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Returning to clinical work and doctors' personal, social and organisational needs: a systematic review

Chris Attoe ,[1,2,3] Raluca Matei,[2] Laura Thompson,[2] Kevin Teoh ,[4] Sean Cross,[1,3] Tom Cox[2]

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[1]Maudsley Learning, South London and Maudsley NHS Foundation Trust, London, UK
[2]Centre for Sustainable Working Life, Birkbeck University of London, London, UK
[3]Psychiatry Psychology and Neuroscience, King's College London Institute, London, UK
[4]Department of Organizational Psychology, Birkbeck University of London, London, UK

Correspondence to
Chris Attoe;
chris.attoe@slam.nhs.uk

ABSTRACT

Objective This systematic review aims to synthesise existing evidence on doctors' personal, social and organisational needs when returning to clinical work after an absence.

Design Systematic review using Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.

Data sources AMED, BNI, CINAHL, EMBASE, EMCARE, HMIC, Medline, PsycINFO and PubMed were searched up to 4 June 2020. Non-database searches included references and citations of identified articles and pages 1–10 of Google and Google Scholar.

Eligibility criteria Included studies presented quantitative or qualitative data collected from doctors returning to work, with findings relating to personal, social or organisational needs.

Data extraction and synthesis Data were extracted using a piloted template. Risk of bias assessment used the Medical Education Research Study Quality Instrument or Critical Appraisal Skills Programme Qualitative Checklist. Data were not suitable for meta-analyses and underwent narrative synthesis due to varied study designs and mixed methods.

Results Twenty-four included studies (14 quantitative, 10 qualitative) presented data from 92 692 doctors in the UK (n=13), US (n=4), Norway (n=3), Japan (n=2), Spain (n=1), Canada (n=1). All studies identified personal needs, categorised as work–life balance, emotional regulation, self-perception and identity, and engagement with return process. Seventeen studies highlighted social needs relating to professional culture, personal and professional relationships, and illness stigma. Organisational needs found in 22 studies were flexibility and job control, work design, Occupational Health services and organisational culture. Emerging resources and recommendations were highlighted. Variable quality and high risk of biases in data collection and analysis suggest cautious interpretation.

Conclusions This review posits a foundational framework of returning doctors' needs, requiring further developed through methodologically robust studies that assess the impact of length and reason for absence, before developing and evaluating tailored interventions. Organisations, training programmes and professional bodies should refine support for returning doctors based on evidence.

Strengths and limitations of this study

⇒ Data sources included 9 databases (n=1684) plus pages 1–10 of Google, Google Scholar and reference list and citation checking (n=18).
⇒ Twenty-four included studies (14 quantitative, 10 qualitative) presented data from 92 692 doctors.
⇒ Risk of bias was assessed using dedicated tools for qualitative and quantitative studies (CASP and Medical Education Research Study Quality Instrument respectively), identifying low-quality quantitative studies and high-quality qualitative studies.
⇒ One researcher led on study screening and data extraction with a second independent researcher completing these steps with subsamples, finding high inter-rater agreement (K=0.743 and K=1) and consensus.
⇒ Meta-analyses were not possible due to wide-ranging study design and mixed methods data.

INTRODUCTION

As increasing numbers leave the medical profession and population health needs grow, the importance of sustaining and expanding the medical workforce has considerable implications for global health.[1–3] Recruitment, retention and professional support are crucial to the sustainability of medical workforces.[4] There are around 53 000 trainee doctors in the UK National Health Service, with 10% absent from clinical work each year.[5] Understanding doctors' needs when returning to clinical work after an absence is essential to their working lives and to enhancing recruitment and retention.[6–9] Support during this potentially challenging time can allow doctors to feel valued, develop strengths from their experience of absence, and access resources to improve the return to work (RTW) journey, subsequent careers and patient care.[10] Support can mitigate disadvantage from changing circumstances relating to RTW, such as caring responsibilities, stigma towards illness, gender discrimination

and career progression.[4] The COVID-19 pandemic has encouraged doctors to return in record numbers and highlighted the need to support this group.[11]

However, there is a lack of evidence on the needs of doctors returning to work, and thus the support required. UK-based evidence shows absences from clinical work are due to ill-health; parental leave; fitness-to-practice issues; carer responsibilities; and education, research or career breaks.[4 12] During this time, clinical skills can fade and doctors report issues relating to clinical skills and knowledge.[4 13] However, more research is required to understand the different work-related needs of returning doctors. Drawing on the research on sickness absence, career breaks and leavers, and the views of medical supervisors and support services, these needs can broadly be categorised into personal, social and organisational needs. Personal needs include psychological considerations of identity, emotional needs and self-efficacy, alongside practical considerations of childcare, finance and work–life balance (WLB).[14–16] Social needs include support from family and friends, senior colleagues and peers or team members, as well as the views and attitudes of these groups towards the returner and their situation.[17–19] Organisational needs range from workplace culture and support, to job design, working conditions, control and flexibility.[3 10 20] However, this evidence remains preliminary, does not focus directly on RTW and does not constitute high quality empirical evidence.

Nonetheless, professional guidance exists on measures to support returning doctors, alongside examples of ad hoc support programmes, tailored training and keeping-in-touch initiatives.[4 6 21] While these efforts represent the perceived knowledge of professional bodies and doctors' reported preferences, a robust evidence base is lacking, presenting a challenge to those aiming to support doctors with scant evidence to drawn on.[4 6] Tailored evidence involving doctors returning to work that acknowledges the unique context of the medical profession is required, including: the nature of clinical work; long training period; regular work rotations and unique career path; complex relationships between employers, training programmes, professional bodies and regulators; and high likelihood of a break from clinical work during training. This systematic review aims to collate and synthesise the evidence on doctors' personal, social and organisational needs when returning to clinical work.

METHODS

This systematic review was aligned to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 checklist[22] and was not registered (see online supplemental appendix 1).[22]

Information sources and search strategy

Nine electronic databases were searched up to 4 June 2020—AMED, BNI, CINAHL, EMBASE, EMCARE, HMIC, Medline, PsycINFO, PubMed (see table 1, full search strategies available as online supplemental file). The reference lists and citing papers of identified articles were searched for relevant studies. Grey literature searches included the first 10 pages on Google and Google Scholar.

Table 1 Search terms

	Search terms
Population	Doctor* OR Physician*
	AND
Condition	"Back-to-work" OR "Back to work" OR "Return-to-work" OR "Return to work" OR "Return to practice" OR "Return to training" OR "Job return" OR absen*
	AND
Outcomes	"Job resource*" OR "Work resource*" OR Psychosocial OR "Psych* need*" OR "Personal need*" OR "Psych* issue*" OR "Personal issue*" OR "Psych* concern*" OR "Personal concern*" OR Psychological OR "health need*" OR "social need*" OR "organisation* need" OR "work* need"
	NOT
	Patient

Database searches yielded 1684 studies. CA screened all titles and abstracts, then all full texts based on eligibility criteria (see figure 1). RM screened a random sample of 20% of studies at both title and abstract, and full text stages. Substantial inter-rater agreement was found (K=0.743 and K=1 respectively). SC also screened 20% of studies at full text stage with good inter-rater agreement compared with CA (K=1).

Eligibility criteria

Identified studies had five inclusion–exclusion criteria applied. Academic or grey literature must have presented quantitative or qualitative data and analysis. Study participants must have been doctors sharing personal experiences; students or doctors participating as supervisors or occupational health (OH) experts were excluded. Included studies must focus on doctors intending to or having returned to clinical work, while absences may be for any reason. Outcomes must have related to personal, social or organisational needs. Studies must be available in English.

Quality, bias assessment and data extraction

The Medical Education Research Study Quality Instrument (MERSQI) was used to assess quality and bias for quantitative studies.[23] This 10-item methodological quality checklist includes study design, institution(s), response rate, type of data, content and criterion validity, data analysis and outcome levels, with scores from 5 to 18 (low to high quality).

Qualitative studies were assessed using the Critical Appraisal Skills Programme Qualitative Checklist,[24] referenced by the Cochrane Collaborative Qualitative Methods Group.[25] Ten questions cover aims, design, data collection, analysis and interpretation, ethics and bias, and are answered 'yes', 'no' or 'can't tell' with 'yes' representing higher quality. No scoring system is suggested, rather criteria guide subjective appraisal of low to high quality.

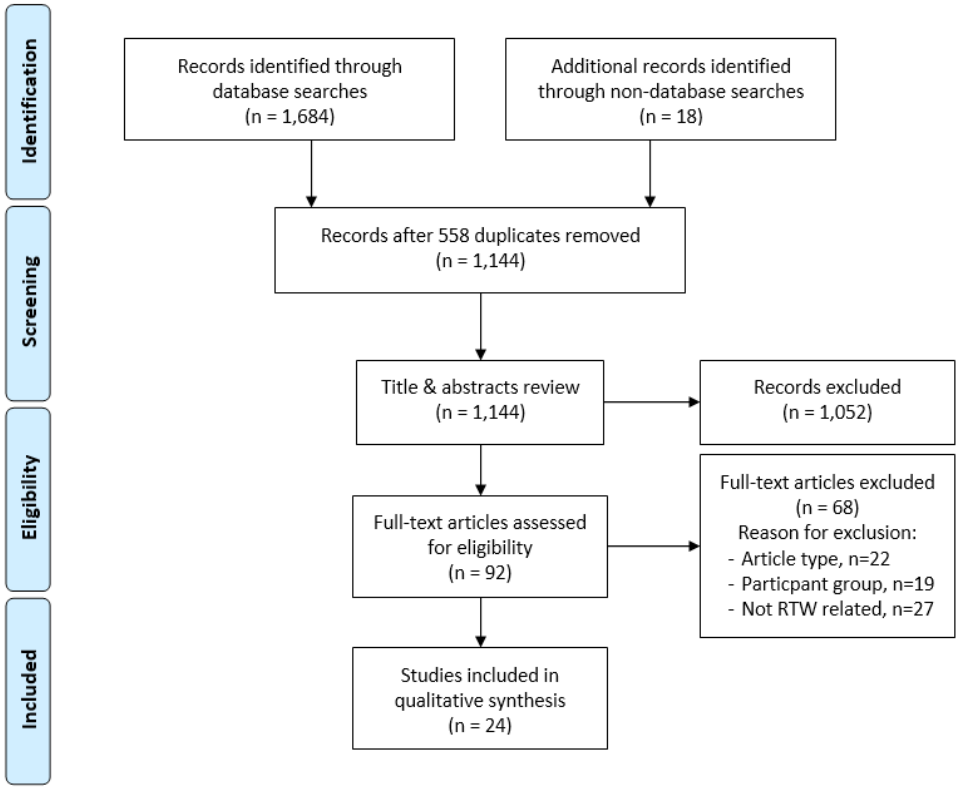

Figure 1 Flow chart of study selection process. RTW, return to work.

A data extraction form was piloted and subsequently used for included studies. Extraction was completed by CA and captured only data relevant to the study aim, including biases.[26] Data extracted underwent narrative synthesis in line with comprehensive guidance as meta-analyses were not suitable due to varied study designs and mixed methods data in the final sample.[27] CA and SC discussed independent synthesis to reach consensus on findings and their categorisation, which were reviewed by all authors.

Patient and public involvement

The review has no patient or public involvement. However, doctors with lived experience of RTW were consulted on the research aims, search terms, and presentation of findings, and included as coauthors where authorship guidelines were met.

RESULTS

Study characteristics and quality

Twenty-four studies met the inclusion criteria (table 2, full data extraction in online supplementary file 3 'Full data extraction, study characteristics and findings'). Studies were mostly UK based (n=13), quantitative (n=14) and involved data from 92 692 doctors, with sample sizes ranging from 10 to 86 459. Six out of the 14 quantitative studies included additional qualitative data and analysis, without being considered as separate qualitative studies. The most common methodologies were qualitative designs using semistructured interviews (n=9), and quantitative or mixed-methods cross-sectional designs using de novo surveys (n=8). Five studies made between groups comparisons including three using non-validated surveys and two using objective clinical data, while one study used naturalistic observation and the final one was a 3-year follow-up intervention study. Outcomes observed varied widely, with eight studies assessing experience of leave and RTW, five assessing barriers to RTW and the remainder ranging from individual factors such as self-efficacy, infant-feeding behaviour and WLB, to prevalence and personal characteristics of sick leave. The most common reason for absence was sick leave (n=10), followed by parental leave (n=5) and studies that included all reasons (n=5). Not all studies reported participant demographics. Among those that did, primary care doctors were the most common medical specialty, samples were largely female, while a range of career stages and workplace settings were represented.

The mean quantitative study quality score (table 3) was 9.7 out of 18 (range 7–17), slightly lower than for previously published reviews using the MERSQI.[20 28] Of the 14 quantitative studies, the most common methodological limitations were cross-sectional survey designs without comparison groups or follow-up time points (n=8), use of only descriptive analysis (n=7) and reliance on self-report data (n=11). The validity of self-report measures and response rates were often unclear. Outcomes were often perception, attitude and experience based rather than measuring behaviour or health/patient outcomes (n=11). Encouragingly, data were often collected from multiple institutions with moderate to large sample sizes.

Table 2 Characteristics and findings of included studies

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
HEE (2018)[4]	Cross-sectional survey	Needs, challenges and support required—de novo mixed methods survey	All reasons included	Mixed method—Descriptive statistics	97 doctors	Invitation email via UK Medical Royal Colleges, British Medical Association, NHS England and Health Education England	UK	Not reported	Not reported	Personal—lack of confidence, emotional needs (coping and managing uncertainty), self-efficacy, childcare, communication and information about return. Social—views of colleagues. Organisational—pastoral support, wider support package, organisational culture, unfamiliar with workplace
AoMRC (2016)[12]	Cross-sectional survey	Barriers experienced—de novo mixed methods survey ('Flexibility and Equality Parental Leave Survey'	Parental leave	Mixed method—Descriptive statistics	1225 doctors	Invitation email to every member from each UK Medical Royal College	UK	70% female, 70% 31–46 years of age, spread across UK and specialties, 79% white ethnic background, majority doctors in training, 60% had more than 1 instance of parental leave	84% response rate	Only 3.5% of respondents reported no worries about returning. Personal - self-efficacy, maintaining Continuing Professional Development, childcare, finance (main reason for pressure to return), emotional state (13.5% not emotionally ready to return), sleep deprivation, breastfeeding - delay to return and stopping early. Low concentration 45%. Social—68% reported no family support, colleagues were a main source of info, relationships with colleagues. Colleagues views 34%. Organisational - medical HR were a main source of info, relationship with department. Significant lack of access to support. Flexibility, 75% full time down to 36%

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Brooks *et al* (2014)[29]	Qualitative semistructured interviews	Experience of sick leave and RTW—2 hours semistructured interview	Sick leave—any illness, for at least 6 months	Qualitative—Thematic analysis	19 doctors	Invitation email via a medical charity, UK regulator or confidential doctor health service	UK	10/19 female, age range 20s-60s, 18/19 mental health problem/addiction, 7 physical health problems, 14 involved with General Medical Council	25% response rate	Regulator interactions can be positive, helpful and necessary (eg, with supportive supervisors and case workers) as well as distressing and anxiety provoking. Personal—clear information, emotional needs, empathy Social—Illness as a deficiency or flaw (attitudes). Organisational—RTW support, to the point of detriment to health. Lack of clear info and empathy in correspondence. Relationship with regulator
Doran *et al* (2014)[30]	Qualitative semistructured interviews	Reasons for leaving and barriers to returning— 40–60 min semistructured interview	Career break or leavers	Qualitative— Thematic analysis	21 primary care doctors	Volunteer sampling following participation in an online survey (survey sampling not described	UK	67% female, age range 32–54, years as a GP 2.5–20	55% response rate	Personal—clear information, WLB, fear (emotional needs). Social - peer support, relationships with colleagues. Organisational - support package with process and information to access support, autonomy over role, work design (specialty specific concern, primary-secondary care interface and referrals), culture and working atmosphere
Fox *et al* (2009)[31]	Qualitative semistructured interviews	Experience of sick leave and RTW—semistructured interviews	Sick leave—any serious illness	Qualitative—Interpretative Phenomenological Analysis	17 primary care doctors	Invitation email via regional primary care provider and commissioner	UK	10/17 male, 31–69 years of age, mean 46 years, 16/17 white British	Not reported	Personal—emotional needs (feeling powerless, out of control, vulnerable due to patient–doctor status and label), managing disclosure, self-perception, self-stigma (internalising illness as a vulnerability)

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Gordon and Szram (2013)[32]	Cross-sectional survey	Experience of paternity leave—de novo mixed methods survey	Parental leave—paternity	Mixed method—Descriptive statistics	364 doctors	Invitation message via a professional network (London Deanery Synapse)	UK	32% consultants, 56% registrars, 10% more junior doctors, range of specialties	Not reported	Personal—financial concerns, career implications. Social—balance family and care-giving needs. Organisational—clear information and knowledge of support, support package available, flexibility in working role, workload and staffing management, supportive culture
Grant *et al* (2019)[33]	Biographical narrative interviewing method	Experience of mental health condition—biographical narrative interviews	Sick leave—mental health condition	Qualitative—Thematic analysis	10 doctors	Invitation email via Health Education England and Wales Deanery, final sample selected purposively	UK	8/10 female, post-medical degree to registrar, cross-specialty	Not reported	Personal - managing disclosure, taking sick leave, loss of professional identity, career support and risk of damage Social—required perception of fulfilment from role, help-seeking behaviour, perception of sick leave and negative attitudes of colleagues Organisational—work design (high pressure, high-risk duties, staffing and workforce issues), confidentiality and awareness of management, new colleagues and setting on return
Henderson *et al* (2012)[34]	Qualitative semistructured interviews	Barriers experienced— 1–3hours semistructured interviews	Sick leave—any illness, for at least 6 months	Qualitative—Thematic analysis	19 doctors	Invitation email via a medical charity, UK regulator or confidential doctor health service	UK	10/19 female, age range 20s–60s, 18/19 mental health problem/addiction, 7 physical health problems, 14 involved with GMC	25% response rate	Personal—Work identity and career, personal identity changes, self-view and sense of failure in work and life generally, beyond low self-esteem to self-stigma Social—relationships with family and friends, stigmatisation, culture of competitiveness and toughness Organisational - support package

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Hertzberg *et al* (2016)[35]	Qualitative interviews	WLB and professional dedication—60–90 min focus group interviews	All reasons included	Qualitative—Systematic text condensation	48 hospital doctors	Invitation email via union representatives and senior managers	Norway	56% female, 5–45 years experience, 22 registrars and 26 consultants, 19 Psychiatry, 15 internal medicine, 14 surgery	Not reported	Personal—WLB as there are too many things to balance and be a good doctor. Social—Colleague relationships, leave equals disloyalty. Organisational—work design (managing clinical and managerial/leadership duties), relationship with management and feeling valued
McKevitt *et al* (1997)[36]	Between groups comparison	Prevalence and decision-making—quantitative survey and qualitative interviews	Sick leave—any illness	Mixed method—One-way ANOVA, logistic regression and thematic analysis	1102 doctors (532 primary care, 506 hospital doctors, 64 additional interviews)	Postal invitation survey via 3 NHS Trusts and 2 primary care providers	UK	Reported by each group in full in the paper	74% response rate	Work design and organisation, alongside poor staffing management and professional work ethic encourage presenteeism and poor attitudes towards sick leave. Personal - self-stigma. Social - attitudes and stigma towards illness representing weakness, pressure from colleagues, professional culture (work ethic), help-seeking behaviour. Organisational - work design and organisation (high pressure), staffing and workload management, organisational culture

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Miller (2009)[37]	Cross-sectional survey	Experience of mental health condition - mixed methods survey	Sick leave - mental health condition	Mixed method—Descriptive statistics and content analysis	116 doctors	Invitation message via a doctors peer support organisation (Doctors Support Network)	UK	Mean age 45 (range 26–68), 63% female	35% response rate	On returning there was a significantly lower proportion of full time work, replaced by part time working. RTW should be supported with a combination of personal, social and workplace strategies, preceded by preventative approaches where possible. Personal - WLB, caregiver duties, career support and damage, personal-professional identity, financial considerations Social - family and social support, colleague stigma and negative attitudes. Organisational - flexibility in working role, OH support
Nomura *et al* (2015)[38]	Cross-sectional survey	Barriers experienced—de novo qualitative survey	All reasons included	Qualitative—Kawakita Jiro method (explained in full in paper)	359 female doctors	Invitation email via alumni association	Japan	Median age 45 (range 38–53), 91% working clinically, 60% full time, 74% had children	Not reported	Personal - childcare and caregiver role, confidence in managing WLB, professional drive and identity. Social - expectation on working parents to manage personal and professional role. Organisational - work design (long hours and shift patterns), workload and staffing management (staff shortages)

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Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Pérez-Álvarez *et al* (2019)[39]	Qualitative semistructured interviews	Experience of illness—semistructured interviews	Sick leave—any serious illness	Qualitative—Inductive qualitative data analysis	10 doctors	Intentional sampling, no further description	Spain	Not reported	Not reported	Personal - career support and damage, clear information, emotional needs, self-view (feel failure, failing colleagues), finance. Social - support from a mentor/supervisor, colleagues' views. Organisational - clear giving of info, workplace and role adaptations, job control
Reese *et al* (2015)[40]	Cross-sectional survey	Self-efficacy, clinical procedures—de novo survey ('Redeployment Specialty Skills Matrix Survey')	Active military duty	Quantitative—Descriptive statistics and χ^2	179 family medicine doctors	Invitation email to all active duty medical officers eligible for redeployment via Army Medical Centre	USA	Not reported	49% response rate	Self-efficacy increased significantly for management of major trauma and significantly reduced or did not change for all other procedures/scenarios, demonstrating reduced self-efficacy. Personal - self-efficacy for clinical procedures
Rizan *et al* (2019)[41]	Qualitative semistructured interviews	Reasons for career break—30–45 min semistructured interview	Career break or leavers— 1 year break	Qualitative—Content analysis	14 foundation year doctors (2–3 years post medical degree)	Invitation email from training programme, final sample selected purposively	UK	8/14 female, mean age 30 (range 27–35), 10/14 white British	Not reported	A career break can have a positive personal impact on doctors and provide resources for their future career and practice. Personal - fatigue, exhaustion and stress, career support and decisions, job and career control, integrating personal experiences into being doctors (personal-professional identity)

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Rosta *et al* (2014)[42]	Between groups comparison	Characteristics of sickness absence—de novo quantitative survey	Sick leave - any illness	Quantitative—χ^2, ANOVA, logistic regression	948 doctors (521 hospital doctors, 313 self-employed primary care or private doctors)	Data from previous study, postal survey from Norwegian Medical Association to a representative panel of Norwegian doctors	Norway	Reported by each group in full in the paper	62% response rate	Self-employed doctors (primary care and private practice) are less likely to take sick leave, other than for serious and chronic conditions. Low professional autonomy and poor self-rated health predict sickness absence, more so that work stress, age and gender. Personal - self-view of health. Organisational - professional autonomy
Sattari *et al* (2016)[43]	Cross-sectional survey	Infant-feeding intention and behaviour—de novo quantitative survey	Parental leave—maternity	Quantitative—Descriptive statistics and inferential analysis (no further details given)	72 female internal medicine doctors	Data from previous study, recruitment email via training programme directors and hospital Women's Task Force	USA	Mean age 38 (range 27–58), 26% trainees and 74% consultants, range of Internal Medicine specialties	Not reported	Only 26% of respondents had received education about breastfeeding. Breastfeeding intention is high but behaviour is prevented due to work factors, including insufficient time for milk expression and inadequate milk supply. Personal - education and awareness, managing disclosure. Social - colleague and peer support. Organisational - flexibility and time through work design, senior colleague awareness and supportive, facilities

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Saunders *et al* (2020)[44]	Naturalistic observation	Returner needs, experience and outcomes of training—unstructured observation and field notes	All reasons included	Qualitative—Thematic analysis	58 doctors, 4 allied health professionals, 1 nurse, 1 other clinical professional	Opportunity sampling through training participation	UK	Not reported	Not applicable	Emergent themes relating to participants' needs were psychosocial needs, peer support, and psychological concepts such as self-perception. Personal - psychosocial needs relating to their RTW, well-being and self-care, WLB, self-esteem, self-identity, confidence. Social - feeling valued, peer support, peer learning, shared experience and not feeling alone or socially isolated, accessing support, respect of peers. Organisational – senior colleague support
van Boxel *et al* (2020)[45]	Cross-sectional survey	Confidence on RTW—de novo mixed methods survey	Parental leave—maternity	Mixed method—Descriptive statistics	146 paediatric doctors	Invitation email via deaneries/training programmes	UK	Not reported - 120/126 had returned to work	Not reported	96% of returners reported a lack of confidence, with 36% requiring more than 3 months to return to pre-absence confidence levels. Personal - childcare, confidence, WLB and managing commitments, managing emotional stress. Organisational - supervisor support, keeping in touch/ unfamiliar workplace, work design and time

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Walsh *et al* (2005)[46]	Qualitative semistructured interviews	Experience of maternity leave—semistructured interviews	Parental leave - maternity	Qualitative—Thematic analysis	21 family medicine doctors	Invitation letter from the Postgraduate Programme Director	Canada	Not reported	78% response rate	Personal - high expectations, stress, childcare and breastfeeding, WLB, sleep and fatigue. Social - professional culture, guilt from absences and workload colleagues, colleague and peer support (reduced post-pregnancy without visible difference). Organisational - work design (long hours, unpredictable work demands), staffing management, organisational culture, physical strain, flexibility, facilities (breaks, privacy, fridges), keeping in touch (can improve perceived skills and peer support)
Finlayson *et al* (2013)[47]	Between groups comparison	Characteristics and morbidity of fitness for duty referrals—historic patient data	Referred for fitness for duty	Quantitative—Descriptive statistics, t-tests or χ^2, logistic regression	381 doctors	Recruited at fitness for duty evaluation (consent process not described)	US	70% male, 71% white, mean age 49	Not reported	70% of those referred were deemed fit to practice and not offered additional support. Personal - psychological support, behavioural guidance and training
Isaksson *et al* (2012)[48]	3 year follow-up intervention study	Emotional exhaustion—Maslach Burnout Inventory	Sick leave—severe distress	Quantitative—T-tests or chi-squared, linear regression	227 doctors (184 at 3 year follow-up)	Invitation on accessing intervention	Norway	Not described, but used in analyses	94% response rate, 19% attrition rate	Length of full-time sickness absence following a counselling intervention can predict reduced burnout 3 years after initial sickness. No optimum length was found so this should be personalised. Personal - fatigue, emotional exhaustion. Organisational - tailoring of support to individual

Continued

Table 2 Continued

Authors	Study design	Variable/outcome measurement	Condition/absence details	Data analysis	Sample	Recruitment/sampling	Setting	Demographics	Response rate	Key findings—personal, social, organisational needs
Kodama *et al* (2012)[49]	Between groups comparison	Working practices—mandatory 'National Survey of Physicians'	All reasons included	Quantitative—Descriptive statistics	86 459 doctors	Mandatory workforce survey distributed via workplaces	Japan	Not reported	90% response rate	The number of female doctors on leave is increasing faster than those returning. Personal - WLB and managing care-giver requirements. Organisational - flexibility of working practices, workload and staffing management
Rose *et al* (2013)[50]	Between groups comparison	Substance misuse relapse and RTW—clinical records data	Sick leave—substance misuse	Quantitative—T-tests or χ^2	780 doctors (56 emergency physicians, 724 non-emergency physicians)	Data from previous study, sampling not described	US	Reported by each group in full in the paper	Not reported	There is a higher rate of substance use disorders in emergency physicians, but comparable completion rates of support programmes including RTW (72%–84%). Personal - psychological health needs. Organisational - OH programmes, personalised for doctors

ANOVA, analysis of variance; GP, general practitioner; NHS, National Health Service; OH, occupational health; RTW, return to work; WLB, work–life balance.

Table 3 MERSQI scores

Authors	Study design (out of 3)	Sampling (out of 3)	Type of data (out of 3)	Validity of evaluation tool (out of 3)	Data analysis (out of 3)	Outcomes (out of 3)	Total score (out of 18)
HEE (2018)[4]	1	2	1	0	2	1	7
AoMRC (2016)[12]	1	2	1	1	1	1	7
Gordon and Szram (2013)[32]	1	2	1	0	2	1	7
McKevitt *et al* (1997)[36]	2	2.5	1	0	2	2	9.5
Miller (2009)[37]	1	2	1	1	1	1	7
Reese *et al* (2015)[40]	1	2.5	1	2	2	1	8.5
Rosta *et al* (2014)[42]	2	2.5	1	2	2	2	11.5
Sattari *et al* (2016)[43]	1	1.5	1	1	2	2	8.5
van Boxel *et al* (2020)[45]	1	2	1	1	2	1	8
Finlayson *et al* (2013)[47]	2	3	3	3	3	3	17
Isaksson *et al* (2012)[48]	1.5	3	1	2	3	3	13.5
Kodama *et al* (2012)[49]	1	3	1	0	1	2	8
Rose *et al* (2013)[50]	2	2	3	2	2	3	14

MERSQI, Medical Education Research Study Quality Instrument.

Qualitative study quality (table 4) was overall high, with the number of 'yes' answers for the ten studies ranging from 7 to 10 (mean 8.3). Studies had clear aims, appropriate qualitative designs and data collection and analysis methods, while making ethical considerations, clear statements of findings and value of the research. The most common flaws were a lack of independent, blinded participant recruitment (n=6) and lack of consideration and reflexivity on the relationship between researchers and participants (n=4).

Twenty studies had risk of selection bias, including self-selecting samples and non-blinded recruitment.[4 12 29–46] Fourteen studies had risk of recall bias, due to reliance on self-report retrospective data collection.[4 12 30–32 37–43 45 46] Twelve studies had risk of measurement bias, using de novo surveys lacking validity and reliability, and qualitative methods lacking adequate description.[4 12 32 36 37 39–45] Thirteen studies showed risk of analysis bias due to either descriptive analysis or insufficient description of analyses.[4 12 32 35 37 39 43–48] Only six studies demonstrated reflexivity on the role of the researchers, particularly regarding their relationships with participants.[29–31 33 34 44] Publication bias is unlikely in this sample as qualitative studies were high quality, exploratory studies did not yield positive or negative findings, and studies reported resources during absence and RTW as well as needs and barriers.

Extracted data were synthesised into categories of needs based on the research aims: personal needs; social needs; organisational needs (table 5). Additional findings emerged during data extraction, presented as: resources and recommendations. Needs identified are undoubtedly inter-related, so they have been synthesised based on their primary focus.

Personal needs

All 24 studies presented findings relating to the personal needs of returning doctors, including WLB, emotional regulation, self-perception and identity, and engagement with the RTW process.

Seventeen studies found personal needs relating to WLB.[4 12 30 32–35 37–39 41–46 49] Nine studies highlighted the need to consider career development, progression and drive in light of returning from absence, which can cause concern for returners.[12 32–34 37–39 41 42] This need was more prominent in the findings of qualitative studies. Six studies found needs relating to childcare, with three highlighted infant-feeding specifically following parental leave.[12 38 43 45 46 49] These needs were highlighted through cross-sectional surveys, with one qualitative study providing additional data on the experience of mothers in these areas. Financial needs were highlighted in four studies and were often relating to additional childcare concerns, changes in circumstances and possible return less than full time.[12 32 37 39] Owing to the higher quality of qualitative studies compared with quantitative cross-sectional designs, needs relating to career development for all returners and childcare concerns following maternity leave were the most notable findings.

Fifteen studies highlighted emotional regulation needs for returners.[4 12 29–31 39–42 44–48 50] Seven studies found that returners can experience stress, worry and fear, most notably in relation to executing their clinical duties including without supervision, and managing their changing circumstances.[30 31 40–42 45 46] Four further studies referenced emotional exhaustion and fatigue, relating to both the cause of absence and the process of returning.[12 41 46 48] Individual studies highlighted a link between emotional fatigue and sleep deprivation, particularly during parental leave, as well as feelings of

Table 4 Critical Appraisal Skills Programme scores

Authors	Aims stated	Appropriate methods	Appropriate design	Appropriate recruitment	Appropriate data collection	Role of researchers	Ethical issues covered	Rigorous data analysis	Clear findings stated	Are findings valuable?	Total 'yes' Responses (out of 10)
Brooks *et al* (2014)[29]	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9
Doran *et al* (2014)[30]	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9
Fox *et al* (2009)[31]	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9
Grant *et al* (2019)[33]	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9
Henderson *et al* (2012)[34]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
Hertzberg *et al* (2016)[35]	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9
Nomura *et al* (2015)[38]	Y	Y	N	Y	N	N	Y	Y	Y	Y	7
Pérez-Álvarez *et al* (2019)[39]	Y	Y	Y	N	N	N	Y	Y	Y	Y	7
Rizan *et al* (2019)[41]	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9
Saunders *et al* (2020)[44]	Y	Y	N	Y	N	Y	Y	N	Y	Y	7
Walsh *et al* (2005)[46]	Y	Y	Y	N	Y	Y	N	Y	Y	Y	8

Table 5 Summary of findings for needs resources and recommendations by category

	Personal	Social	Organisational
Needs	Work–life balance Emotional regulation Self-perception and identity Engagement with RTW	Relationships Professional culture Stigma	Flexibility and job control Work design OH services Organisational culture
Resources	Empathy Self-awareness Awareness of RTW	Peer support Mentor/supervisor Social network	Flexibility Prior job satisfaction Paid leave
Recommendations	Training provision Childcare facility and flexibility	Stigma reduction Consistent supervisor	Clear policy and information Tailored OH services Increased flexibility Improved staffing

OH, occupational health; RTW, return to work.

powerlessness and uncertainty. Notably, in one quantitative and one qualitative study a break from clinical practice was seen to help with this emotional fatigue.[41 48] The high quality of qualitative methodologies used and the use of the validated Maslach Burnout Inventory support the validity of these findings.

Needs relating to self-perception and identity were found in 16 studies.[4 12 31 33–42 45] Most commonly in six studies this was self-efficacy (or confidence as a proxy term) for clinical procedures and managing clinical duties and personal lives.[4 12 34 40 44 45] A further seven studies highlighted the role of identity in returning doctors' needs, findings that personal and professional identities and the relation between the two can shift during absence and on return.[31 33 34 37 38 41 44] Five of these studies reported that absence poses a threat to doctors' identity as a caregiver, particularly during sick leave and experiencing the role of a patient.[31 33 34 37 44] Self-stigma and negative self-views were found in four studies, manifested in feelings of failure and weakness based on taking an absence from work.[31 34 36 39] Notably, three studies reported positive effects of absence and return in relation to broadened and strengthened identity, from both sick leave and career breaks.[31 37 41] Needs regarding self-perception and identity were highlighted comprehensively by robust qualitative methods, suggesting reliable findings. However, quantitative findings focused specifically on self-efficacy using non-validated tools lacking reliability.

Engagement in the RTW process was referenced in six studies as important.[29–31 37 39 43] This related to accessing accurate information, building awareness of the process and impact of RTW, and self-advocating in obtaining support. This finding was most prominent in cross-sectional survey designs, which were lower quality studies.

Social needs

Seventeen studies presented findings relating to social needs, including managing relationships, professional culture and stigma.

Relationships were found to be an important factor in 15 studies. Most notable were relationships with colleagues and peers, ranging from providing support and guidance on experiences such as parental leave, to team working and functioning at work.[4 12 29 30 32–37 39 43–46] Eight of these studies found that negatives views on taking sick leave, negative attitudes towards the reasons for absence and even direct pressure were harmful to returners.[29 33–37 43 46] Four studies highlighted similar findings in relation to the attitudes of family and friends, additionally raising the benefits of good social support.[4 32 34 37] Seven studies highlighted that mentor or supervisor relationships were needed and could be highly beneficial for returners.[4 33 39 43–46] Both qualitative and quantitative data support the needs around relationships.

Ten studies highlighted negative professional culture.[29 33–36 38 43–46] Five studies found that negative views on sick leave and absence could be rooted in the culture of the medical profession, while another study highlighted the tough and competitive ethos that can be found in medicine.[29 33–36 46] Four studies uncovered expectations relating to maintaining high performance, being seen to enjoy and not struggle being a doctor, and to not be affected by RTW.[33 36 38 46] It was suggested in two studies that professional culture can reduce help-seeking behaviour and create additional needs.[33 36] These cultural considerations were highlighted in cross-sectional surveys and explored in more depth in qualitative studies of good quality.

Stigma was found in six studies, relating to seeing illness as a flaw, weakness or vulnerability.[31 33 34 36 37 43] Studies showed that this stigma was visible across specialties, settings and organisations, and three studies suggested a negative impact on disclosure of personal circumstances. Other studies referenced unsupportive colleagues, for example, towards doctors returning from parental leave, however this could not be directly linked to stigma.[45 46] This finding was explored in depth by good quality qualitative studies.

Organisational needs

Twenty-two studies presented findings relating to organisational or workplace needs, including flexibility and job control, work design, OH services and organisational culture.

Flexibility and job control was a prominent need for returners in 13 studies.[4 12 30–32 36 37 39 41–43 46 49] This suggested that organisations and training programmes must be flexible to the individual needs of returners, with personalisation of support an important consideration.[48 50] The flexibility and personalisation should be derived from the new circumstances of returners following absence, with examples of life stage and individual experience of illness given.[31 41] Returners required autonomy to make adaptations to job roles on RTW, as well as regaining control over their career development.[30 42] Three studies included specific needs for workplace adaptations following RTW, relating to parental leave and sick leave.[35 39 46] Job control was found to reduce the likelihood of taking sick leave in one study, while another found that job control could be developed from taking a career break.[41 42] Needs around flexibility featured in low quality cross-sectional surveys, with little exploration through qualitative methods other than one study focused on parental leave. Needs relating to job control were identified through between groups comparisons and qualitative interviews, representing good quality evidence.

Work design, referring to the organisation of workplace duties, was highlighted in 12 studies.[4 30 32 33 35 36 38 39 43 45 46 49] The aspects of work design ranged broadly, although workload and staffing management issues were the most prominent in seven studies.[32 33 36 38 43 46 49] This was related closely to working hours, shift patterns and unpredictable work demands found in three studies.[38 46 49] Returners' needs to familiarise with new work design on return was found in four studies.[4 33 39 45] The high-pressure environments of medicine and presence of risk featured in two studies,[33 36] while the three further studies highlighted the importance of facilities particularly in relation to infant-feeding.[12 43 46] One study found specialty-specific work design needs, in relation to primary care doctors working with secondary care services.[30] Both qualitative and quantitative study designs highlighted this area of need.

OH services and their provision of support featured in nine studies.[4 29 30 32–34 37 47 50] Access needs were highlighted in six studies which found that clear communication and information about support available and expectations of services was required.[4 29 30 32 33 37] Four studies highlighted needs around confidentiality and case management from OH, suggesting specialist OH services for doctors.[33 34 47 50] This need was highlighted in cross-sectional surveys and outlined in more depth through qualitative interviews of good quality.

Seven studies found needs around organisational culture.[4 30 32–34 36 46] These unanimously found the need for supportive working environments, highlighting an organisation's role in achieving this. Two studies highlighted that a team's approach was influenced by organisational culture, particularly with regard to negative views of sick leave.[30 33] Three studies used cross-sectional surveys and four used qualitative interviews.

Resources

Additional study findings highlighted positive resources that could be developed by or provided to returners from eight studies.[4 12 31 37 39–41 44 46] Personal resources relating to increased empathy, self-awareness and insight into the doctor-patient relationship following sick leave were found in three studies.[29 31 37] Positive engagement with the RTW process and increased awareness of this was found to be a resource by three studies,[12 31 37] while individual studies found that training, career development and improved WLB could all be resources on RTW.[4 37 40 41 46]

Social resources were highlighted, with five studies identifying resources of positive social support from colleagues and peers.[4 12 37 44 46] The valuable resource of a mentor or supervisor, networks of friends, and a supportive partner were suggested by three studies each.[4 12 33 34 37 39] Organisational resources found to support returners were flexibility, paid leave, pre-existing job satisfaction, and a clear process of returning including keeping in touch experiences.[12 37 43 45 46] Each featured in one study, while flexibility featured in three and was related specifically to a phased RTW. The ten studies that found resources used four cross-sectional surveys, five qualitative interview methods and one naturalistic observation with varied study quality.

Recommendations

Seventeen studies provided recommendations relating to returners' needs and support.[4 12 29 32–35 37 39 40 42–45 47–49] Broadly, five studies called for improved evidence, evaluation and understanding of reasons for absence and subsequent personal, social and organisational needs to guide improved support provision.[4 44 45 47 48]

Five studies made clear recommendations to meet personal needs relating to self-efficacy and WLB, particularly childcare and infant-feeding.[12 40 43 45 49] These included improved clinical information and training to improve self-efficacy of clinical skills, and improved facilities and flexibility to allow for childcare and infant-feeding needs.

Seven studies provided recommendations for social needs, with four calling for initiatives to reduce stigma around sick leave, particularly for mental health conditions.[29 33 34 42] Four studies stated the clear need for designated supervisor or mentor support for returners to provide consistency and guidance.[12 33 39 45]

Eleven studies suggested recommendations for organisations, most commonly five studies calling for clearer policies for RTW, including access to workplace risk assessments for mothers.[4 32 42 45 49] Additionally, four studies stressed the importance of a tailored OH service,[33 34 37 47] with three more outlining the value of clear and empathetic communication when doctors are on sick leave.[12 29 32] Relating to work design, three studies

recommended increased flexibility in doctors' roles,[35 37 49] while two studies recommended improved management of staffing and workforce issues.[12 35]

DISCUSSION

Principal findings

This systematic review of doctors returning to work sought to identify personal, social and organisational needs, finding 11 prominent factors. Twenty-four studies were included, involving data from 92 692 doctors across 14 quantitative and 10 qualitative studies. All 24 studies identified personal needs for returners categorised into WLB, emotional regulation, self-perception and identity, and engagement with RTW. Seventeen studies highlighted social needs relating to professional culture, personal and professional relationships, and stigma towards illness. Organisational needs were found in 22 studies, categorised into flexibility and job control, work design (the nature of work), OH services and organisational culture. Resources emerging from experiencing RTW were highlighted, alongside practical recommendations based on study findings.

Findings apply to doctors as a homogeneous group based on the limited evidence available, rather than the heterogeneous group this is in practice. General practice was the most common specialty identified, while hospital doctors were commonly grouped together, although there were no clear differences between specialties. Findings appeared applicable across all reasons for absence, aside for specific needs following maternity and sick leave. Doctors returning from maternity leave had increased needs relating to WLB and managing childcare, emotional regulation and support from peers and senior colleagues. Doctors returning from sick leave had increased needs relating to identity, self-perceptions, emotional regulation, stigma and OH support. These findings reflect the nature of the doctors' absence and their changing circumstances. While certain needs will be applicable across many doctors, further specific needs relating to reason for absence, career stage and specialty may not yet have been identified. Findings should be applied with consideration of personal and local contexts as evidence remains preliminary. Importantly, preliminary evidence highlights resources or strengths that returning doctors can bring to patient care, possibly due to their experiences and changes in circumstances and perspective.

Strengths and weaknesses

While 20% of all studies from title and abstract screening onwards were reviewed by a second independent researcher with good inter-rater reliability, an increased proportion of second screening would improve reliability. Risk of bias assessment was robust and used appropriate tools, while independent reviewing and a piloted data extraction form aided synthesis. However, data extracted was not appropriate for meta-analysis and findings were derived through narrative synthesis which requires cautious interpretation. Doctors were group as one heterogeneous population and many relevant variables would not be considered, for example reason or length of absence and specialty training. Nonetheless, consensus during data synthesis facilitated presentation of emerging findings from a nascent literature base.

The limited extant literature meant that many included studies were not exclusively focused on needs during RTW and the exploratory nature of some studies provided broad rather than focused evidence. Additionally, all included studies originated from developed countries and healthcare systems and non-English language studies were excluded. Quantitative studies were low quality, with a lack of reliable self-report measures and objective data collection, limited comparison or follow-up data, and poor identification and testing of variables. Qualitative studies were high quality, presenting in depth data and relevant findings using well-described methodologies, analyses and reflexivity. Developing insight into the lived experience of doctors through robust qualitative methods should be highly valued.

Analyses demonstrated significant risks of biases throughout the reviewed studies, including qualitative methods. Most notable were selection biases through self-selecting participants or inappropriate, non-blinded recruitment methods. Retrospective studies raised the risk of recall bias, while measurement bias related to poor quantitative measures and some qualitative studies omitting reflexivity on the relationship between researcher and participants. Analysis bias may be due to the researcher's non-blinded role in analyses, over-reliance on descriptive statistics and insufficient methodological detail in some studies.

Relation to other literature

This review builds on literature that has begun to identify returning doctors' needs, including personal experiences of identity, emotions and self-efficacy,[14–16] social needs regarding relationships, stigma and professional culture,[17–19] and organisational needs including work design, culture, job control, flexibility and support services.[3 10] Findings build on existing support and measures proposed, raising new considerations for supported RTW while addressing the dearth in existing evidence.[4 6 21] Coherence between the review findings and current academic and non-academic literature suggests that the understanding of doctors' needs are improving with added the depth and organisation.

Findings can be located within the wider RTW literature, allowing differentiation between needs faced by many workers on RTW, and needs faced particularly by doctors.[51] Doctors may have increased personal needs relating to emotional regulation, self-efficacy and personal–professional identity. Social needs for doctors appear to have additional considerations relating to professional culture and attitudes of peers, while work design raised specific organisational needs. These

Table 6 Doctors' needs relating to RTW mapped onto the IGLOO (Individual, Group, Leader, Organisation, Overarching context) framework

Level	IGLOO framework	Doctors' needs identified
Personal	Individual	► Work–life balance ► Emotional regulation ► Self-perception and identity ► Engagement with RTW process
Social	Group	► Personal relationships ► Peer relationships
	Leader	Senior colleague support
	Overarching context	► Professional culture ► Stigma towards illness
Organisational	Organisation	► Work design (nature of the work) ► Flexibility and Job control ► Occupational health services ► Organisational culture

RTW, return to work.

increased needs may relate to the vocational nature of medicine, the historical and comparatively well-defined professional culture, and the unique and life-changing nature of providing clinical care. These findings demonstrate the need to build on existing knowledge on RTW by developing evidence tailored to doctors.

Drawing on wider literature may help to both contextualise this review's findings and guide further work in this area. The IGLOO (Individual, Group, Leader, Organisation, Overarching context) framework for integrated sustainable RTW, initially applied to return postmental ill health, could be applied to doctors returning to work to help guide the development of interventions and support (see table 6).[52] This demonstrates that needs may be applicable across multiple reasons for absence while acknowledging the importance of individual experience.

Implications

The findings (tables 5 and 6) and implications of this review can be understood across the five levels of the IGLOO framework: the individual; group; leader; organisation and overarching context. Doctors taking absence and planning to return may benefit from being able to proactively consider their needs according to current evidence and this framework, in addition to OH services if required. Proactive consideration may empower doctors to considering what role their workplace and professional organisations should play and even advocate for their needs. At the group level, the role of colleagues, peers, friends and family in providing invaluable support has been reiterated and should guide people in these roles to be aware of the part they can play. For leaders in particular, the importance of a doctors' relationship with a senior colleague, mentor or supervisor cannot be understated and is critical to a successful experience of RTW. At the organisational level, clarity on the roles and availability of support from human resources, OH services and professional networks within organisations must be given. Job design, the nature of work, and the management of staffing and workforce should also feature at this level. Additionally, workforce and organisational leaders can identify and target the specific needs that may be present in a population of returning doctors, implementing this into their practice and support provision. Finally, regarding the overarching context, the medical profession, medical leaders and professional bodies may reflect on the needs of returning doctors, considering the role of professional culture, stigma and professional support in individual experience.

Engagement with doctors' experience of RTW may provide wider benefit for the medical community. Understanding and harnessing the lived experience of doctors' illness may help doctors to become better, more empathetic clinicians. This principle could be translated through to medical education, from undergraduate medical training to continued professional development. The development of adequate support to facilitate WLB for returning doctors, including their career development needs, may help to reduce inequalities and disadvantage in the medical workforce. This may be true for gender imbalances in senior medical leadership based on gender bias linked to maternity leave. Indeed, the same principle could apply to stigma related to mental health conditions. Reducing this stigma may not only improve the experience of doctors who experience mental health conditions, but also their patients and colleagues who will share these experiences too. Finally, improving doctors' experience and ability to RTW helps to secure the future and sustainability of the medical workforce, which is critical to public and population health. Fundamentally, improving support for doctors can improve the health, outcomes and experience of the patients that they serve.

Future research

The relationship between needs, reason and length of absence must be established to facilitate the development

of tailored interventions that can be assessed for feasibility and efficacy. Evidence and subsequent interventions must also consider doctors as a heterogeneous group, for example, focusing on certain specialties or settings. How doctors can consider or reflect on their needs should be prioritised, for example, through guidance, tools or needs assessment. Subsequently, designing new or adaptating of existing interventions for doctors must be prioritised to foster practical changes, ensuring that research is aligning to practice around supporting doctors.

Striving for evidence-based practice is necessary to embed improved support for doctors returning to work which can facilitate a more sustainable medical workforce to care for patients. To achieve this significant ambition, the literature in this field must improve its methodological quality and management of bias. Objective measurement of these needs, alongside continued qualitative investigation, must be improved. More complex data analysis is required to understand relationships between variables and create evidence tailored to specific contexts, alongside significantly improved sampling methods that should require independence and blinding. Notably, comment, editorial articles and conference abstracts presenting opinion rather than data are common in relation to doctors' health and RTW, while robust evidence is not. The medical profession must overcome its own discomfort, reticence or lack of prioritisation of methodologically rigorous research that investigates doctors' needs and the determinants of successful RTW and sustainable working lives. This is an important step in building a sustainable medical workforce for the future.

Twitter Chris Attoe @MaudsleyLearn and Kevin Teoh @kevinteohrh

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ORCID iDs
Chris Attoe http://orcid.org/0000-0001-5559-2697
Kevin Teoh http://orcid.org/0000-0002-6490-8208

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PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Page 3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 5
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 4
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Page 5
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 5
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 5
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 5 (plus Table on P.7-9)
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 5 (plus Table on P.7-9)
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 5
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Page 5 (plus Table on P.7-9)
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 5
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	n/a
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Page 7-9
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Page 5
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 6
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a

PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 5
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 5
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Page 6 & Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Page 5 & Figure 1
Study characteristics	17	Cite each included study and present its characteristics.	Page 7-9
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Page 7-9
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Page 7-9
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Page 12-15
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	n/a
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Page 12
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	n/a
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Page 12
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Page 12-15
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Page 16-17
	23b	Discuss any limitations of the evidence included in the review.	Page 16
	23c	Discuss any limitations of the review processes used.	Page 16
	23d	Discuss implications of the results for practice, policy, and future research.	Page 17-18
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 4
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 4
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/a
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 2
Competing interests	26	Declare any competing interests of review authors.	Page 1
Availability of	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included	Page 7-9

PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
data, code and other materials		studies; data used for all analyses; analytic code; any other materials used in the review.	

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Synthesis Without Meta-analysis (SWiM) reporting items

The citation for the Synthesis Without Meta-analysis explanation and elaboration article is: Campbell M, McKenzie JE, Sowden A, Katikireddi SV, Brennan SE, Ellis S, Hartmann-Boyce J, Ryan R, Shepperd S, Thomas J, Welch V, Thomson H. Synthesis without meta-analysis (SWiM) in systematic reviews: reporting guideline BMJ 2020;368:l6890 http://dx.doi.org/10.1136/bmj.l6890

SWiM is intended to complement and be used as an extension to PRISMA			
SWiM reporting item	**Item description**	**Page in manuscript where item is reported**	**Other***
Methods			
1 Grouping studies for synthesis	1a) Provide a description of, and rationale for, the groups used in the synthesis (e.g., groupings of populations, interventions, outcomes, study design)	Page 4-5 – one population group (doctors), one condition (return to work). Page 11 – outcomes split by personal, social, organisational needs.	
	1b) Detail and provide rationale for any changes made subsequent to the protocol in the groups used in the synthesis	n/a	
2 Describe the standardised metric and transformation methods used	Describe the standardised metric for each outcome. Explain why the metric(s) was chosen, and describe any methods used to transform the intervention effects, as reported in the study, to the standardised metric, citing any methodological guidance consulted	There was no standardised metric for each outcome, outcomes and findings were categorised based on the personal-social-organisations needs above (page 11).	
3 Describe the synthesis methods	Describe and justify the methods used to synthesise the effects for each outcome when it was not possible to undertake a meta-analysis of effect estimates	End of Page 4 – narrative synthesis employed with methodological references based on	

Synthesis Without Meta-analysis (SWiM) reporting items

		inappropriate data for meta-analyses.	
4 Criteria used to prioritise results for summary and synthesis	Where applicable, provide the criteria used, with supporting justification, to select the particular studies, or a particular study, for the main synthesis or to draw conclusions from the synthesis (e.g., based on study design, risk of bias assessments, directness in relation to the review question)	n/a – all studies and their data were equally included in synthesis.	
SWiM reporting item	**Item description**	**Page in manuscript where item is reported**	**Other***
5 Investigation of heterogeneity in reported effects	State the method(s) used to examine heterogeneity in reported effects when it was not possible to undertake a meta-analysis of effect estimates and its extensions to investigate heterogeneity	Narrative analysis (page 4 & 11), with heterogeneity commented on throughout.	
6 Certainty of evidence	Describe the methods used to assess certainty of the synthesis findings	End of page 4 – two independent reviewers.	
7 Data presentation methods	Describe the graphical and tabular methods used to present the effects (e.g., tables, forest plots, harvest plots). Specify key study characteristics (e.g., study design, risk of bias) used to order the studies, in the text and any tables or graphs, clearly referencing the studies included	Page 5 – description of study characteristics and quality. Page 6-8 – detailed table of all extracted data. Page 9-11 – detailed description of risk of biases. Page 5-11 – tables all presented	

Synthesis Without Meta-analysis (SWiM) reporting items

		clearly. Studies referenced throughout.	
Results			
8 Reporting results	For each comparison and outcome, provide a description of the synthesised findings, and the certainty of the findings. Describe the result in language that is consistent with the question the synthesis addresses, and indicate which studies contribute to the synthesis	Page 11-14 – findings.	
Discussion			
9 Limitations of the synthesis	Report the limitations of the synthesis methods used and/or the groupings used in the synthesis, and how these affect the conclusions that can be drawn in relation to the original review question	Page 15-16.	

PRISMA=Preferred Reporting Items for Systematic Reviews and Meta-Analyses.
*If the information is not provided in the systematic review, give details of where this information is available (e.g., protocol, other published papers (provide citation details), or website (provide the URL)).

Full data extraction, characteristics and findings of included studies.

Authors	Study Design	Variable / outcome measurement	Condition / absence details	Data analysis	Sample	Recruitment / sampling	Setting	Demographics	Response rate	Key findings - personal, social, organisational needs	Additional findings	Recommendations	Risk of biases*
HEE (2018)[4]	Cross-sectional survey	Needs, challenges and support required - de novo mixed methods survey	All reasons included	Mixed method – Descriptive statistics	97 doctors	Invitation email via UK Medical Royal Colleges, British Medical Association, NHS England and Health Education England	UK	Not reported	Not reported	Personal - lack of confidence, emotional needs (coping and managing uncertainty), self-efficacy, childcare, communication and information about return. Social - views of colleagues. Organisational - pastoral support, wider support package, organisational culture, unfamiliar with workplace	Returner views on support. Personal - training. Social - peer support. Organisational - phased return, clearer entry/exit & KIT process, mentor/coach.	Further collation of evidence and development of successful approaches required for supporting returning doctors, including policy advice and available resources	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
AoMRC (2016)[12]	Cross-sectional survey	Barriers experienced - de novo mixed methods survey ('Flexibility & Equality Parental Leave Survey'	Parental leave	Mixed method – Descriptive statistics	1,225 doctors	Invitation email to every member from each UK Medical Royal College	UK	70% female, 70% 31-46 years of age, spread across UK & specialties, 79% white ethnic background, majority doctors in training, 60% had more than 1 instance of parental leave	84% response rate	Only 3.5% of respondents reported no worries about returning. Personal - self-efficacy, maintaining CPD, childcare, finance (main reason for pressure to return), emotional state (13.5% not emotionally ready to return), sleep deprivation, breastfeeding - delay to return and stopping early. Low concentration 45%. Social - 68% reported no family support, colleagues were a main source of info, relationships with colleagues. Colleagues views 34%. Organisational - medical HR were a main source of info, relationship with department. Significant lack of access to support. Flexibility, 75% full time down to 36%	Resources were identified for returners. Social - partner (48% of respondents), other parents (48%), workplace social support (14-20%)	Improved communications of support and resources available when returning from parental leave. Dedicated support for childcare and breastfeeding requirements. Access to the clinical information required, including updates and changes. A designated supervisor who is aware and supportive of RTW, and a workplace risk assessment in line with employment contracts	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
Brooks et al (2014)[29]	Qualitative semistructured interviews	Experience of sick leave and RTW - 2hr semistructured interview	Sick leave - any illness, for at least 6 months	Qualitative - Thematic analysis	19 doctors	Invitation email via a medical charity, UK regulator or confidential doctor health service	UK	10/19 female, age range 20s-60s, 18/19 mental health problem/addiction, 7 physical health problems, 14 involved with GMC	25% response rate	Regulator interactions can be positive, helpful and necessary (e.g. with supportive supervisors and case workers) as well as distressing and anxiety provoking. Personal - clear information, emotional needs, empathy Social - Illness as a deficiency or flaw (attitudes). Organisational - RTW support, to the point of detriment to health. Lack of clear info and empathy in correspondence. Relationship with regulator		Improved distinction between ill health and misconduct in the way the regulator works with doctors. A dedicated process for ill health as this process can be a barrier to RTW. Improved communication and awareness from the regulator to reduce fear and anxiety for doctors	Selection bias
Doran et al (2014)[30]	Qualitative semistructured interviews	Reasons for leaving & barriers to returning - 40-60 minute semistructured interview	Career break or leavers	Qualitative - Thematic analysis	21 primary care doctors	Volunteer sampling following participation in an online survey (survey sampling not described	UK	67% female, age range 32-54, years as a GP 2.5-20	55% response rate	Personal - clear information, work-life balance, fear (emotional needs). Social - peer support, relationships with colleagues. Organisational - support package with process and information to access support, autonomy over role, work design (specialty specific concern, primary-secondary care interface and referrals), culture and working atmosphere			Selection bias, recall bias
Fox et al (2009)[31]	Qualitative semistructured interviews	Experience of sick leave and RTW - semistructured interviews	Sick leave - any serious illness	Qualitative - Interpretative Phenomenological Analysis	17 primary care doctors	Invitation email via regional primary care provider and commissioner	UK	10/17 male, 31-69 years of age, mean 46 years, 16/17 white British	Not reported	Personal - emotional needs (feeling powerless, out of control, vulnerable due to patient-doctor status and label), managing disclosure, self-perception, self-stigma (internalising illness as a vulnerability)	Resources identified. Personal - awareness of RTW, increased empathy (e.g. self-disclosure), insight into doctor-patient relationship and power.		Selection bias, recall bias
Gordon et al (2013)[32]	Cross-sectional survey	Experience of paternity leave - de novo mixed methods survey	Parental leave - paternity	Mixed method – Descriptive statistics	364 doctors	Invitation message via a professional network (London Deanery Synapse)	UK	32% consultants, 56% registrars, 10% more junior doctors, range of specialties	Not reported	Personal - financial concerns, career implications. Social - balance family and care-giving needs. Organisational - clear information and knowledge of support, support package available, flexibility in working role, workload and staffing management, supportive culture		Clearer parental leave policy and subsequent communication to raise awareness and uptake	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
Grant et al (2019)[33]	Biographical narrative interviewing method	Experience of mental health condition - biographical narrative interviews	Sick leave - mental health condition	Qualitative - Thematic analysis	10 doctors	Invitation email via Health Education England & Wales Deanery, final sample selected purposively	UK	8/10 female, post-medical degree to registrar, cross-specialty	Not reported	Personal - managing disclosure, taking sick leave, loss of professional identity, career support and risk of damage Social - required perception of fulfilment from role, help-seeking behaviour, perception of sick leave and negative attitudes of colleagues Organisational - work design (high pressure, high risk duties, staffing and workforce issues), confidentiality and awareness of management, new colleagues and setting upon return		Improve the support available for doctors with mental health conditions, including a dedicated supervisor/mentor. OH input required but often lacking, and organisational and professionals attitudes towards mental health require improvement	Selection bias

Henderson et al (2012)[34]	Qualitative semistructured interviews	Barriers experienced - 1-3hr semistructured interviews	Sick leave - any illness, for at least 6 months	Qualitative - Thematic analysis	19 doctors	Invitation email via a medical charity, UK regulator or confidential doctor health service	UK	10/19 female, age range 20s-60s, 18/19 mental health problem/addiction, 7 physical health problems, 14 involved with GMC	25% response rate	Personal - Work identity & career, personal identity changes, self-view and sense of failure in work and life generally, beyond low self-esteem to self-stigma Social - relationships with family and friends, stigmatisation, culture of competitiveness and toughness Organisational - support package		Reduce professional stigma towards mental health conditions and improve confidential Occupational Health services for doctors	Selection bias
Hertzberg et al (2016)[35]	Qualitative interviews	Work-life balance & professional dedication - 60-90 minute focus group interviews	All reasons included	Qualitative - Systematic text condensation	48 hospital doctors	Invitation email via union representatives and senior managers	Norway	56% female, 5-45 years experience, 22 registrars and 26 consultants, 19 Psychiatry, 15 internal medicine, 14 surgery	Not reported	Personal - work-life balance as there are too many things to balance and be a good doctor. Social - Colleague relationships, leave equals disloyalty. Organisational - work design (managing clinical and managerial/leadership duties), relationship with management and feeling valued		Adapting the requirements of a doctor's role to their life stage and circumstances. Improve the logistical management of absences and professional attitudes towards taking leave. Closer working relationship between doctors, clinicians and senior management	Selection bias, analysis bias (based on methodology)
McKevitt et al (1997)[36]	Between groups comparison	Prevalence & decision-making - quantitative survey & qualitative interviews	Sick leave - any illness	Mixed method - One-way ANOVA, logistic regression & thematic analysis	1,102 doctors (532 primary care, 506 hospital doctors, 64 additional interviews)	Postal invitation survey via 3 NHS Trusts and 2 primary care providers	UK	Reported by each group in full in the paper	74% response rate	Work design and organisation, alongside poor staffing management and professional work ethic encourage presenteeism and poor attitudes towards sick leave. Personal - self-stigma. Social - attitudes and stigma towards illness representing weakness, pressure from colleagues, professional culture (work ethic), help-seeking behaviour. Organisational - work design and organisation (high pressure), staffing and workload management, organisational culture			Selection bias, measurement bias
Miller (2009)[37]	Cross-sectional survey	Experience of mental health condition - mixed methods survey	Sick leave - mental health condition	Mixed method – Descriptive statistics & content analysis	116 doctors	Invitation message via a doctors peer support organisation (Doctors Support Network)	UK	Mean age 45 (range 26-68), 63% female	35% response rate	Upon returning there was a significantly lower proportion of full time work, replaced by part time working. RTW should be supported with a combination of personal, social and workplace strategies, preceded by preventative approaches where possible. Personal - work-life balance, caregiver duties, career support and damage, personal-professional identity, financial considerations Social - family and social support, colleague stigma and negative attitudes. Organisational - flexibility in working role, OH support	Resources - improved empathy, understanding and job satisfaction, self-awareness, relationships, varied career and WLB	Flexibility to individual needs and work, alongside OH support	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
Nomura et al (2015)[38]	Cross-sectional survey	Barriers experienced - de novo qualitative survey	All reasons included	Qualitative - Kawakita Jiro method (explained in full in paper)	359 female doctors	Invitation email via alumni association	Japan	Median age 45 (range 38-53), 91% working clinically, 60% full time, 74% had children	Not reported	Personal - childcare and caregiver role, confidence in managing work-life balance, professional drive and identity. Social - expectation on working parents to manage personal and professional role. Organisational - work design (long hours and shift patterns), workload and staffing management (staff shortages)			Selection bias, recall bias
Perez-Alvarez et al (2019)[39]	Qualitative semistructured interviews	Experience of illness - semistructured interviews	Sick leave - any serious illness	Qualitative - Inductive qualitative data analysis	10 doctors	Intentional sampling, no further description	Spain	Not reported	Not reported	Personal - career support and damage, clear information, emotional needs, self-view (feel failure, failing colleagues), finance. Social - support from a mentor/supervisor, colleagues' views. Organisational - clear giving of info, workplace and role adaptations, job control	Resources - learn from experience	Improve the 1-to-1 support available from supervisors	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
Reese et al (2015)[40]	Cross-sectional survey	Self-efficacy, clinical procedures - de novo survey ('Redeployment Specialty Skills Matrix Survey')	Active military duty	Quantitative – Descriptive statistics & chi squared	179 family medicine doctors	Invitation email to all active duty medical officers eligible for redeployment via Army Medical Centre	US	Not reported	49% response rate	Self-efficacy increased significantly for management of major trauma and significantly reduced or did not change for all other procedures/scenarios, demonstrating reduced self-efficacy. Personal - self-efficacy for clinical procedures	Only 16% of participants were offered support on returning, possibly due to perceptions of what constitutes absence and return.	Additional training resources to improve self-efficacy for clinical procedures	Selection bias, recall bias, measurement bias
Rizan et al (2019)[41]	Qualitative semistructured interviews	Reasons for career break - 30-45 minute semistructured interview	Career break or leavers - one year break	Qualitative - Content analysis	14 foundation year doctors (2-3 years post medical degree)	Invitation email from training programme, final sample selected purposively	UK	8/14 female, mean age 30 (range 27-35), 10/14 white British	Not reported	A career break can have a positive personal impact on doctors and provide resources for their future career and practice. Personal - fatigue, exhaustion and stress, career support and decisions, job and career control, integrating personal experiences into being doctors (personal-professional identity)			Selection bias, recall bias, measurement bias, data collection bias
Rosta et al (2014)[42]	Between groups comparison	Characteristics of sickness absence - de novo	Sick leave - any illness	Quantitative - Chi-squared, ANOVA, logistic regression	948 doctors (521 hospital doctors, 313 self-	Data from previous study, postal survey from Norwegian Medical Association	Norway	Reported by each group in full in the paper	62% response rate	Self-employed doctors (primary care and private practice) are less likely to take sick leave, other than for serious and chronic conditions. Low professional autonomy and poor self-rated health predict sickness absence, more so that work		Reduce the threshold for sickness absence, both in terms of policy and doctors' attitudes	Selection bias, recall bias, measurement bias

		quantitative survey			employed primary care or private doctors)	to a representative panel of Norwegian doctors				stress, age and gender. Personal - self-view of health. Organisational - professional autonomy			
Sattari et al (2016)[43]	Cross-sectional survey	Infant-feeding intention & behaviour - de novo quantitative survey	Parental leave - maternity	Quantitative – Descriptive statistics & inferential analysis (no further details given)	72 female internal medicine doctors	Data from previous study, recruitment email via training program directors and hospital Women's Task Force	US	Mean age 38 (range 27-58), 26% trainees and 74% consultants, range of IM specialties	Not reported	Only 26% of respondents had received education about breastfeeding. Breastfeeding intention is high but behaviour is prevented due to work factors, including insufficient time for milk expression and inadequate milk supply. Personal - education and awareness, managing disclosure. Social - colleague and peer support. Organisational - flexibility and time through work design, senior colleague awareness and supportive, facilities		Education on infant-feeding, from medical school through to the workplace	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
Saunders et al (2020)[44]	Naturalistic observation	Returner needs, experience and outcomes of training – unstructured observation and field notes	All reasons included	Qualitative – Thematic analysis	58 doctors, 4 allied health professionals, 1 nurse, 1 other clinical professional	Opportunity sampling through training participation	UK	Not reported	Not applicable	Emergent themes relating to participants' needs were psychosocial needs, peer support, and psychological concepts such as self-perception. Personal - psychosocial needs relating to their return to work, wellbeing and self-care, work-life balance, self-esteem, self-identity, confidence. Social - feeling valued, peer support, peer learning, shared experience and not feeling alone or socially isolated, accessing support, respect of peers. Organisational – senior colleague support			Selection bias, measurement bias, analysis bias
van Boxel et al (2020)[45]	Cross-sectional survey	Confidence on RTW - de novo mixed methods survey	Parental leave - maternity	Mixed method – Descriptive statistics	146 paediatric doctors	Invitation email via deaneries/training programs	UK	Not reported - 120/126 had returned to work	Not reported	96% of returners reported a lack of confidence, with 36% requiring more than 3 months to return to pre-absence confidence levels. Personal - childcare, confidence, work-life balance and managing commitments, managing emotional stress. Organisational - supervisor support, keeping in touch/unfamiliar workplace, work design and time		Use a risk stratification score, the 'MoTHER' score, to identify doctors likely to have low confidence on RTW (Months out, Training stage, Hours worked on return, Educational activities, Recognition by consultant)	Selection bias, recall bias, measurement bias, analysis bias (lack of methodology)
Walsh et al (2005)[46]	Qualitative semistructured interviews	Experience of maternity leave - semistructured interviews	Parental leave - maternity	Qualitative - Thematic analysis	21 family medicine doctors	Invitation letter from the Postgraduate Program Director	Canada	Not reported	78% response rate	Personal - high expectations, stress, childcare and breastfeeding, WLB, sleep & fatigue. Social - professional culture, guilt from absences & workload colleagues, colleague and peer support (reduced post-pregnancy without visible difference). Organisational - work design (long hours, unpredictable work demands), staffing management, organisational culture, physical strain, flexibility, facilities (breaks, privacy, fridges), keeping in touch (can improve perceived skills and peer support)	Resources - paid leave, supportive colleagues & seniors, flexible schedules, phased/gradual return.		Selection bias, recall bias, data collection bias, analysis bias
Finlayson et al (2013)[47]	Between groups comparison	Characteristics & morbidity of fitness for duty referrals - historic patient data	Referred for fitness for duty	Quantitative – Descriptive statistics, t-tests or chi-squared, logistic regression	381 doctors	Recruited at fitness for duty evaluation (consent process not described)	US	70% male, 71% white, mean age 49	Not reported	70% of those referred were deemed fit to practice and not offered additional support. Personal - psychological support, behavioural guidance and training		Biopsychosocial evaluation of doctors, their life and their workplace are required for adequate remediation and supported RTW	Analysis bias (team involved)
Isaksson et al (2012)[48]	3-year follow-up intervention study	Emotional exhaustion - Maslach Burnout Inventory	Sick leave - severe distress	Quantitative - T-tests or chi-squared, linear regression	227 doctors (184 at 3-year follow-up)	Invitation upon accessing intervention	Norway	Not described, but used in analyses	94% response rate, 19% attrition rate	Length of full-time sickness absence following a counselling intervention can predict reduced burnout 3 years after initial sickness. No optimum length was found so this should be personalised. Personal - fatigue, emotional exhaustion. Organisational - tailoring of support to individual		Ensure that personal needs are considered on an individual basis	Analysis bias (team involved)
Kodama et al (2012)[49]	Between groups comparison	Working practices - mandatory 'National Survey of Physicians'	All reasons included	Quantitative – Descriptive statistics	86,459 doctors	Mandatory workforce survey distributed via workplaces	Japan	Not reported	90% response rate	The number of female doctors on leave is increasing faster than those returning. Personal - work-life balance and managing care-giver requirements. Organisational - flexibility of working practices, workload and staffing management		Create a working environment that allows female doctors to stay or return to work, starting with policy and workforce planning	
Rose et al (2013)[50]	Between groups comparison	Substance misuse relapse & RTW - clinical records data	Sick leave - substance misuse	Quantitative - T-tests or chi-squared	780 doctors (56 emergency physicians, 724 non-emergency physicians)	Data from previous study, sampling not described	US	Reported by each group in full in the paper	Not reported	There is a higher rate of substance use disorders in emergency physicians, but comparable completion rates of support programs including RTW (72-84%). Personal - psychological health needs. Organisational - Occupational Health programs, personalised for doctors	No differences between specialties in use and completion of support programs.		

**risk of bias that was adequately addressed in the article has not been included here*

Table 1. Search terms.

	Search terms
Population	Doctor* OR Physician*
	AND
Condition	"Back-to-work" OR "Back to work" OR "Return-to-work" OR "Return to work" OR "Return to practice" OR "Return to training" OR "Job return" OR absen*
	AND
Outcomes	“Job resource*” OR “Work resource*” OR Psychosocial OR “Psych* need*” OR “Personal need*” OR “Psych* issue*” OR “Personal issue*” OR “Psych* concern*” OR “Personal concern*” OR Psychological OR “health need*” OR “social need*” OR “organisation* need” OR “work* need”
	NOT
	Patient

Journal database searches

Journal database searches involved running one search each based on population, on condition, and on outcomes:

1. *Doctor* OR Physician**
2. *"Back-to-work" OR "Back to work" OR "Return-to-work" OR "Return to work" OR "Return to practice" OR "Return to training" OR "Job return" OR absen**
3. *“Job resource*” OR “Work resource*” OR Psychosocial OR “Psych* need*” OR “Personal need*” OR “Psych* issue*” OR “Personal issue*” OR “Psych* concern*” OR “Personal concern*” OR Psychological OR “health need*” OR “social need*” OR “organisation* need” OR “work* need”*

These searches were them combined to create one search string, with the following filters and limits:

- No time/date limit
- Must be available in English
- *NOT Patient*

Google and Google Scholar searches

These databases were searched without filters or limits using the following combined search string pasted into the search bar:

- Doctor* OR Physician* **AND** "Back-to-work" OR "Back to work" OR "Return-to-work" OR "Return to work" OR "Return to practice" OR "Return to training" OR "Job return" OR absen* **AND** “Job resource*” OR “Work resource*” OR Psychosocial OR “Psych* need*” OR “Personal need*” OR “Psych* issue*” OR “Personal issue*” OR “Psych* concern*” OR “Personal concern*” OR Psychological OR “health need*” OR “social need*” OR “organisation* need” OR “work* need” **NOT** Patient