a career in general practice. *Br J Gen Pract*. 1995;45(400):601-4.

43. Sales B, Macdonald A, Scallan S, Crane S. How can educators support general practice (GP) trainees to develop resilience to prevent burnout? Education for primary care : an official publication of the Association of Course Organisers, National Association of GP Tutors, World Organisation of Family Doctors. 2016;27(6):487-93.
44. Sansom A, Calitri R, Carter M, Campbell J. Understanding quit decisions in primary care: a qualitative study of older GPs. BMJ open. 2016;6(2):e010592.
45. Sansom A, Terry R, Fletcher E, et al. Why do GPs leave direct patient care and what might help to retain them? A qualitative study of GPs in South West England. BMJ open. 2018;8(1):e019849.
46. Sibbald B, Bojke C, Gravelle H. National survey of job satisfaction and retirement intentions among general practitioners in England. BMJ (Clinical research ed). 2003;326(7379):22.
47. Sibbald B, Enzer I, Cooper C, et al. GP job satisfaction in 1987, 1990 and 1998: lessons for the future? Fam Pract. 2000;17(5):364-71.
48. Spiers J, Buszewicz M, Chew-Graham CA, et al. Barriers, facilitators, and survival strategies for GPs seeking treatment for distress: a qualitative study. Br J Gen Pract. 2017;67(663):e700-e8.
49. Spooner S. Unfashionable tales: narratives about what is (still) great in NHS general practice. Br J Gen Pract. 2016;66(643):e136-42.
50. Spooner S, Laverty L, Checkland K. The influence of training experiences on career intentions of the future GP workforce: a qualitative study of new GPs in England. Br J Gen Pract. 2019;69(685):e578-e85.
51. Sutherland VJ, Cooper CL. Job stress, satisfaction, and mental health among general practitioners before and after introduction of new contract. BMJ (Clinical research ed). 1992;304(6841):1545-8.
52. Sutherland VJ, Cooper CL. Identifying distress among general practitioners: predictors of psychological ill-health and job dissatisfaction. Soc Sci Med. 1993;37(5):575-81.
53. Taylor DH, Jr., Quayle JA, Roberts C. Retention of young general practitioners entering the NHS from 1991-1992. Br J Gen Pract. 1999;49(441):277-80.
54. Taylor Jr DH, Leese B. Recruitment, retention, and time commitment change of general practitioners in England and Wales, 1990-4: A retrospective study. Br Med J. 1997;314(7097):1806-10.
55. Taylor DH, Jr., Leese B. General practitioner turnover and migration in England 1990-94. Br J Gen Pract. 1998;48(428):1070-2.
56. Watson J, Humphrey A, Peters-Klimm F, Hamilton W. Motivation and satisfaction in GP training: a UK cross-sectional survey. Br J Gen Pract. 2011;61(591):e645-9.
57. Whalley D, Bojke C, Gravelle H, Sibbald B. GP job satisfaction in view of contract reform: a national survey. Br J Gen Pract. 2006;56(523):87-92.
58. Agius RM, Blenkin H, Deary IJ, et al. Survey of perceived stress and work demands of consultant doctors. Occup Environ Med. 1996;53(4):217-24.
59. Baldwin PJ, Newton RW, Buckley G, et al. Senior house officers in medicine: Postal survey of training and work experience. Br Med J. 1997;314(7082):740-3.
60. Bourne T, Shah H, Falconieri N, et al. Investigating burnout, wellbeing and defensive medical practice among obstetricians and gynaecologists in the United Kingdom. BJOG. 2019;126(Supplement 2):121-2.
61. Cleland J, Prescott G, Walker K, et al. Are there differences between those doctors who apply for a training post in Foundation Year 2 and those who take time out of the training pathway? A UK multicohort study. BMJ Open. 2019;9(11):e032021.
62. Dornhorst A, Cripps J, Goodyear H, et al. Improving hospital doctors' working lives: online questionnaire survey of all grades. Postgrad Med J. 2005;81(951):49-54.
63. Evans J, Lee P, Goldacre MJ, Lambert TW. Pre-registration house officers' comments on working in the NHS: a qualitative study of the views of UK medical graduates of 1999. Med Teach. 2004;26(3):250-5.

64. Gafson I, Currie J, O'Dwyer S, et al. Attitudes towards attrition among UK trainees in obstetrics and gynaecology. *Br J Hosp Med*. 2017;78(6):344-8.
65. Khan A, Teoh KR, Islam S, Hassard J. Psychosocial work characteristics, burnout, psychological morbidity symptoms and early retirement intentions: a cross-sectional study of NHS consultants in the UK. *BMJ open*. 2018;8(7):e018720.
66. Newbury-Birch D, Kamali F. Psychological stress, anxiety, depression, job satisfaction, and personality characteristics in preregistration house officers. *Postgrad Med J*. 2001;77(904):109-11.
67. Piracha S, Maqsood U, Saleem M, et al. A study of burnout and professional fulfillment among respiratory physicians (RP) in United Kingdom. *Thorax*. 2019;74(Supplement 2):A114.
68. Rizan C, Montgomery J, Ramage C, et al. Why are UK junior doctors taking time out of training and what are their experiences? A qualitative study. *J R Soc Med*. 2019;141076819831872.
69. Sharma A, Sharp DM, Walker LG, Monson JRT. Stress and burnout among colorectal surgeons and colorectal nurse specialists working in the National Health Service. *Colorectal Dis*. 2008;10(4):397-406.
70. Sharma A, Sharp DM, Walker LG, Monson JRT. Stress and burnout in colorectal and vascular surgical consultants working in the UK National Health Service. *Psychooncology*. 2008;17(6):570-6.
71. Upton D, Mason V, Doran B, et al. The experience of burnout across different surgical specialties in the United Kingdom: A cross-sectional survey. *Surgery*. 2012;151(4):493-501.
72. Clack GB. A retrospective survey of medical specialty choice and job satisfaction in a sample of King's graduates who qualified between 1985/86 and 1989/90. *Med Teach*. 1999;21(1):77-82.
73. Davidson JM, Lambert TW, Goldacre MJ, Parkhouse J. UK senior doctors' career destinations, job satisfaction, and future intentions: questionnaire survey. *BMJ (Clinical research ed)*. 2002;325(7366):685-6.
74. Davidson JM, Lambert TW, Parkhouse J, et al. Retirement intentions of doctors who qualified in the United Kingdom in 1974: postal questionnaire survey. *J Public Health Med*. 2001;23(4):323-8.
75. Davison I, McManus C, Brown C. Factors affecting recruitment into General Practice: a double binary choice approach. *Adv Health Sci Educ Theory Pract*. 2019.
76. Goldacre MJ, Davidson JM, Lambert TW. Career choices at the end of the pre-registration year of doctors who qualified in the united kingdom in 1996. *Med Educ*. 1999;33(12):882-9.
77. Gregory S, Demartini C. Satisfaction of doctors with their training: evidence from UK. *BMC Health Serv Res*. 2017;17(1):851.
78. Imo UO. Burnout and psychiatric morbidity among doctors in the UK: a systematic literature review of prevalence and associated factors. *BJPsych bulletin*. 2017;41(4):197-204.
79. Lambert TW, Smith F, Goldacre MJ. Changes needed to medicine in the UK before senior UK-trained doctors, working outside the UK, will return: questionnaire surveys undertaken between 2004 and 2015. *J RSM open*. 2017;8(12):2054270417738195.
80. Lambert TW, Smith F, Goldacre MJ. Why doctors consider leaving UK medicine: qualitative analysis of comments from questionnaire surveys three years after graduation. *J R Soc Med*. 2018;111(1):18-30.
81. McKinley N, McCain RS, Convie L, et al. Resilience, burnout and coping mechanisms in UK doctors: a cross-sectional study. *BMJ open*. 2020;10(1):e031765.
82. Moss PJ, Lambert TW, Goldacre MJ, Lee P. Reasons for considering leaving UK medicine: Questionnaire study of junior doctors' comments. *Br Med J*. 2004;329(7477):1263-5.
83. Osler K. Employment experiences of vocationally trained doctors. *BMJ (Clinical research ed)*. 1991;303(6805):762-4.
84. Rich A, Viney R, Needleman S, et al. 'You can't be a person and a doctor': the work-life balance of doctors in training-a qualitative study. *BMJ open*. 2016;6(12):e013897.
85. Smith F, Goldacre MJ, Lambert TW. Adverse effects on health and wellbeing of working as a doctor: views of the UK medical graduates of 1974 and 1977 surveyed in 2014. *J R Soc Med*. 2017;110(5):198-207.

86. Smith F, Lachish S, Goldacre MJ, Lambert TW. Factors influencing the decisions of senior UK doctors to retire or remain in medicine: national surveys of the UK-trained medical graduates of 1974 and 1977. *BMJ open*. 2017;7(9):e017650.
87. Smith SE, Tallentire VR, Pope LM, et al. Foundation Year 2 doctors' reasons for leaving UK medicine: an in-depth analysis of decision-making using semistructured interviews. *BMJ open*. 2018;8(3):e019456.
88. Spooner S, Gibson J, Rigby D, et al. Stick or twist? Career decision-making during contractual uncertainty for NHS junior doctors. *BMJ open*. 2017;7(1):e013756.
89. Swanson V, Power K, Simpson R. A comparison of stress and job satisfaction in female and male GPs and consultants. *Stress Med*. 1996;12(1):17-26.
90. Taylor K, Lambert T, Goldacre M. Career destinations, job satisfaction and views of the UK medical qualifiers of 1977. *J R Soc Med*. 2008;101(4):191-200.
91. Taylor K, Lambert T, Goldacre M. Future career plans of a cohort of senior doctors working in the National Health Service. *J R Soc Med*. 2008;101(4):182-90.
92. Taylor K, Lambert T, Goldacre M. Career destinations, views and future plans of the UK medical qualifiers of 1988. *J R Soc Med*. 2010;103(1):21-30.
93. Reeve J, Britten N, Byng R, et al. Identifying enablers and barriers to individually tailored prescribing: a survey of healthcare professionals in the UK. *BMC Fam Pract*. 2018;19(1):17.

	Definition	Explanation
Meaning	‘Repeat and reinforce a larger purpose’	<p>People are motivated to the tasks of daily work by their perceptions of the meaning behind their work – why it matters. People must be supported to develop and engage with an understanding of why what they do matters.</p> <p>If the positive impact of work done by an individual is emphasised regularly, even mundane tasks can become a means to a larger end and so become accepted into everyday actions.</p>
Mastery	‘Help people develop deep skills’	<p>People are motivated to do their job by a desire for mastery – the development and delivery of expertise.</p> <p>When people are given the adequate tools and support for their role, they are better able to complete the tasks with increasing efficiency; even those tasks which may be perceived as routine and mundane.</p>
Membership	‘Create community by honouring individuality’	<p>For people to be motivated to do their job, they must feel part of a community that supports and enables them to flourish both as an individual and collectively.</p> <p>Collective working enables individual strengths and values to be developed and utilised whilst contributing to broader goals.</p>

Table 1. Three factors described by Moss Kanter as driving motivation of a workforce.⁸

Inclusion Criteria	
Types of studies	Publication date post Jan 1990 – March 2020 (selected due to Calman report - pre modernising medical careers and new GP contract introduction)
	United Kingdom only (NI, Scotland, England, Wales, Channel Islands)
	English language only
	Studies using qualitative, quantitative methods, empirical studies, interviews, systematic reviews and original research. This includes mixed methods studies
Types of participants	Medical doctors including junior trainees, specialists, general practitioners. Mixed group of participants e.g. nurses and doctors only if results from doctors are explicitly separate from other participants
	Practicing in the NHS
Types of outcome measures	Intrinsic personal motivations e.g. personal attitudes, resilience, coping strategies, work/life balance
	Workforce e.g. job satisfaction, recruitment and attrition, financial incentives, early retirement, leaving
	Burden on health professionals

Table 2. Study inclusion criteria

Accepted Manuscript - BJGP Open - BJGP Open - 2021-0005

Exclusion Criteria	
Types of studies	Non-English language
	Published pre-1990
	Grey literature / not published in a peer reviewed journal
	Dissertations /theses
	Proceedings
	Commentary articles, written to convey opinion or stimulate research /discussion, with no research component
Types of participants	Non-medical health care professional, Allied health care professionals only
	Dentists, dental practitioners, vets, nurses, medical students
Types of outcome measures	Anything except doctors' perspective
	Switching between specialties
	Burden on patients, societal perspectives
	Economic burden at a society level e.g. costs to government or councils

Table 3. Study exclusion criteria

Study identifier	Title of paper, authors, year of publication, journal name
Data generation	Location, study method, interface – primary or secondary care, participants
Study outcomes	The main themes and findings of each paper were extracted to aid in explaining reasons for leaving medicine and whether the 3M's model can explain these trends. In extracting information from the data set, the researchers sought to identify described reasons for leaving the profession. Researchers were sensitized to the 3M's framework proposed by Moss Kanter, remaining open to the possibility of other issues outside of the framework arising.

Table 4. Data extraction criteria

Accepted Manuscript - BJGP Open - BJGP 2021-0005

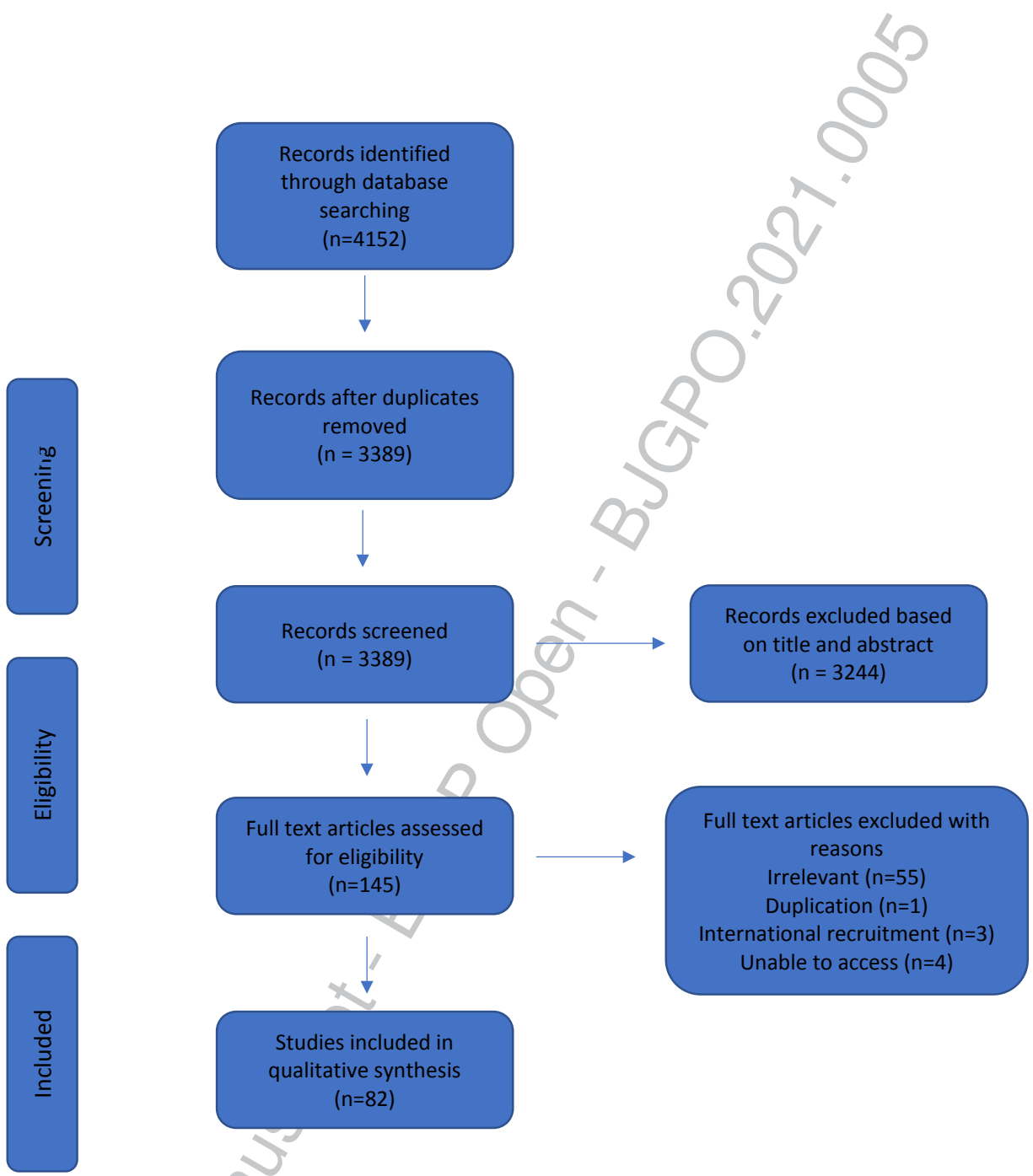


Figure 1. Flow diagram of study selection process.