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Organisational factors associated with healthcare workforce development, recruitment, and retention in the United Kingdom: a systematic review

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Abstract

Aims To synthesise evidence regarding organisational practice environment factors affecting healthcare workforce development, recruitment, and retention in the UK.

Methods/data sources A systematic search of PubMed, Web of Science, EMBASE, and PsycINFO yielded ten relevant studies published between 2018 and 2023 and conducted in the UK (the last search was conducted in March 2023). Adhering to The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, two independent reviewers conducted screening, sifting, and data extraction, applying the quality assessment tool for risk of bias.

Results Results highlight key factors associated with staff intention to leave/turnover/retention: workplace challenges, aggression, moral distress, on-the-job embeddedness, leadership involvement, organisational support, and flexible shift patterns. Notably, aggression from colleagues, including clinical staff but not interdisciplinary personnel, has a more detrimental impact on staff intention to leave than aggression from patients.

Conclusion The complex and context-dependent impacts of these organisational factors on the UK healthcare workforce underscore the need for tailored interventions. The review acknowledges limitations, including bias from excluding qualitative studies, a small pool of included studies, and nurse overrepresentation.

Summary statement

What is already known Securement and retainment issues affect different aspects of health and care services. Moreover, healthcare workforce shortages persist in the UK.

What this paper adds Our findings on the importance of workplace challenges and aggression, moral distress, on-the-job-embeddedness, leadership, flexible shift pattern, and organisational support in staff retention are important to addressing the current UK healthcare workforce crisis.

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Implications for practice/policy The findings of this review are important to healthcare commissioners, policymakers, and stakeholders, offering valuable insights for dealing with factors contributing to shortages in the healthcare workforce and enhancing staff satisfaction and retention.

Keywords Workforce, Retention, Recruitment, Turnover, Nurses, Allied health professionals, Organisational factors

What does this paper contribute to the wider global clinical community?

Contributes to the evidence on the role of organisational practice environment factors in healthcare workforce development and retention.

Introduction

Healthcare workforce development, recruitment, and retention are critical for providing quality services and achieving and sustaining global strategies, such as Universal Health Coverage (UHC), by ensuring a sufficient, well-trained, and stable workforce [1–3]. Effective healthcare workforce development involves continuous training and skill diversification, enhancing service quality. Recruitment strategies that address geographic disparities and offer incentives can improve accessibility and equity in healthcare. Retention efforts focused on job satisfaction, work-life balance, and ongoing professional development reduce turnover and ensure a motivated and capable workforce. Together, these elements can ensure that healthcare services are comprehensive, accessible, and of high quality, supporting the goals of UHC.

Countries at all income levels face challenges in the education, deployment, retention and performance of their healthcare workforce [4]. By 2030, a global shortage of 10 million health workers is estimated [4, 5]. Recent events have impacted the healthcare workforce challenges. For example, around 100,000 nursing personnel in the United Kingdom (UK) initiated a two-day strike on December 15th 2022, protesting the government's firm position on wage requests [6]. In addition to this industrial action, the health workforce has been influenced by the challenges posed by the COVID-19 pandemic. A recent review highlighted that nurses caring for COVID-19 patients, or those who had experienced COVID-19 infection themselves or within their team, exhibited an increased tendency to consider leaving their positions [7]. By the end of the first quarter of 2024, there were 31,294 vacancies within the Registered Nursing staff group in NHS England [8]. A similar staffing issue is seen among other healthcare professionals, including allied health professionals (AHPs) (paramedics, physiotherapists, occupational therapists, and dieticians, among others) [9, 10]. During the pandemic, not only nurses but also other healthcare workers experienced detrimental effects related to the pandemic. A recent scoping review found that doctors, dentists, radiologic technologists, and other healthcare workers face heightened workload pressures, including more intensive patient care, additional non-routine tasks, increased documentation, greater demands and skill requirements, more overtime and extended work hours, and higher patient-to-nurse ratios [11].

Securement and retainment issues affect different aspects of health and care services. A high turnover and shortage of doctors, nurses and Allied Health Professionals (AHPs) indicate retention issues and impact care quality, patient outcomes, and the cost of healthcare delivery [12–15]. Addressing these issues requires an extensive understanding of their drivers.

Studies have identified several factors influencing healthcare workforce recruitment and retention, including organisational culture, professional development opportunities, staff level and mix, compensation and benefits, work-life balance, geographical location, support, transformational leadership, leadership, well-being, job satisfaction, technology and equipment [16–19]. A recent systematic review identified professional development opportunities and pay as important factors in NHS workers' job satisfaction and retention [16]. Healthcare workers are often attracted to NHS organisations that offer competitive salaries and comprehensive benefits packages.

The relationship between recruitment/retention/turnover intention and contextual/organisational factors extends beyond the UK. In Europe, the economic climate and cost-of-living crisis in mid-2022 impacted pay, attrition rates and the attractiveness of working in healthcare [20]. A systematic review of the prevalence of intention to leave and determinants of retention among nurses and physicians in European and non-European countries reported job satisfaction, career development and work-life balance as the main determinants of job retention [21]. A recent qualitative study adopting co-creation workshops and Delphi sessions with healthcare professionals from Belgium, the Netherlands, Italy, and Poland reported professional and personal support, education, financial incentives, and regulatory measures as key to addressing staff retention in healthcare [22]. A study in China reported a reduction in turnover intention with an increase in staff salary level and job satisfaction, with factors such as conflicts with colleagues increasing turnover intention among nurses [23]. A global perspective, as presented in a systematic review, emphasises that turnover intention in nurses is influenced by organisational factors such as nursing home and staffing characteristics, resident characteristics, and job satisfaction [24].

The review

Within the United Kingdom (UK) healthcare economy, there is inconsistency in reports on the impact of the organisational practice environment on healthcare workforce securement and retainment. As the evidence in this area keeps evolving with changes and events such as increased cost of living [25], there is a need to integrate information on what is known on this subject to support policies and practices toward healthcare workforce improvement.

Aims

This systematic review aims to advance an understanding of organisational practice environment factors affecting healthcare workforce development, recruitment, and retention in the UK by synthesising existing evidence in this area.

Methods/methodology

Design

Guidelines and study registration

This systematic review (without a meta-analysis) followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [26]. The protocol was registered with PROSPERO, the International Prospective Register of Systematic Reviews (registration number: CRD42023412559).

Table 1 Study selection criteria

	Inclusion Criteria	Exclusion Criteria
Countries of interest	United Kingdom	Rest of the world
Language	English	Non-English
Publication Date	Last five years (2018 to 2023)	Before 2018
Publication Type	Peer-reviewed research Articles	Thesis, literature reviews, editorials, study protocols, book chapters
Research Design	Quantitative (cross-sectional, longitudinal)	Descriptive, case studies
Population (working in all healthcare settings)	Nurses/allied health professionals (Art therapists, Drama therapists, Music therapists, Podiatrists, Dietitians, Occupational therapists, Operating department practitioners, Orthoptists, Osteopaths, Paramedics, Physiotherapists, Prosthetists and orthotists, Radiographers, Speech and language therapists)	Other clinicians, other occupational groups, patients, students, pharmacists
Predictor/ independent variable	Indicators of organisational practice environment	Other non-organisational factors
Primary Outcomes	Recruitment, retention, intention to leave/stay, turnover	Quality of care, mental wellbeing

Inclusion and/or exclusion criteria

Inclusion criteria were studies conducted in the UK, published in the English language in the last five years (2018 to 2023), peer-reviewed research articles, employed quantitative research designs (e.g., cross-sectional and longitudinal), and recruited nurses and/or various allied health professionals working in all healthcare settings as the study sample. To include nurses and allied health professionals working on a diverse range of roles, there was no restriction based on their roles. Papers published in English in the last five years (2018 to 2023), adopted a quantitative design (including mixed methods paper with the intention to extract only the quantitative results), and were conducted in the UK were selected. The primary predictor or independent variable of interest was indicators related to the organisational practice environment, and the primary outcomes were recruitment, retention, intention to leave/stay, and turnover. The eligibility criteria are further presented in Table 1.

Exclusion criteria were studies conducted outside the UK, non-English-language publications, published before 2018, non-peer-reviewed sources (e.g., theses, literature reviews, editorials), non-quantitative research designs (e.g., qualitative and case studies), and other groups not falling under the specified allied health professions (such as pharmacists, clinicians, students and patients). Additionally, outcomes related to the quality of care and mental well-being were outside the scope of this review.

Search methods

We used the Population Intervention, Comparison and Outcome (PICO) framework (without the optional 'comparison' element as this was not relevant to our research question) to guide the search [27, 28].

- Population (P): Healthcare workforce (nurses and allied health professionals) in the United Kingdom.
- Intervention (I): Organisational practice environment factors.
- Outcome (O): Workforce development, recruitment, and retention.

Information sources

PubMed, Web of Science, EMBASE, and PsycINFO were searched for relevant articles; the last search was conducted in March 2023. An example of a database search strategy is provided in Appendix 1 (see Appendix 1, Additional File 1). The reference lists of the selected publications were also searched for eligible papers.

Study selection

All potential records generated from the search of databases were collated and uploaded into Endnote© Version

X8. Duplicates were identified and removed using the Endnote functions. Two reviewers (PA and EA) screened titles and abstracts to assess each record according to the inclusion criteria. Screening of titles and abstracts resulted in the exclusion of papers ineligible based on population (e.g., first-year students, patients), design (review papers), and relevance of title and abstract. Studies retained after title and abstract screening were reviewed in full-text sifting by three researchers (NC, PA, and EA). Any disagreements that occurred among reviewers were resolved through discussion.

Data extraction

Two reviewers (EA and PA) independently performed data extraction. They used a data extraction form to extract information on the study design, participants' characteristics, indicators of organisational practice environment factors reported, and study outcomes (Table 2).

Quality appraisal

The National Heart, Lung and Blood Institute (NHLBI) Study Quality Assessment Tool [39] for observational cohort and cross-sectional studies was used to assess the quality of the included studies for risk of bias (Table 3). The tool comprises 15 questions that thoroughly examine various aspects of the studies, such as their aims, sample size, design, outcome and independent measures, confounding variables, and inclusion/exclusion criteria. Two reviewers (EA and PA) independently assessed each question by assigning a rating of 'yes' for a low risk of bias, 'no' for a high risk of bias, 'Not Reported' when no supporting information was available, and 'NA' if the criteria were not applicable. Any discrepancies in the quality ratings between reviewers were resolved through discussions and consensus with the third reviewer. To ensure the validity and reliability of the review's conclusions, studies rated as 'poor' will be removed as their results may be unreliable.

Data synthesis

Given the methods of analyses and outcomes reported in the included studies, a narrative synthesis, compared to a meta-analysis, was a better fit for synthesising the results. The narrative synthesis followed the methodologies proposed by the Cochrane Consumers and Communication Review Group's Data Synthesis and Analysis document [40] and the Guidance on the Conduct of Narrative Synthesis in Systematic Reviews by the UK Economic and Social Research Council Methods Programme [41]. The results were integrated based on the reported organisational practice environment factors.

Results/findings

Study selection

All potential records (n=4216) generated from the search of databases were collated and uploaded into Endnote© Version X8. Duplicates (n=1043) were identified and removed using the Endnote functions, leaving 3173 records. Screening of titles and abstracts resulted in the exclusion of 3001 papers. The full texts of the remaining 111 papers were screened, resulting in the exclusion of 101 papers due to inclusion criteria, study design and location. The remaining 10 papers (32–41) were included in the review (see Fig. 1 for the PRISMA flowchart showing the selection process). No additional papers were identified through the reference lists of the included studies.

Characteristics of the included studies

A summary table of the characteristics of the included studies is provided in Table 2. Most of the studies recruited participants working in hospital settings, with two studies conducted in a care home/community nursing setting [33, 37]. While our primary focus was on nursing and allied health professionals with no restriction based on role, it is important to highlight that the studies included in our review featured a range of distinct roles within these staff groups. These encompassed clinical and non-clinical roles, frontline clinical staff, and managerial positions. To further elucidate the composition of the study samples, we have detailed the specific staff groups investigated in each study within Table 2. All the studies incorporated a quantitative component, with two adopting a mixed methods approach [31, 35]. Nearly all the studies were cross-sectional; only one had a longitudinal design [33]. The sample sizes varied across the studies, ranging from 116 to 36,850 participants, with most studies reporting nurses as their participants. The analyses employed in the included studies were varied, with correlation and regression analyses commonly reported. Multiple tools were used to assess outcomes (see Appendix 2, Additional File 1 for a description of the indicators reported and how they were measured in each study). Authors employed various measurements in their studies to capture specific dimensions of interest. For example, when investigating intention to leave, some studies used single-item questions such as "Are you considering leaving your job?" [29, 37] or multi-item Likert scale-based questions to gauge the degree of intention to leave [30, 34]. Actual turnover was assessed through self-report measures, where care home managers, for example, reported the number of staff left over a given period [33]. Retention was measured using questionnaires that examined factors influencing retirement age and timing [31] or was calculated using organisational workforce data [36].

Table 2 Characteristics of included studies

Authors and year	Title	Aim(s)/Focus	Study design	Analysis	Setting/Location	Sample and sample size	Measurements
(Blake et al. [29])	COVID-Well: Evaluation of the Implementation of Supported Wellbeing Centres for Hospital Employees during the COVID-19 Pandemic	To determine facility usage and gather insight into employee wellbeing and the views of employees towards this provision	Quantitative-Cross Sectional	chi square test independent samples t test one-way ANOVA	Acute hospital trusts/across UK	*N* = 819 Registered Nurses/ Midwives Admin/clerical Central/ Corporate Functions Medical & Dental General Management Ancillary/ Maintenance Nursing/ Healthcare Assistants Doctor in training Ambulance Trust grade/ Clinical Fellow Non nursing clinical support AHP/ Healthcare Scientists/ Scientific & Technical	- Warwick Edinburgh Mental Well being Scale: WEMWBS - Utrecht Work Engagement Scale - four single-item global measures of job stressfulness, job satisfaction, turnover intentions, presenteeism, and work engagement.
(Cheng et al. [30])	How do aggression source, employee characteristics and organisational response impact the relationship between workplace aggression and work and health outcomes in healthcare employees? A cross-sectional analysis of the National Health Service staff survey in England	To examine the prevalence of aggression in healthcare and its association with employees' turnover intentions, health and engagement, as well as how these effects differ based on aggression source (patients vs. colleagues), employee characteristics (race, gender and occupation) and organisational response to the aggression.	Quantitative-Cross Sectional	Multilevel moderated regression analysis	147 acute NHS trusts/England	*N* = 36,850 Medical/ dental Nursing/midwifery (*n* = 22 534) AHPs (*n* = 9130)	NHS staff survey

Table 2 (continued)

Authors and year	Title	Aim(s)/Focus	Study design	Analysis	Setting/Location	Sample and sample size	Measurements
(Cleaver et al. [31])	Factors influencing older nurses' decision making around the timing of retirement: An explorative mixed-method study	To understand factors influencing decision making of older nurses around timing of retirement	Mixed Method-Cross Sectional	Pearson's correlation coefficient chi-square test	NHS Trust/Across UK	*N* = 524 Nurses working across healthcare organisations	The questionnaire comprised 42 questions related to expected retirement age, and "push-pull" factors influencing the timing of retirement; these factors were identified through an integrative review of the literature.
(Colville et al. [32])	A survey of moral distress in staff working in intensive care in the UK	To add to the literature by using this scale to establish levels of moral distress in a sample of physicians and nurses working in adult ICU settings in the United Kingdom	Quantitative-Cross Sectional	Linear regression analysis Mann–Whitney U Kruskal–Wallis H tests Spearman's rho	Intensive Care Units/UK	*N* = 171, Physician Nurse (*n* = 145)	- Moral Distress Scale-Revised (MDSR) - Patient Health Questionnaire-4 (PHQ-4) -Single item for intention to leave
(Costello et al. [33])	Burnout in UK care home staff and its effect on staff turnover: MARQUE English national care home longitudinal survey	To explore burnout's relationship with staff turnover and prevalence and predictors of burnout	Quantitative-Longitudinal	linear regression	Care home/across England	*N* = 2062 Includes nurses but the number of nurses is not specified.	- Therapeutic Environment Screening Survey for Nursing Homes and Residential Care - Maslach Burnout Inventory. - To estimate percentage yearly turnover of staff whilst accounting for care home size, the number of staff leaving over 12 months was divided by the total number of staff working at the care home over the 7 days before baseline

Table 2 (continued)

Authors and year	Title	Aim(s)/Focus	Study design	Analysis	Setting/Location	Sample and sample size	Measurements
(Fasbender et al. [34])	Job satisfaction, job stress and nurses' turnover intentions: The moderating roles of on-the-job and off-the-job embeddedness	To test on-the-job embeddedness and off the-job embeddedness as possible moderators for the predictive effects of job satisfaction and job stress on nurses' turnover intentions	Quantitative-Cross Sectional	Hierarchical multiple regression and simple slope analyses	Hospital/Oxfordshire	*N* = 361 Nurses	- the Psychiatric Nurse Job Stressor Scale - Job Embeddedness Scale - Turnover intentions were assessed with three items derived from Cammann, Fichman, Jenkins, and Klesh (1979).
(Quek et al. [35])	Distributed leadership as a predictor of employee engagement, job satisfaction and turnover intention in UK nursing staff	To investigate how distributed leadership via the Shared Governance programme influences employee engagement, empowerment, job satisfaction and turnover intentions among direct care nursing staff	Mixed Method-Cross Sectional	Hierarchical multiple regression	NHS Teaching Hospital Trust/UK but not specified	*N* = 116 registered and nonregistered direct care nursing staff	- Utrecht Work Engagement Scale - The Distributed Leadership Agency (DLA) - The Turnover Intention Scale (TIS-6) - The Minnesota Satisfaction Questionnaire-Short Form
(Robinson et al. [36])	Does registered nurse involvement in improving healthcare services, influence registered nurse retention?	To describe possible relationships between registered nurses' involvement in improving healthcare services and RN retention	Quantitative-Cross Sectional	Kendall's tau	Secondary data for National Health Service (NHS) Trusts in England	*N* = 218 Community RN Mental Health RN Acute RN Specialist RN	- NHS Staff Survey core questionnaire - NHS Electronic Staff Record
(Senek et al. [37])	Should I stay or should I go? Why nurses are leaving community nursing in the UK	To map working conditions as well as identify differentiating characteristics of community nurses that intend to leave their profession	Quantitative-Cross Sectional	Logistic regression	community nurses across UK	*N* = 533	Authors created questionnaire exploring differences in individual and organisational factors between those nurses that intend to leave and those that intend to stay in the community nursing profession.

Table 2 (continued)

Authors and year	Title	Aim(s)/Focus	Study design	Analysis	Setting/Location	Sample and sample size	Measurements
(Witton et al. [38])	Moral distress does this impact on intent to stay among adult critical care nurses?	To explore Critical Care nurses moral distress levels using the Moral Distress Scale Revised (MDS-R) and its relationship with intention to stay	Quantitative-Cross Sectional	Pearson's r correlation coefficient	Critical Care units across the Midlands region	*N* = 266 Educator Manager Sister (band 6) Sister (band 7) Staff Nurse (band 5) Staff Nurse (band 6)	- Moral Distress Scale Revised (MDS-R) - Intention to Stay

Quality assessment

Overall, the quality ratings varied across studies, with most studies rated as fair or good. The specific quality ratings for each study are provided in Table 3. Six of the ten papers were rated as good, while four were rated as fair. All studies clearly stated their research aim/question. The study population was also clearly specified and defined in all studies. The participation rate of eligible persons was below 50% in most studies, except for two studies where this information was not reported. All study subjects were selected or recruited from the same or similar populations, and the timeframe was considered sufficient to observe associations between exposure and outcome. Most studies did not provide sample size justification or power calculation; only four studies reported this information [29, 31, 35, 37]. Potential confounding variables were measured and adjusted for in most studies except for four [29, 36–38].

Organisational practice environment factors

The associations between organisational environmental factors and healthcare staff intention to leave/actual turnover/retention is summarised in Table 4.

Working conditions (workload, burnout, and job stress)

Four of the included studies [29, 33, 34, 37] investigated associations between workplace challenges (job stress, burnout and working conditions) and staff turnover or intention to leave. The study reporting burnout (defined by the WHO as "*a syndrome conceptualised as resulting from chronic workplace stress that has not been successfully managed*" [42]) found no association with staff turnover [33]. One study reported a positive association between job stress (that is, the mental situation individuals may experience when they are confronted with job demands and pressures that do not align with their skills and capabilities [43]), and nurses' intention to leave [34]. Two studies reported the effect of working conditions on intention to leave [29, 37], with one focusing on staff experience working in COVID-19 high-risk areas [29]. The COVID-19-focused study found no difference in turnover intention between those working in higher- or lower-risk areas. Another study found that staff intention to leave significantly decreased with improvements in working conditions (0.49 (0.34–0.70), $p < 0.001$) [37].

Workplace aggression

Workplace aggression, in this context, refers to encountering actions that pose potential harm, are actively avoided by the target, and take place during the target's work duties [44]. Only one study investigated the impact of workplace aggression on staff intention to leave. The study by Cheng et al. found that experiencing aggression from either patients or colleagues had a damaging effect on staff intention to leave, with the impact of aggression from colleagues twice that from patients [30].

Moral distress

The results of the two studies that reported on moral distress were consistent. Colville et al. found that moral distress (resulting from situations when someone is aware of the correct course of action but institutional constraints create significant obstacles to following through with the right decision) predicts staff intention to leave and turnover [32]. Similarly, Witton et al. reported that moral distress was negatively correlated with intent to stay; nurses who stated they had high rates of moral distress were more likely to consider leaving their current employer [38].

On-the-job embeddedness

One of the included studies considered job embeddedness (the degree of connection employees have to their jobs through a network of social relationships and factors [45]), with a negative association between this organisational practice environment factor and nurses' intention to leave reported [34].

Involvement in leadership and management

Two studies reported the effect of staff involvement in leadership and management. Quek et al. found that higher levels of distributed leadership significantly

Table 3 Risk of bias in eligible studies based on the quality assessment tool for observational cohort and cross-sectional studies

Criteria	(Blake et al. [29])	(Cheng et al. [30])	(Cleaver et al. [31])	(Colville et al. [32])	(Costello et al. [33])	(Fasbender et al. [34])	(Quek et al. [35])	(Robinson et al. [36])	(Senek et al. [37])	(Witton et al. [38])
1. Was the research question or objective in this paper clearly stated?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2. Was the study population clearly specified and defined?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3. Was the participation rate of eligible persons at least 50%?	NR	Y	N	N	Y	N	Y	NR	N	N
4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5. Was a sample size justification, power description, or variance and effect estimates provided?	N	N	Y	N	Y	N	Y	N	Y	N
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y	Y	N	Y	Y	Y	Y	Y	N	Y
10. Was the exposure(s) assessed more than once over time?	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y	Y	N	Y	Y	Y	Y	Y	N	Y
12. Were the outcome assessors blinded to the exposure status of participants?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
13. Was loss to follow-up after baseline 20% or less?	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	N	Y	Y	Y	Y	Y	Y	N	N	N
15. Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?	N	N	Y	N	Y	N	N	Y	Y	N
Quality Rating (Good, Fair, or Poor) EA	**Fair**	**Good**	**Fair**	**Good**	**Good**	**Good**	**Good**	**Good**	**Fair**	**Fair**
Quality Rating (Good, Fair, or Poor) PA	**Fair**	**Good**	**Fair**	**Good**	**Good**	**Good**	**Good**	**Good**	**Fair**	**Fair**

Yes (Y) No (N)

(CD, NR, NA) * CD, cannot determine; NA, not applicable; NR, not reported

predicted lower turnover intention [35]. Robinson et al. investigated the association between involvement in improvement (measured using three indicators: the ability to make suggestions to improve their work, involvement in decisions on changes that affect their work area, and ability to make improvements in their area of work) and the retention of nurses working across different types of NHS Trusts (Community, Specialist, Mental Health and Acute). Only two indicators of improvement (ability to make suggestions to improve their work and ability to make improvements in their area of work) were significantly correlated with RN retention, and this was seen in those working in mental health and acute NHS trusts [36]. For RNs in Mental Health NHS Trusts, retention was positively correlated with their ability to make suggestions to improve their work and their ability to make improvements in their area of work. However, in Acute NHS Trusts, a negative correlation was seen between RNs' ability to make improvements in their area of work and their retention.

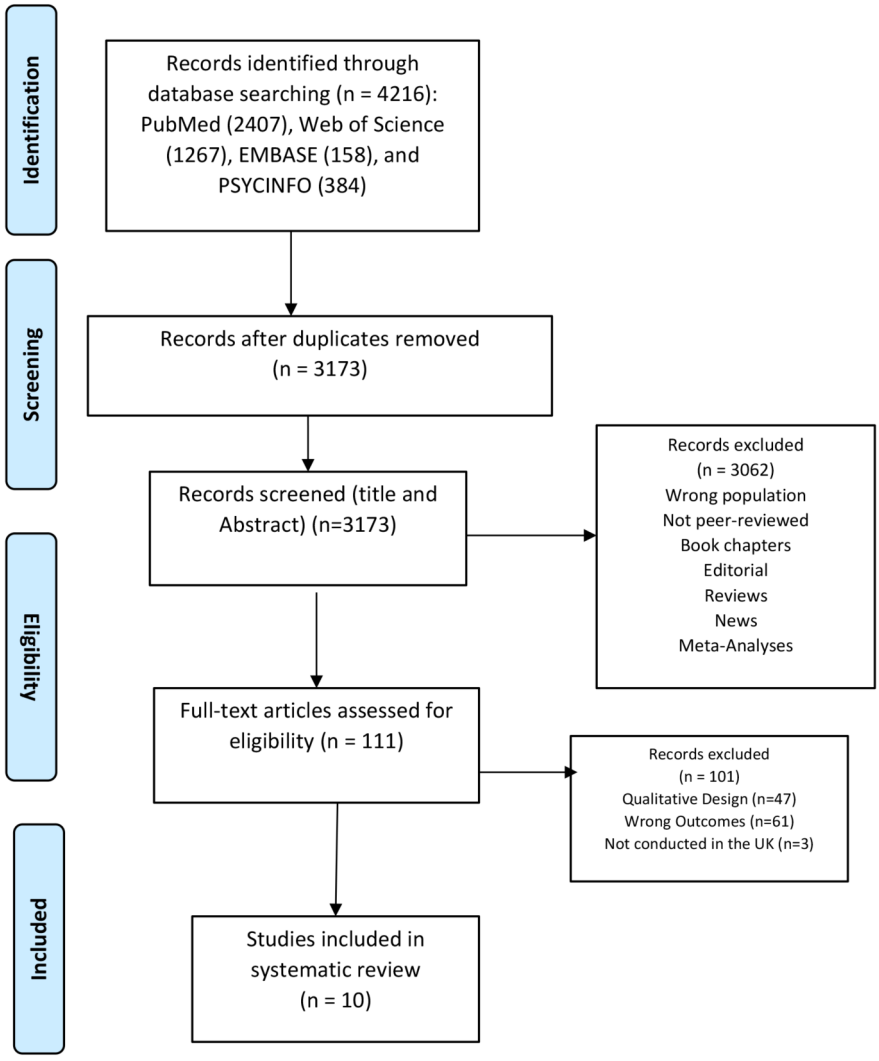

Fig. 1 Prisma diagram showing the selection of articles for review

Support (wellbeing and management support)

Two studies reported on aspects of organisational support. The COVID-19-focused study by Blake et al. found no significant differences in turnover intentions between staff who accessed a supported wellness centre set up in UK hospitals to mitigate the psychological impact of the pandemic and those who did not [29]. The other study reported that support from managers reduced the odds of staff indicating an intention to leave [37].

Flexible shift patterns

With a focus on older nurses (over 55 years of age), Cleaver et al. examined the relationship between shift patterns and the odds of working beyond retirement. The odds of working beyond retirement are significantly higher if staff can reduce their working hours and choose when to work or have a fixed working pattern. However, other factors, such as cessing to work shifts, nights and weekends, were not significantly associated with the intention to work beyond retirement [31].

Discussion

Our review synthesised quantitative evidence on the impact of organisational practice environment factors on healthcare workforce development and retention. The included studies reported the impact of working conditions, workplace aggression, moral distress, on-the-job embeddedness, leadership and management involvement opportunities, well-being and management support and flexible shift patterns on the intention to leave, actual staff turnover and retention among nurses and AHPs in the UK. Intention to leave was the most reported outcome (with studies investigating its association with all reported organisation practice environment factors, except flexible shift pattern), demonstrating

Table 4 Associations between organisational practice environment factors and healthcare staff intention to leave/actual turnover/retention

Organisational practice environment factors	Outcomes		
	Intention to leave (turnover intention) (*n* = 7)	**Actual staff turnover (*n* = 2)**	**Retention (*n* = 2)**
Workplace challenges (job stress, burnout, and working conditions) (*n* = 4)	• The odds of staff indicating an intention to leave significantly reduce with increases in working conditions (0.49 (0.34–0.70)) [37]. • There were no differences in turnover intentions between those working in higher or lower COVID-19 risk areas [29]. • Job stress was positively associated with nurses' turnover intentions (0.30, $p < 0.01$) [34].	• No significant association between any burnout measure and staff turnover (emotional exhaustion: −0.84 (−2.85, 1.17); staff depersonalisation: 1.50 (−4.01, 7.01); personal accomplishment: 0.24 (−2.20, 2.68)) [33].	-
Workplace aggression (*n* = 1)	• Both forms of aggression were significantly associated with turnover intentions, however the effect of aggression from colleagues was more than twice the size of the effect of aggression from patients (Aggression from colleagues: 0.68 (0.62 to 0.75); Aggression from patients: 0.28 (0.22 to 0.34)) [30].	-	-
Moral distress (*n* = 2)	• The mean moral distress scores were significantly higher among staff currently considering leaving their job (85.5 vs. 67.2, $p = 0.04$) [32]. • Moral distress was negatively correlated with intent to stay scores ($r = 0.20$, $p = 0.02$). Moral distress was also significantly negatively correlated with intention to stay with their current employer ($r = 0.28$, $p < 0.001$) [38].	• The mean moral distress scores were significantly higher among staff who left or considered leaving a job for this reason in the past (86.9 vs. 62.1, $p < 0.001$) [32].	-
On-the-job embeddedness (*n* = 1)	• On-the-job embeddedness was negatively associated with nurses' turnover intentions (-1.07, $p < 0.01$) [34].	-	-
Involvement in leadership and management (*n* = 2)	• Higher levels of distributed leadership significantly predicted lower turnover intentions; reducing intention to leave by 8.1% [35].	-	• For RNs in Mental Health NHS Trusts, retention was positively correlated with their ability to ability to make suggestions to improve their work (0.24, $p = 0.030$), and ability to make improvement happen in their area of work (0.28, $p = 0.012$). However, in Acute NHS Trusts, a negative correlation was seen between RN ability to make improvement happen in their area of work and their retention (-0.15, $p = 0.032$) [36].
Support (wellbeing and management support) (*n* = 2)	• No significant differences in turnover intentions between staff who accessed a supported wellness centre set up in UK hospitals to mitigate the psychological impact of the pandemic and those who did not [29]. • Support from managers reduced the odds of staff indicating intention to leave (0.16 (0.08-0.030)) [37].	-	• -

Table 4 (continued)

Organisational practice environment factors	Outcomes		
	Intention to leave (turnover intention) (*n* = 7)	Actual staff turnover (*n* = 2)	Retention (*n* = 2)
Flexible shift patterns (*n* = 1)	-	-	• The odds of working beyond retirement is significantly higher if staff are able to reduce the number of work hours (1.84 (1.05, 3.22)), and choose when to work or have a fixed working pattern (2.64 (1.53, 4.56) than if they are not. However, other factors such as not working shifts (0.44 (0.14, 1.37), nights (1.60 (0.48, 5.38) and weekends (0.74 (0.26, 2.11) any more were not significantly associated with intention to work beyond retirement [31].

its importance in workforce planning and strategies for targeted retention, continuity of care, and employee engagement.

Our findings suggest that the influence of organisational factors on securement and retention is complex and context-dependent. For instance, findings on the impact of workplace challenges on intention to leave and staff turnover were mixed; while some studies indicate that workplace challenges, such as job stress and working conditions, are associated with higher intention to leave, other studies showed no significant relationship. These mixed findings could be attributed to various factors, including differences in study methodologies, sample characteristics, organisational contexts, events and the specific nature of the workplace challenges examined. A recent systematic review reported increased intention to leave among nurses driven by disruptive events such as the COVID-19 pandemic, with approximately one-third of nurses having thoughts about leaving their job [46].

Our review finding that workplace aggression from colleagues has a more detrimental impact on staff retention than workplace aggression from patients suggests that the source of aggression plays a significant role in its effect on staff intention to leave. A similar finding on the impact of aggression and its source on retention and securement has been reported in other UK [47] and non-UK studies [48–50]. Workplace aggression from colleagues has been attributed to factors such as misunderstanding of job roles and responsibilities, emotional exhaustion and job stress [49, 50]. When aggression originates from colleagues, who are expected to provide support and collaboration, it can have a more profound negative impact on individuals' job satisfaction and overall well-being. Additionally, aggression from colleagues may erode social support networks, trust, teamwork, and on-the-job-embeddedness (the extent to which employees feel rooted in their work, have strong social connections, and perceive a good fit between themselves and their colleagues/job) [34, 51]. Our finding on on-the-job embeddedness emphasises the significance of fostering among colleagues a sense of belonging, positive relationships, and alignment to enhance staff retention.

The impact of moral distress on staff intention to leave resonates with the persistent workforce issues worsened by recent industrial actions and the cost-of-living challenges. Organisational factors such as working in an understaffed environment and inadequate financial remuneration can constrain healthcare professionals from acting in accordance with their ethical principles [52]. For instance, the recent cost-of-living crisis in the UK might partly explain the increasing reports of moral distress among healthcare professionals as they struggle with financial challenges while providing care, impacting job satisfaction and intentions to leave.

The perspective of our review is limited by the inclusion of only quantitative studies. Excluding qualitative studies could limit our ability to capture the process, complexity, and context of organisational practice environment factors' influence on healthcare workforce securement and retention. Compared to observational studies, randomised controlled trials could have provided stronger evidence for causal inference. The review has other limitations stemming from the strict inclusion criteria, focusing solely on the UK population, resulting in a small number of studies with an overrepresentation of nurses compared to allied health professionals. The observational nature of the included studies introduces potential bias from uncontrolled confounders. While emphasising nursing and allied health professionals, it is acknowledged that diverse staff groups have unique needs. Balancing evidence from general population studies with role-specific investigations is crucial for a comprehensive understanding of healthcare workforce issues and devising solutions. The variation in outcome measures in the

included studies (see Appendix 2) poses a challenge, hindering direct comparisons and preventing a meaningful meta-analysis due to the lack of standardised measurement approaches. Our focus on peer-reviewed publications, excluding grey literature, could lead to overlooking relevant studies; however, this restriction was important in ensuring the inclusion of high-quality, rigorously peer-reviewed research papers, thereby enhancing the reliability and validity of our findings. Acknowledging these limitations is essential for interpreting the nuanced landscape of healthcare workforce development and retention issues.

Conclusions

Our findings have practical, policy and research implications. This review contributes to the evidence needed by healthcare commissioners and policymakers to address persistent workforce securement and retention issues in the UK. Our results underscore the need for tailored strategies focusing on key aspects, such as reducing workplace aggression from colleagues. The review evidence can inform policies and practices aimed at promoting work-life balance, offering career development opportunities, fostering a positive workplace culture, providing competitive compensation, and implementing flexible work arrangements to enhance healthcare workforce retention. Additionally, our findings highlight the need for further research to understand how different organisational practice environment factors interact with individual and external factors to influence the intention to leave specific healthcare settings. Nevertheless, it is crucial to highlight that the healthcare workforce in the UK is dynamic and continues to be influenced by ongoing events, such as industrial actions and cost-of-living challenges [6, 25]. Future research should address these dynamics, with an emphasis on developing strategies to meet the evolving challenges faced by the healthcare workforce.

Based on our findings, to improve healthcare staff development, recruitment, and retention, we recommend prioritising proactive organisational policies and interventions co-developed with healthcare workers that aim to create supportive and empowering work environments.

Abbreviations

SDGs	Sustainable Development Goals
UHC	Universal health coverage
UK	United Kingdom
AHPs	Allied health professionals

Supplementary Information

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Supplementary Information 1

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Author contributions

Study design: EA, PA, NC. Study execution: EA, PA, NC. Data analysis: EA, PA. Manuscript preparation and write up: EA, PA, NC.

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Data availability

The dataset used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Patient or public contribution

No Patient or Public Contribution.

Competing interests

The authors declare no competing interests.

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