

Factors associated with leaving, moving overseas, and flexible working among ethnically diverse UK healthcare workers

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Abstract

Background

Retaining staff is essential to maintain a stable and productive healthcare workforce. However, existing evidence masks variation among staff groups most at risk of attrition. Most research has considered attrition as a single outcome (leaving the workforce) without considering how and why different groups leave, relocate, or may stay but reduce their hours and/or duties. This study applied job embeddedness (JE) theory of attrition in a large, and diverse, sample of UK healthcare workers (HCWs), examining predictors of three distinct attrition pathways: leaving healthcare role entirely, reducing clinical duties and/or working hours, and moving overseas.

Methods

We analysed cross-sectional data from 7,773 UK HCWs collected between November-2024 and April-2025 as part of the UK-REACH cohort. We created three binary outcome variables, each reflecting reported intentions and/or actions: leaving healthcare role entirely, reducing clinical duties and/or working hours, and moving overseas. Respondents could report more than one outcome, so the three pathways were not mutually exclusive. We examined these using multivariable logistic regression.

Results

41.5% of HCWs reported intentions and/or actions to leave their healthcare role entirely, 57.7% to reduce their clinical duties and/or working hours, and 31.6% to move overseas. Off-the-job embeddedness was strongly associated with lower odds of moving overseas (aOR=0.21, 95%CI:0.16-0.27). On-the-job fit was protective against both leaving healthcare role entirely (aOR=0.63, 95%CI:0.48-0.82) and reducing clinical duties and/or hours (aOR=0.69, 95%CI: 0.53-0.90) but not associated with moving overseas. On-the-job sacrifice was protective against leaving healthcare role entirely (aOR=0.34, 95%CI:0.27-0.43) but associated with higher odds of reducing clinical hours (aOR=1.36 95%CI:1.09-1.70). Job satisfaction and organisational trust were protective, while workplace discrimination and financial insecurity increased odds of leaving across all pathways. Ethnicity, migration status, gender, and occupational group showed pathway-specific associations.

Conclusions

JE theory assumes that stronger ties to work and community reduce attrition uniformly. Our findings suggest a more nuanced pattern: different embeddedness dimensions protected against different attrition pathways, rather than acting as a single general protective force. Universal measures to reduce discrimination, financial insecurity, job satisfaction, and organisational trust should be combined with pathway-specific policies: strengthening community and family ties to reduce overseas migration, and improving on-the-job fit to reduce role exit and reduction in duties and/or hours.

Collaborators

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Author Contribution

MP conceived of the idea for the original UK-REACH study and led the funding application. MP and KW conceived of the idea for I-CARE and led the funding application, with CAM, AM^a, ALG and SVK. The I-CARE questionnaire (wave 6 for the UK-REACH cohort) was designed by CAM, ALG, KW, MP and the Study Collaborative group. AM^e and LB built and maintained the study database and consent platform and curated data to ensure anonymity. HR managed the project, including interactions with recruiting sites and supporting all aspects of the project including design of participant facing documentation, website and database and recruitment. VM supported the project including participant support. KW, MP, SVK, AM^a, CAM and RM formulated the analysis plan. RM and CAM accessed, verified and analysed the data. RM drafted the manuscript with input from AM^a, CAM, SVK, KW and MP. All named authors reviewed and approved the final version of the manuscript for publication.

Declaration of interests

ALG reports collaborative research funding from Orion Pharma, outside of the submitted work. MP reports grants from Sanofi, grants and personal fees from Gilead Sciences and personal fees from QIAGEN, outside the submitted work.

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Ethics

The UK-REACH study was reviewed by London-Brighton and Sussex NHS REC, and received a favourable outcome on 12th October 2020, with Work package 2- the longitudinal

Questionnaire cohort study - added by substantial amendment with a Favourable outcome received on 20th November 2020. The I-CARE Work package 3 sub-study (including informed consent processes for existing cohort participants and new recruitment) was added via substantial amendment 18, receiving favourable opinion on the 20th August 2024. IRAS project ID: 288316, REC reference: 20/HRA/4718.

1. Introduction

The NHS is the largest employer in the United Kingdom, employing over 1.55 million people in NHS hospitals and community health services in England as of November 2025[1]. It is heavily reliant on professionally qualified clinical staff, who account for over half (54.9%) of the full-time equivalent workforce alongside other key staff groups, and on ethnic minority staff, who make up approximately one in four staff members[2].

The COVID-19 pandemic has had a sustained impact on the retention and attrition of the NHS workforce, with evidence indicating that more than half of healthcare workers (HCWs) reporting either considering or having taken action to leave their current role [3]. NHS England data for December 2025 show a vacancy rate of 6.5%, representing over 100,000 unfilled posts[4]. The consequences for patient care are considerable: sustained staffing shortfalls have been associated with reduced care quality and longer waiting times, and NHS waiting lists in England stood at 7.11 million in December 2025[5]. The significant financial costs of workforce shortages also have implications for the sustainability of the NHS[6]. Retaining staff across all professional and demographic groups is therefore essential to maintain a stable and productive healthcare service.

For NHS organisational retention policies and practices to be effective across diverse groups of HCWs, they need to be tailored to the particular circumstances affecting each group. Previous studies have demonstrated that healthcare worker (HCW) attrition varies across professional and demographic groups[7-9], and is driven by high workload, inadequate pay, burnout, poor work-life balance, alongside workplace discrimination, which disproportionately affects ethnic minority HCWs[3, 9-11].

Another factor affecting the potential effectiveness of retention policies is that attrition is often considered as a single outcome (leaving your job), with limited evidence on the factors that influence distinct attrition outcomes such as: remaining in role but with reduced hours or duties, leaving healthcare entirely, and moving overseas. Reviewing the studies included in a systematic review of HCW attrition, we found that most used a single composite outcome[6], but while different attrition pathways may have similar consequences for the NHS workforce capacity, each is likely to be driven by different personal, occupational, and organisational factors. Without evidence on what drives each pathway separately, retention policies risk being too broad to be effective.

There is evidence suggesting that a growing number of HCWs, particularly doctors and nurses, are moving overseas in search of better remuneration, improved work-life balance, and greater

career opportunities[6, 12]. There's been a noticeable rise in internationally educated nurses leaving the UK, most of these nurses leaving often relocate to countries like Australia, New Zealand, and the US[13]. Existing studies on overseas migration from the NHS however remain limited in scope, largely focused on specific professional groups, based on small samples, and rarely accounting for the ethnic and demographic diversity of the wider NHS workforce[6, 14]. Notably, while the migration of HCWs from lower- and middle-income countries to higher-income countries is well documented, comparatively little is known about the push-pull factors between developed countries [6, 15, 16].

Reduction in clinical duties and working hours differs from overseas migration and leaving healthcare entirely in that HCWs remain in the workforce. In this way, it is both a potential form of attrition and a means of retaining staff. HCWs experiencing high levels of work-related stress and diminished job satisfaction may prefer to work flexibly by reducing clinical duties and working hours as a coping mechanism, seeking to sustain their commitment to the NHS without leaving entirely[17]. The NHS staff survey 2024 shows that staff dissatisfied with flexible working opportunities were more likely to report an intention to leave[18]. Uptake of reduced-hours arrangements is not evenly distributed by gender. Under UK employment law, the right to request flexible working has been progressively extended, most recently to all employees from their first day of employment in 2024[19]. Following the 2014 extension of this right to all employees, women's uptake of flexible working increased over time, alongside reduced psychological distress and improved life satisfaction, with no equivalent change among men[20]. This is consistent with broader evidence that flexible working reduces job stress through improved job satisfaction among highly educated employees[21]. This study focuses specifically on one component of the NHS National Flexible Working People Policy Framework[22]: the reduction of clinical duties and/or working hours.

Theoretically, job embeddedness has emerged as an important framework for understanding both attrition and retention[23]. Importantly, it includes aspects of employees lives at work ("on the job") and outside of work ("off the job"). On-the-job embeddedness encompasses the degree to which employees feel connected to their workplace through their professional relationships (links) and their good job-skills match (fit) and strong occupational commitment (sacrifice). Off the job embeddedness is the degree to which an employee is connected within their family and community. The sum of links, fit and sacrifice are described as a spider's web, in which multiple attachments connect individuals to their work and life contexts[23]. Employees who experience strong links and a good fit with their organisation and profession are more likely to remain committed to their roles and less likely to consider leaving. Job embeddedness buffers the relationship between work-related stressors and attrition, with staff strongly embedded within in their organisation being less likely to leave even under adverse conditions[24].

Job embeddedness theory has seen limited application to migrant and ethnic minority HCWs in the UK context. Off-the-job embeddedness plays a significant role in worker retention, extending beyond organisational and community involvement to capture the broader social and emotional contexts that shape employee's commitment and intention to remain[25]. Among

internationally relocated HCWs, family embeddedness in the host country is positively associated with intention to stay[26]. The different domains of job embeddedness behave differently, and it is better to understand the relationship of each of the domains with attrition pathways separately.

Despite growing evidence on the drivers of NHS workforce attrition as a single concept, the extent to which factors differentially predict distinct exit pathways across a diverse healthcare workforce remains poorly understood. To our knowledge, no previous study has simultaneously examined the predictors of three distinct attrition pathways (1) leave healthcare entirely, (2) reduce clinical duties and/or working hours, and (3) move overseas, despite each carrying different implications for workforce capacity and service delivery, and their drivers being unlikely to be uniform across sociodemographic and occupational groups.

Using data from a large national sample of UK HCWs gathered in 2024/5 as part of the UK-REACH I-CARE survey, we aim to examine different attrition pathways in different professional and demographic groups of HCWs, using job embeddedness as a theoretical framework.

2. Methods

2.1 Data Source

UK-REACH (United Kingdom Research study into Ethnicity And COVID-19 outcomes in Healthcare workers) is a national longitudinal cohort study of UK healthcare workers, since 2020. We invited all current UK-REACH cohort study participants recruited between 2020 and 2021 to take part in the sixth wave survey I-CARE (InCreAsing Retention of healthcare staff from Ethnic minority groups). In addition, we invited a booster sample of staff who joined the healthcare workforce from January 2021 onwards to participate. Data were collected online between November 2024 and April 2025. Eligible participants were aged 16 years or over who were living and working in the United Kingdom and were employed as healthcare workers or ancillary workers in a healthcare setting, or who were registered with the General Medical Council, General Dental Council, General Pharmaceutical Council or the Pharmaceutical Society of Northern Ireland, Health and Care Professions Council, General Optical Council, or the Nursing and Midwifery Council. We included questionnaire respondents who were currently working and who provided information on outcome variables and the predictors.

2.2 Measures

We examined three binary outcome variables, each defined on the basis of self-reported intentions and/or actions: leaving healthcare role entirely, reducing clinical duties and working hours, and moving overseas. Each outcome was coded as 1 (considered or acted upon) and 0 (did not consider or act upon). Respondents could select more than one outcome, so the three pathways are not mutually exclusive.

We selected variables based on established job embeddedness theory [23] and available literature on healthcare worker attrition and were organised into four domains. The sociodemographic characteristics (age, sex, occupation, ethnicity, migration status, and

household arrangement) were included as covariates. The remaining three domains represent our exposures of interest. The occupational and work environment domain, our primary exposures of interest included workplace discrimination, on-the-job embeddedness (links, fit, and sacrifice), trusting one's employer to address their concerns, and job satisfaction. The personal and community domain included off-the-job embeddedness and self-reported financial insecurity. The mental health domain comprised measures of depression and anxiety.

On-the-job embeddedness was assessed across three subscales (links, fit, and sacrifice), each derived from multiple items scored on a Likert scale and transformed into a standardised mean score. The links comprised two items measuring the quality of relationships with coworkers, scored on a 4-point scale[27]. The fit comprised three items measuring perceived compatibility between the respondent's skills and the demands of their job, scored on a 7-point scale[28]. The sacrifice comprised six items measuring the perceived personal and professional costs of leaving the profession, scored on a 7-point scale[29]. Off-the-job embeddedness was computed in the same way, as a single combined standardised mean score from six items scored on a 5-point scale[30]. Example item wording, item counts, and scales are presented in Table 1.

Depression was measured using the PHQ-2 and anxiety using the GAD-2 scale[31]; a combined binary variable was derived, with a score greater than 3 on either scale classified as indicative of clinically relevant symptoms. Job satisfaction, financial insecurity, and organisational trust were each measured using single Likert-scale items. Full detail of variable construction, including item wording and categories, are presented in Table 1.

2.3 Data Analysis

We described participant characteristics separately for each outcome group (Supplementary Table 1), reporting frequencies and percentages for categorical variables and means and standard deviations for continuous variables. We assessed differences between groups using the chi-square test for categorical variables and the Wilcoxon rank-sum test for continuous variables.

We fitted three separate multivariable logistic regression models were fitted, one for each attrition outcome, using a two-step modelling approach. In Model 1, we estimated mutually adjusted associations between all sociodemographic variables and each outcome (Supplementary Table 2). In Model 2, we added, occupational, work environment, personal circumstances, and mental health predictors were added to produce fully adjusted models, with results presented as odds ratios with 95% confidence intervals (Supplementary Table 3). This approach allowed us to examine associations between sociodemographic factors and each outcome, and to assess how these associations changed once occupational and psychosocial predictors were added. We assessed multicollinearity among predictors by fitting an equivalent linear probability model and examining variance inflation factors (Supplementary Table 6), and model fit using the Hosmer-Lemeshow goodness-of-fit test and the area under the receiver operating characteristic curve (AUC) (Supplementary Figure 1-3). Since the three outcomes were not mutually exclusive, we assessed overlap between them by calculating the number of pathways each respondent reported (Supplementary Table 7).

We planned to input missing data (excluding outcome variables) using multiple imputation by chained equations (MICE) as our primary analytical approach, generating 20 imputed datasets under the assumption that data were missing at random and deriving pooled estimates across

imputed datasets using Rubin's rules. To assess the robustness of our findings, we repeated all analyses using complete-case data as a sensitivity analysis (Supplementary Table 4 & 5).

To further explore retention among HCWs, we analysed data from respondents who were not working at the time of survey completion. We described the intentions to return to healthcare among those who reported having taken action to leave healthcare entirely, move overseas or reduce their hours/clinical duties.

We conducted all analyses using Stata version-19.

3. Results

In total, 10,542 respondents participated in the I-CARE survey and 8,496 respondents completed the survey, and we analysed data from 7,773 participants who were currently working and who provided information on outcome variables and the predictors.

The most commonly reported outcome was intending or taking action to reduce clinical duties and/or working hours (57.7%), followed by leaving their healthcare role entirely (41.5%) and moving overseas (31.6%). As these outcomes were not mutually exclusive, 27.6% of respondents reported two attrition pathways simultaneously and 14.6% reported all three (Supplementary Table 6). Missingness on any individual variable was low, 5.2% or less. However, missingness spread across multiple predictors meant that a complete-case sensitivity analysis excluded approximately 13% of eligible observations. We described participant characteristics separately for each outcome group (Supplementary Table 1).

Table 1: Sample Characteristics and Measurement of Study Variables

Characteristics	N=7,773	Number of categories/items
Occupational and work environment		
On-the-job Link	0.8 (0.2)	Using 2-items scored from 1 (Definitely disagree) to 4 (Definitely agree) mean score (standardised) was computed.
Missing	129	Example item: My coworkers are supportive and friendly towards me
On-the-job Fit	0.8 (0.2)	Using 3-items scored from 1 (Strongly disagree) to 7 (Strongly agree) mean score (standardised) was computed.
Missing	8	Example item: The match is very good between the demands of my job and my personal skills
On-the-job Sacrifice	0.6 (0.2)	Using 6-items scored from 1 (Strongly disagree) to 7 (Strongly agree) mean score (standardised) was computed.
Missing	3	Example item: "I have put too much into this profession to consider changing now"
Off-the-job	0.6 (0.2)	Using 6-items scored from 1 (Strongly disagree) to 5 (Strongly agree) mean score (standardised) was computed
Missing	4	Example item: "Leaving the area where I am currently based would mean many personal and/or family sacrifices"
Financial Difficulties	2.8 (1.2)	1-item scored from 1 (Not at all) to 5 (Extremely)
Missing	81	Example item: "How worried are you about your future financial situation?"

Characteristics	N=7,773	Number of categories/items
Occupational and work environment		
Depression & anxiety	0.3 (0.5)	4-items scored from 1 (Not at all) to 4 (nearly every day) was combined to compute the score Example item: “Over the last 2 weeks, how often have you been bothered by Feeling nervous, anxious or on edge?”
Missing	22	
Job satisfaction	4.9 (1.6)	1 item scored from 1 (Extremely dissatisfied) to 7 (Extremely satisfied) Example item: “Taking everything into consideration, how do you feel about your job as a whole?”
Missing	41	
Trust concern	3.5 (1.2)	1 item scored from 1 (Strongly disagree) to 7 (Strongly agree) Example item: “I am confident that my organisation would address my concern.”
Missing	52	
Discrimination		
No	5,413 (69.6)	Binary: 2-categories
Yes	2,360 (30.4)	
Missing	404 (5.20)	
Socio-demographic Characteristics		
Age (Years)		Categorical: 5-categories
17-29	1,888 (24.3)	
30-39	2,197 (28.3)	
40-49	1,507 (19.4)	
50-59	1,396 (18.0)	
60 & above	719 (9.2)	
Missing	66 (0.8)	
Sex		
Male	2,109 (27.1)	Binary: 2-categories
Female	5,633 (72.5)	
Missing	31 (0.4)	
Occupation		
Doctors	1,268 (16.3)	Categorical: 10 healthcare staff categories
Allied Health Professionals	2,356 (30.3)	
Nursing and Midwifery	1,992 (25.6)	
Dental Staff	465 (6.0)	
Ambulance Staff	288 (3.7)	
Clinical Support Staff	134 (1.7)	
Pharmacy	307 (3.9)	
Optical	109 (1.4)	
Wider Healthcare Roles	446 (5.7)	
Other	388 (5.0)	
Missing	20 (0.3)	
UKREACH Cohort		
Old participants	3,312 (42.6)	Binary: 2-categories
New Participants	4,460 (57.4)	
Missing	1 (0.0)	
Migration		
Born in UK	5,067 (65.2)	Categorical: 3-categories
Non-UK not requiring a visa	1,528 (19.7)	
Non-UK requiring a visa	1,159 (14.9)	
Missing	19 (0.2)	
Ethnicity		
White	4,158 (53.5)	Categorical: 5-categories (ONS-ethnicity)
White Others	847 (10.9)	
Asian	1,564 (20.1)	

Characteristics	N=7,773	Number of categories/items
Occupational and work environment		
Black	674 (8.7)	
Mixed	324 (4.2)	
Others	185 (2.4)	
Missing	21 (0.3)	
HH Arrangement		
Single	1,852 (23.8)	Categorical: 3-categories
Married Couples	1,660 (21.4)	
With Children and/or Others	3,974 (51.1)	
Missing	287 (3.7)	

Figure 1: Fully adjusted odds ratios and 95% confidence intervals for predictors of three attrition outcomes

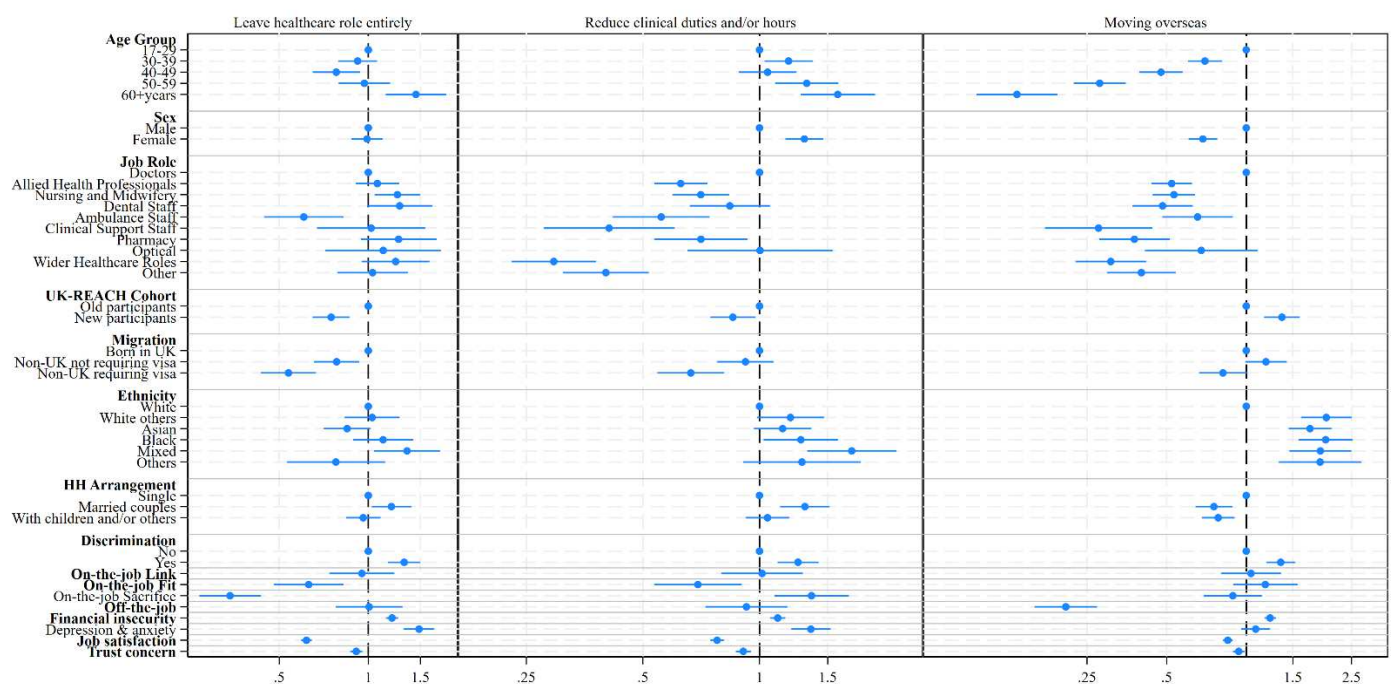


Figure 1 presents the odds ratios from the fully adjusted Model 2 across all three attrition outcomes, each estimated using a separate logistic regression.

Job embeddedness showed striking differential associations across attrition outcomes. Stronger ties to family and local community (off-the-job embeddedness) was strongly associated with lower odds of moving overseas (OR=0.21, 95% CI: 0.16-0.27), representing the largest effect size observed across all predictors and outcomes. Stronger job-skills fit (on-the-job fit) was protective against leaving healthcare entirely and reducing hours/clinical duties. While stronger professional commitment (on-the-job sacrifice) was strongly protective against leaving the role entirely (OR=0.34, 95% CI: 0.27-0.43) it was associated with higher odds of reducing hours/clinical duties (OR=1.36, 95% CI: 1.09-1.70). Whereas on-the-job links showed no significant association with any of the three attrition outcomes.

The three attrition outcomes had different demographic and occupational profiles. Moving overseas was associated with younger age, having started in healthcare since 2021, being of White Other (OR=2.01, 95% CI: 1.61-2.50), Asian (OR=1.74, 95% CI: 1.45-2.10), and Black

(OR=2.0, 95% CI: 1.58-2.52) ethnic background, and having the immigration status of indefinite leave to remain in the UK (OR=1.19, 95% CI: 0.99-1.42), with female sex (OR= 0.69 95% CI: 0.60-0.78), being married (OR=1.31, 95% CI: 1.13-1.52), and living with children or other dependents all associated with lower odds of moving overseas. By contrast, reducing clinical duties/working hours and leaving healthcare entirely were both associated with older age, having started work in healthcare before 2021, and being married. Reducing clinical duties/working hours was additionally associated with female sex (OR=1.31, 95% CI: 1.17-1.46) and Black (OR=1.28, 95% CI: 1.02-1.59) or Mixed ethnic background (OR=1.73, 95% CI: 1.33-2.26). Leaving healthcare entirely was additionally associated with being in a nursing, midwifery (OR=1.25, 95% CI: 1.05-1.50) or dental role (OR=1.28, 95% CI: 0.99-1.64) rather than a medical role.

Across all attrition outcomes, we found that experiencing workplace discrimination and financial insecurity were associated with higher odds of attrition intentions and/or actions, and greater job satisfaction, higher organisational trust and requiring a visa to work in the UK were associated with lower odds. Poorer mental health was associated with reducing clinical duties and/or hours and leaving healthcare entirely, but not with moving overseas.

Among 686 respondents not working at the time of data collection, 302 (44.0%) intended to return to a healthcare role (Table 2). Almost nine in ten (87%) of those had taken action to move overseas intended to return, compared to only one in ten (11%) (27/246) who had taken action to leave healthcare entirely and approximately one third of those who had taken action to reduce their hours (46/131) or clinical duties (47/131).

Table 2: Intention to return to healthcare by attrition outcome among healthcare workers not working at the time of data collection.

Attrition outcome	No intention to return N (%)	Intending to return N (%)
Moving overseas		
No	341 (65.2)	182 (34.8)
Yes, considered	28 (23.0)	94 (77.1)
Yes, acted upon	4 (13.3)	26 (86.7)
Leaving healthcare role entirely		
No	103 (39.9)	155 (60.1)
Yes, considered	49 (29.2)	119 (70.8)
Yes, acted upon	219 (89.0)	27 (11.0)
Reducing working hours		
No	220 (64.7)	120 (35.3)
Yes, considered	64 (32.2)	135 (67.8)
Yes, acted upon	85 (65.0)	46 (35.1)
Reducing clinical duties		
No	211 (60.6)	137 (39.3)
Yes, considered	76 (39.4)	117 (60.6)
Yes, acted upon	84 (64.1)	47 (35.9)

Chi-square tests indicated statistically significant differences across all attrition outcomes (all $p < 0.001$)

4. Discussion

In this large national study of UK HCWs from diverse demographic and occupational groups, we have demonstrated that HCWs' work and home environments, and their demographic and occupational backgrounds, are associated with different attrition pathways, whether reducing their clinical duties and/or hours, moving overseas, or leaving healthcare entirely. Treating attrition as a single construct would have concealed differences with important implications for workforce planning and retention policies.

Several novel findings emerged, each with distinct theoretical and policy implications. Firstly, the strongly protective effect of community and family ties (off-the-job embeddedness) against overseas migration supports a central claim of job embeddedness theory: non-work ties can outweigh workplace factors in retention decisions. The finding is consistent with Feldman et al. (2012), who argued that individuals become embedded in geographic communities when their family's access to valued local resources, including spousal employment, children's schooling, and proximity to extended family, would be threatened by relocation[32]. Our findings suggest that family and community ties represent one of the strongest constraints on international mobility identified. However, analysis of intentions to return to healthcare among non-working HCWs also indicated that overseas migration among this group may be largely temporary, with 87% of those who had acted upon this pathway intending to return to healthcare. This aligns with GMC (2025) survey evidence that a meaningful proportion of doctors who leave the UK later return to practise[12]. Overseas migration may therefore represent a temporary, rather than permanent, workforce loss. This finding extends the framework proposed by Mitchell, by demonstrating that off-the-job embeddedness operates differentially across attrition types, a distinction that would have been undetectable had outcomes been combined into a single composite measure[23]. This suggests that retention policy should not focus solely on preventing departure, but also on reducing barriers to return so that temporary absences do not become permanent losses.

A second important finding was the paradoxical association between professional commitment and attrition. Profession commitment (on-the-job sacrifice) was strongly protective against leaving healthcare entirely, but was also associated with higher odds of reducing clinical duties and hours. This suggests that HCWs with strong professional commitment may reduce their hours as a means of remaining within the job while managing work and personal demands, rather than exiting the workforce entirely[33]. This is consistent with the sacrifice dimension of job embeddedness theory, in which the perceived costs of leaving an embedded network, including social security, retirement benefits, professional identity, and valued collegial relationships, this finding indicates that HCWs who perceive these costs as high may be less likely to leave their healthcare role entirely[23]. Leaving the healthcare role entirely was the most definitive form of workforce exit in this study, with only 11.0% of non-working HCWs who had acted upon this pathway intending to return, in contrast to the majority of those who had moved overseas.

Good job-skills fit was protective against both leaving entirely and reducing clinical duties and hours, reinforcing the importance of perceived role compatibility as a retention mechanism. This finding is most relevant to preventing the most definitive form of workforce exit, with perceived role fit functioning as the retention mechanisms when the risk of leaving the healthcare entirely is of concern. Reducing clinical duties and working hours presented the

most conceptually complex predictor profile, reflecting its ambiguous position at the boundary between workforce loss and adaptive retention. Doctors were more likely to reduce their hours compared with non-clinical and other occupational groups, which may reflect greater clinical workload doctors typically carry[33]. Additionally, older staff, female and married HCWs were more likely to reduce their clinical hours, which may reflect the dual burden of professional and caring responsibilities[7, 20]. Reducing clinical hours may therefore represent such an adaptive response, enabling HCWs with strong professional commitment to sustain their healthcare role under pressure rather than leaving the workforce entirely.

Greater job satisfaction and organisational trust were protective across all three attrition pathways simultaneously, suggesting that improving these factors is likely to reduce workforce attrition in all its forms[21]. Evidence further suggests that attrition is lowest when employees are satisfied, highlighting the importance of fostering a positive satisfaction climate at the organisational level[34]. Consistent with social exchange theory, trust emerges when employees perceive that their organisation fulfils its obligations, creating a sense of reciprocity and commitment that discourages departure even under adverse conditions (Tremblay et al., 2010). HCWs who trusted that their concerns would be heard and acted upon were less likely to report attrition intentions[3] across all pathways, reinforcing the importance of responsive leadership and staff voice mechanisms as retention tools.

In contrast financial insecurity and workplace discrimination were each associated with higher odds of attrition[8, 9] regardless of pathway, indicating that interventions addressing these factors represent workforce-wide retention priorities irrespective of which specific departure pathway is of concern. Two mechanisms may help explain these effects. First, financial concern may compound other push factors through its effects on mental health, with evidence suggesting that increasing financial worry is associated with the development of depressive symptoms among HCWs[3, 35]. Reflecting this link, poorer mental health was itself associated with leaving healthcare entirely and reducing clinical duties and/or hours, but not with overseas migration. Second, workplace discrimination may push ethnic minority staff who experience it toward leaving the healthcare workforce entirely, including overseas, underscoring the importance of addressing workforce race equality as both an equity and a retention imperative.

This study has several notable strengths. The simultaneous examination of three distinct attrition outcomes in a single analytical framework represents a methodological advance over prior single-outcome studies, enabling the identification of differential predictor profiles that would otherwise have been obscured. The large and ethnically diverse sample of 7,773 healthcare workers drawn from a nationally representative cohort provides substantial statistical power and enhances generalisability across occupational and demographic groups. The application of the job embeddedness framework across multiple attrition outcomes is novel within the HCWs context, with limited prior evidence examining these dimensions among HCWs in the UK.

Several limitations should be acknowledged. The cross-sectional design precludes causal inference, and associations should be interpreted as predictors rather than determinants of attrition. All three outcomes capture self-reported intentions and actions, which are conceptually distinct, as not all those reporting intentions will subsequently act upon them, and this conflation introduces outcome misclassification that may differentially affect estimates

across the three models. The three outcomes are also not mutually exclusive, as respondents could report more than one pathway. This overlap reported suggests that estimates for each outcome are not fully independent of one another, and this should be considered when interpreting pathway-specific findings. Response bias cannot be excluded, though the anonymous nature of data collection is likely to have minimised social desirability effects. The inclusion of a booster sample of recent workforce joiners in the sixth wave introduces potential heterogeneity, and attrition estimates may not be directly comparable with prior waves. Multiple imputation by chained equations (MICE) was used as our primary analytical approach with complete-case analysis conducted as a sensitivity analysis, producing broadly consistent findings and mitigating concerns about selection bias. Finally, outcomes reflect intentions and actions over the preceding year and may not capture longer-term workforce trajectories.

5. Conclusion

This study demonstrates that attrition among UK healthcare workers is a multifaceted phenomenon driven by distinct predictor profiles across three outcomes. The three attrition outcomes underscore that uniform retention policies are unlikely to be sufficient across the healthcare workforce. The strong protective effect of off-the-job embeddedness against overseas migration, the largely temporary nature of overseas departure, and the paradoxical role of occupational commitment in driving flexible working rather than permanent exit are findings with direct implications for how NHS retention is conceptualised and addressed. Ethnicity and migration status further differentiated risk: ethnic minority staff were more likely to report overseas migration, while visa-dependent staff were less likely to leave entirely, reduce hours, or migrate overseas, reflecting contractual constraints on mobility rather than successful retention. Tailored interventions addressing workplace discrimination, mental health, financial pressures, and job embeddedness are essential to sustaining a resilient and diverse workforce. Notably, those who had acted upon leaving the healthcare role entirely showed little intention to return, highlighting that early intervention before permanent departure occurs is critical. Failure to act on these evidence-based findings risks further erosion of a workforce already under considerable strain, with significant consequences for patient care and the long-term sustainability of the NHS.

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