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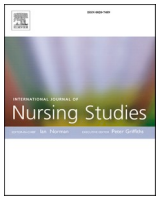

Coming and going: A narrative review exploring the push-pull factors during nurses' careers

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ABSTRACT

Background: Shortages of nurses are one of the biggest challenges healthcare systems face around the world. Given the wide range of contexts and individuals working in nursing, a 'one-size-fits-all' retention strategy is unlikely to be effective. Knowing what matters most to nurses at different career stages would help employers and policy-makers who want to enhance nurse retention to design tailored strategies.

Objective: To review and synthesise findings from recently published literature on the push-pull factors influencing nurses' decisions at the micro level, to enter and stay (or leave) at key career stages (i.e. pre-career, training, early-, mid- and late-career, and return to practice).

Methods: We undertook a set of structured searches of the literature and a narrative synthesis to explore factors that motivate individuals to enter the nursing profession and the push-pull factors influencing nurse retention at different career stages. Electronic databases CINAHL, Medline, Scopus and Embase were searched in December 2022 (and updated in November 2023) for English language publications. Additional health workforce sources, such as King's Fund and Nuffield Trust, were also searched.

Results: 227 articles met the criteria for inclusion in the narrative review. Some push-pull factors were common to nurses across all career stages, including workplace support, flexible schedule patterns, opportunities for career advancement, fair treatment and salaries. In contrast, some challenges and push-pull factors were unique to each career stage. Students experienced difficulty in adjusting and balancing education and life; early-career nurses experienced transition shocks; mid-career nurses were frustrated by the lack of career advancement; late-career nurses desired more recognition; nurses returning to practice were discouraged by their lack of confidence and the cost of return-to-practice courses.

Conclusion: Our findings reinforce the view that factors influencing nurses' choices about whether to enter, continue or leave nursing jobs are multi-factorial and multi-dimensional. Policy and employment practices should be informed by research that has a more nuanced insight into what matters most to whom and at what career stage.

Tweetable abstract: Nuanced insight into motivations is needed to attract and retain a mix of nurse throughout their careers @ZEjebu @julia_philippou @JaneEball.

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What is already known

- There is a vast literature on the push-pull factors associated with nurse retention.
- Less is known about variation by career stage.
- Predictable career pathways clarify opportunities and expectations.

What this paper adds

- In comparison to previous reviews, we provide a broader perspective of nurses' motivations, needs and expectations by career stages.
- Some hurdles faced by nurses tend to persist throughout their careers, whilst other challenges are specific to each career stage.
- This review highlights the need for decision-makers to understand nurses' preferences to design retention strategies tailored to their career stages.

1. Background

England, in common with other countries, faces a significant shortage of registered nurses due to turnover (NMC, 2023a, 2023b). The gap between supply and demand in the National Health Service (NHS) is predicted to widen to 140,000 posts by 2030/31 (Scheffler and Arnold, 2019; Shembavnekar et al., 2022) and further still between 260,000 to 360,000 by 2036/37 without long-term actions and funding (NHS England, 2023). Given the wide range of contexts and diversity of individuals working in nursing, a 'one-size-fits-all' strategy for recruitment and retention is unlikely to be effective in narrowing this gap. Strategies may need to be tailored to nurses' preferences, personal characteristics and career stage, to ensure they meet the wide-ranging needs of different groups.

The broad literature on retention factors among nurses has focused on career stages separately (de Vries et al., 2023; Halter et al., 2017; Sandler, 2018). To our knowledge, there is no review synthesising retention factors among nurses throughout career stages or a single study examining this. Yet, considering factors influencing the decisions to enter and remain in nursing by career stage could help employers and policymakers to differentiate, anticipate and respond to the varying goals and motivations throughout professional lives (Inkson et al., 2007). A visible and predictable career path from 'entry to a course' through to 'retirement' can offer stability, clarify opportunities and expectations, and help plan for the future (Inkson et al., 2007). We further posit that predictable career pathways – as seemingly perceived in medicine (Cowley et al., 2020; Wang et al., 2022) – could contribute to making the profession more attractive to current and prospective nurses.

Therefore, a narrative synthesis of the literature was undertaken, through a set of structured literature searches. We identify, review and synthesise findings from recently published literature on the push-pull factors influencing nurses' decisions to enter and stay (or leave) at key career stages. Specifically, we consider (i) pre-career, (ii) training (student), (iii) early-career (newly graduated), (iv) mid-career (experienced nurses) and (v) late-career stages (experienced nurses nearer retirement). We consider another key characteristic potentially intersecting with career stage: nurses returning to practice following a career break. The narrative review allows the inclusion of a wide range of evidence from different sources and the synthesis of complex and nuanced factors that may influence nurses' decisions. We consider the spectrum of 'career cycle' (Inkson et al., 2007) to provide a nuanced perspective of nurses' needs as they progress and identify the differences and/or similarities that exist between groups throughout their careers.

2. Methods

We undertook six structured literature reviews using CINAHL, Medline, Scopus, AMED and Embase. We searched papers published between 2012 and 2023 to identify studies exploring (i) the motivational factors associated with entry into nursing and (ii) the push-pull factors influencing nurse retention throughout career stages. Health workforce sources, such as King's Fund and Nuffield Trust, were also searched to identify relevant reports.

We applied a wider timeframe (2002–2023) for 'return to practice' given the lack of research on this topic. Searches were conducted in December 2022 and updated in November 2023. The search strategy, key terms and Boolean operators used, are shown in Table 1. We included primary studies and systematic reviews relating to the motivational and push-pull factors of nurses by career stage. There were no geographical limits. During the data extraction, we noted if papers pertained to the UK and NHS, or other countries/health systems. Only publications in English were included. Papers not specific to nursing, news articles and opinions were excluded.

In total, 30,448 records were identified. After excluding papers from screening titles and abstracts, removing duplicates and applying the exclusion criteria, 227 papers were transferred into Endnote® and included in the narrative review (Fig. 1 – Prisma Flow Chart). The papers identified are tabulated in the Supplementary materials/appendix (Table 2).

2.1. Analysis

To organise the literature, papers were classified by career stage and chronologically arranged in Excel®. Key information was extracted, including samples, location and research design. A content analysis method (Mikkonen and Kääriäinen, 2020) was used to extract information about the motivation and retention factors that influence nurses entering, remaining, leaving, or returning to nursing. We used an iterative process to identify recurring themes (motivation and retention factors) for each career stage. Retention factors, in particular, were dichotomised between push (leave) and pull (stay) factors.

For each stage, generic career and lifecycle theories were used as an analytical framework to help discern the similarities and differences in the retention factors across nurses' careers. These theories suggest that career choice is an ongoing process of growth, negotiation and progression ultimately shaping individuals' experiences (Inkson et al., 2007). Hence, they provide an important framework for explaining the development of an individual's career, push-pull factors arising over time, and decisions to enter, remain, leave or return to nursing.

3. Results

Results are presented by career stage. We then consider policy and practice implications to enhance retention. We adopted a micro (rather than a macro) perspective, to examine the factors as they are perceived by individuals, to allow employers to identify potentially modifiable push-pull factors, distinguish turnover factors that may persist throughout nurses' careers, and improve employers' ability to attract and retain nurses.

3.1. What incentivises individuals? Entering the nursing profession

A career choice is not a single, one-off decision. Individuals make career choices by trying to evaluate themselves in the working environment (Inkson et al., 2007). They seek to identify the best possible match between their self-concept and perceptions of professions, taking into account their abilities and the available opportunities (Williams et al., 2019). In this process of circumscription, 'finding a fit' and compromise, career choices are narrowed down from the options society offers to a smaller range of preferred occupations. This process starts in childhood, hence certain options may be excluded before a person has sufficient experience to make informed choices (Jung, 2020). Choosing nursing as a profession is thus a complex process, where individuals are influenced by a range of demographic and socio-economic factors, including family, social connections, gender roles, personal interests

Table 1
Search strategies to extract papers exploring the motivational and push-pull factors to enter and stay in (or leave) the nursing profession by career stages.

Career stages	Search strategies
Interest in nursing	**Medline and EMBASE** 1. nursing careers.mp. 2. career motivation.mp. 3. career aspiration.mp. 4. career selection.mp. 5. career choice/ 6. career interest.mp. 7. 2 or 3 or 4 or 5 or 6 8. 1 and 7 **CINAHL and AMED** S1 nursing careers [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S2 career motivation OR career aspiration OR career selection OR career choice OR career interest [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S3 S1 AND S2 [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S4 S1 AND S2 [Limiters - Publication Date: 20120101–20231231] [Expanders - Apply equivalent subjects] [Narrow by Language: - english] [Search modes - Find all my search terms] **Scopus** (TITLE-ABS-KEY (career AND motivation) OR TITLE-ABS-KEY (career AND aspiration) OR TITLE-ABS-KEY (career AND selection) OR TITLE-ABS-KEY (career AND choice) OR TITLE-ABS-KEY (career AND interest))) AND (TITLE-ABS-KEY (nursing AND career)) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "english"))
Student	**Medline and EMBASE** 1. undergraduate nursing student.mp. 2. pre-registration nurse.mp. 3. pre-registration nursing student.mp. 4. student nurse.mp. 5. nursing student.mp 6. nurse degree.mp. 7. nurse apprentice.mp. 8. nurse degree apprenticeship.mp. 9. retention.mp. 10. intent to stay.mp. 11. intention to leave.mp. 12. attrition rates.mp. 13. dropouts.mp. 14. leaving nursing.mp. 15. non-completion.mp. 16. degree transition.mp. 17. transition to practice.mp. 18. 1 or 2 or 3 or 4 or 5 19. 6 or 7 or 8 20. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 21. 18 and 19 and 20 **CINAHL and AMED** S1 undergraduate nursing student OR pre-registration nurse OR pre-registration nursing student OR student nurse OR nursing student [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S2 nurse degree OR nurse apprentice OR nurse degree apprenticeship [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S3 retention OR intent to stay OR intention to leave OR attrition rates OR dropouts OR leaving nursing OR non-completion OR degree transition OR transition to practice [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S3 S1 AND S2 AND S3 [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S4 S1 AND S2 AND S3 [Limiters - Publication Date: 20120101–20231231 [Expanders - Apply equivalent subjects] [Narrow by Language: - english] [Search modes - Find all my search terms] **Scopus** ((TITLE-ABS-KEY(undergraduate AND nursing AND student) OR TITLE-ABS-KEY(pre-registration AND nurse) OR TITLE-ABS-KEY (pre-registration AND nursing AND student) OR TITLE-ABS-KEY (student AND nurse) OR TITLE-ABS-KEY(nursing AND student))) AND ((TITLE-ABS-KEY(nurse AND degree) OR TITLE-ABS-KEY(nurse AND apprentice) OR TITLE-ABS-KEY(nurse AND degree AND apprenticeship))) AND ((TITLE-ABS-KEY(retention) OR TITLE-ABS-KEY(intent AND to AND stay) OR TITLE-ABS-KEY(intention AND to AND leave) OR TITLE-ABS-KEY(attrition AND rates) OR TITLE-ABS-KEY (dropouts) OR TITLE-ABS-KEY(leaving AND nursing) OR TITLE-ABS-KEY(non-completion) OR TITLE-ABS-KEY(degree AND transition) OR TITLE-ABS-KEY(transition AND to AND practice))) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (LANGUAGE,"English"))
Early-career	**Medline and EMBASE** 1. early career nurse.mp. 2. early career registered nurse.mp. 3. graduate nurse.mp. 4. new nurse.mp. 5. newly hired nurse.mp. 6. newly graduated nurse.mp. 7. newly registered nurse.mp. 8. newly licensed registered nurse.mp. 9. newly employed nurse.mp. 10. entry-level nurse.mp. 11. retention.mp. 12. intent to stay.mp. 13. intention to leave.mp. 14. recruitment.mp. 15. (push and pull factors).mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word] 16. turnover.mp. 17. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 18. 11 or 12 or 13 or 14 or 15 or 16 19. 17 and 18 **CINAHL and AMED**

(*continued on next page*)

Table 1 (*continued*)

Career stages	Search strategies
	S1 early career nurse OR early career registered nurse OR graduate nurse OR new nurse OR newly hired nurses OR newly graduated nurse OR newly registered nurse OR newly licensed nurses OR newly licensed registered nurse OR newly employed nurses OR entry-level nurse [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S2 retention OR intention to stay OR intention to leave OR recruitment OR (push and pull factors) OR turnover [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S3 S1 AND S2 [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S4 S1 AND S2 [Limiters - Publication Date: 20120101–20231231] [Expanders - Apply equivalent subjects] [Narrow by Language: - english] [Search modes - Find all my search terms] **Scopus** ((TITLE-ABS-KEY (retention) OR TITLE-ABS-KEY (intent AND to AND stay) OR TITLE-ABS-KEY (intention AND to AND leave) OR TITLE-ABS-KEY (recruitment) OR TITLE-ABS-KEY (push AND pull AND factors) OR TITLE-ABS-KEY (turnover))) AND ((TITLE-ABS-KEY (early AND career AND nurse) OR TITLE-ABS-KEY (early AND career AND registered AND nurse) OR TITLE-ABS-KEY (graduate AND nurse) OR TITLE-ABS-KEY (new AND nurse) OR TITLE-ABS-KEY (newly AND hired AND nurse) OR TITLE-ABS-KEY (newly AND graduated AND nurse) OR TITLE-ABS-KEY (newly AND registered AND nurse) OR TITLE-ABS-KEY (newly AND licensed AND registered AND nurse) OR TITLE-ABS-KEY (newly AND employed AND nurse) OR TITLE-ABS-KEY (entry-level AND nurse))) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (LANGUAGE,"English"))
Mid-career	**Medline and EMBASE** 1. nurses/ 2. mid-career nurse.mp. 3. experienced nurse.mp. 4. retention.mp. 5. intent to stay.mp. 6. intention to leave.mp. 7. recruitment.mp. 8. (push and pull factors).mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word] 9. attrition.mp. 10. turnover.mp. 11. 1 or 2 or 3 12. 4 or 5 or 6 or 7 or 8 or 9 or 10 13. 11 and 12 **CINAHL and AMED** S1 "nurse" [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S2 "experienced nurse" [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]

Table 1 (*continued*)

Career stages	Search strategies
	S3 "mid-career" nurse [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S4 retention OR intent to stay OR intention to leave OR recruitment OR (push and pull factors) OR turnover OR recruitment [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S5 S1 OR S2 OR S3 [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S6 S4 AND S5 [Limiters - Publication Date: 20120101–20231231] [Expanders - Apply equivalent subjects] [Narrow by Language: - english] [Search modes - Find all my search terms] **Scopus** ((TITLE-ABS-KEY (retention) OR TITLE-ABS-KEY (intent AND to AND stay) OR TITLE-ABS-KEY (intention AND to AND leave) OR TITLE-ABS-KEY (recruitment) OR TITLE-ABS-KEY (push AND pull AND factors) OR TITLE-ABS-KEY (turnover))) AND ((TITLE-ABS-KEY (nurse) OR TITLE-ABS-KEY (experienced AND nurse) OR TITLE-ABS-KEY (mid AND career AND nurse)) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (LANGUAGE,"English"))
Late-career	**Medline and EMBASE** 1. older nurse.mp. 2. end of career nurse.mp. 3. late career nurse.mp. 4. early retirement.mp. 5. recruitment.mp. 6. retention.mp. 7. intent to stay.mp. 8. intention to leave.mp. 9. (push and pull factors).mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word] 10. attrition.mp. 11. turnover.mp. 12. 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 13. 1 or 2 or 3 14. 12 and 13 **CINAHL and AMED** S1 older nurse [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S2 end of career nurse [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S3 late career nurse [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S4 early retirement [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms] S5 intention to leave

(*continued on next page*)

Table 1 (*continued*)

Career stages	Search strategies
	[Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S6 push and pull factors [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S7 intention to leave [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S8 turnover [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S9 intent to stay [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S10 recruitment [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S11 retention [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S12 S1 OR S2 OR S3 [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S13 S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S14 S12 AND S13 [Limiters - Publication Date: 20120101–20231231] [Expanders - Apply equivalent subjects] [Narrow by Language: - english] [Search modes - Find all my search terms]
	Scopus ((TITLE-ABS-KEY (retention) OR TITLE-ABS-KEY (intent AND to AND stay) OR TITLE-ABS-KEY (intention AND to AND leave) OR TITLE-ABS-KEY (recruitment) OR TITLE-ABS-KEY (push AND pull AND factors) OR TITLE-ABS-KEY (turnover) OR TITLE-ABS-KEY (early AND retirement))) AND ((TITLE-ABS-KEY (older AND nurse) OR TITLE-ABS-KEY (end AND of AND career AND nurse) OR TITLE-ABS-KEY (late AND career AND nurse)) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (LANGUAGE,"English"))
Return to practice	**Medline and EMBASE** 1. return to practice.mp. 2. return to nursing.mp. 3. 1 or 2 4. 3 and "Journal Article".sa_pubt.
	CINAHL and AMED S1 "return to practice" OR "return to nursing" [Expanders - Apply equivalent subjects] [Search modes - Find all my search terms]
	S2 "return to practice" OR "return to nursing" [Limiters - Publication Date: 20020101-20231231] [Expanders - Apply equivalent subjects] [Narrow by Language: - english] [Search modes - Find all my search terms]
	Scopus ((TITLE-ABS-KEY (return AND to AND practice) OR TITLE-ABS-KEY (return AND to AND nursing)) AND PUBYEAR > 2002 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (LANGUAGE,"English"))

(Alboliteeh et al., 2022; Hickey et al., 2012; Jirwe and Rudman, 2012; Marznaki et al., 2021; McKenna and Brooks, 2018; Poreddi et al., 2012; Wu et al., 2018) and, in some instances, institutional prestige (Haron et al., 2014). Education interventions may also increase the awareness of nursing and the opportunity to pursue a nursing career. However, results cannot be generalised since the majority of these interventions have been targeted at minority ethnic or disadvantaged populations (Williams, 2018).

There are both intrinsic and extrinsic rewards associated with choosing nursing (Başkale and Serçekuş, 2015). Intrinsic factors include having a personal interest in healthcare, a desire to help others and making a difference in patients' lives (Avraham et al., 2023; Price, 2013; Williams and Dickstein-Fischer, 2019). In contrast, extrinsic factors, such as the public's perceptions of nursing as a 'low-paying/status' job, significantly hinder individuals from choosing nursing (Wu et al., 2015). One study of students from under-represented groups revealed that they often report a sense of vocation that is strong enough to prevail over gender considerations and occupational prestige (Williams et al., 2019). Additionally, among student nurses (Liaw et al., 2017; Zampieron et al., 2012), men and Black, Asian and minority ethnic populations often have nurse family members or have had personal work or healthcare experiences (Yi and Keogh, 2016). Such experiences provide a better understanding of the profession (Hickey et al., 2013) and access to accurate information rather than relying on wider social perceptions (Dante et al., 2013; Tawash and Cowman, 2018) or media stereotypes (Williams et al., 2019).

Nursing has also been viewed as a vocation chosen by women due to family influence or limited career opportunities (Heyes, 2005). This image of nursing as a caring role that is 'best suited to women' and low occupational status (Clow et al., 2015) persists, as evidenced by research exploring the motivations of individuals entering the profession (Ferri et al., 2016; Glerean et al., 2017; Palazzo and Erickson, 2022; Penprase et al., 2013). Gender stereotypes in education and occupation choices (Montayre et al., 2022; Weaver et al., 2014) and biases faced by prospective (male) candidates (Twidwell et al., 2022) may partly explain why nursing is a female-dominated career (Ball et al., 2022; Pressley and Garside, 2023). Gottfredson's theory posits that only individuals with a particularly strong interest accept the challenge of non-traditional career pathways (Gottfredson, 2002). Specifically, the factors deterring men from nursing are likely to differ from those that deter women from male-dominated occupations (Gottfredson, 2002).

The public's perception of nursing may have implications for both recruitment and retention (Linden et al., 2022; Maymoun and Sohail, 2020; Öncü et al., 2022; Ten Hoeve et al., 2016). Nursing has typically been seen as a virtuous caregiving profession for females (Price et al., 2013), often neglecting the broader knowledge, skills and expertise required (Gordon and Nelson, 2012), the more advanced and diverse nursing roles and opportunities in current healthcare environments (Alexander and Diefenbeck, 2020; Price, 2013; Yilmaz et al., 2016).

Promoting nurses, nursing and their impact on healthcare could be a useful strategy to enhance how it is perceived, for example, making it more attractive for under-represented groups, such as young people (Gómez and Brostoff, 2018; Goodman and Landgren, 2021; Norris et al.,

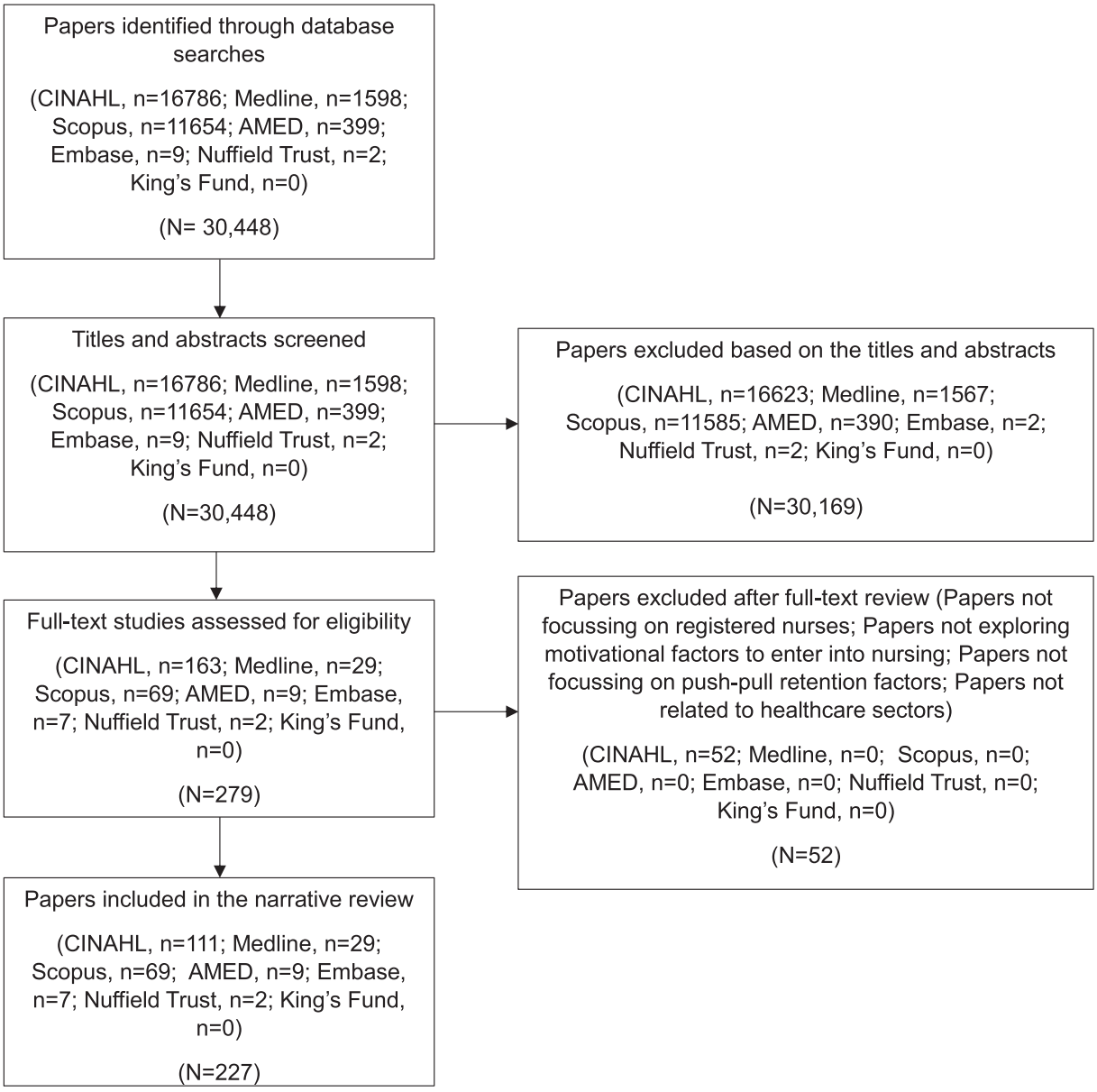

Fig. 1. Prisma flow chart detailing the steps to find articles exploring the motivational and push-pull factors to enter and stay in (or leave) the nursing profession by career stages.

2016) and men (Todd and Ackerman-Barger, 2019; Zamanzadeh et al., 2013). For instance, in 2022, 'We are the NHS' campaign highlighted the range of nursing roles and their pivotal part in patients' recovery. The campaign – which followed a period of unprecedented demand for healthcare attributed to COVID-19 – may have further contributed to enhancing public perceptions of nursing as a vocational profession. However, it may have failed to highlight the high levels of knowledge, expertise and responsibilities required, and the complexity of decision-making in patient care. Notwithstanding, efforts to challenge outdated perceptions of nursing (Devereux, 2023) may be undermined by the harsh reality of the profession, including relatively lower salaries (in contrast to other professions), understaffing, high levels of burnout and workload (Dyrbye et al., 2020), which have been amplified by recent trade union disputes and negative media discourses.

3.2. *Reducing student attrition is key – navigating training and education*

Motivating individuals to choose nursing is a first step in an individual's career. When a nursing programme is chosen by students as their first choice, they are more likely to complete their studies (Salamonson et al., 2014). Students are also attracted by the vocational (HEE, 2015) and caring aspects of the profession, the income stability and security nursing offers (ten Hoeve et al., 2017). However, motivation alone is not sufficient. Education and training that adequately equip students and foster educational environments that increase study completion are key to transition into a nursing role.

Rates of attrition (i.e. individuals not completing their course in the expected timeframe) can reach levels that exacerbate labour shortages in global healthcare systems. The absence of publicly available data on attrition from nursing courses and institutions makes it difficult to evaluate where attrition is most pronounced. For example, estimates in England ranged between 13 % (Palmer et al., 2023) and 24 % (Buchan et al., 2020a, 2020b) during 2018–2020 depending on the sources and definitions utilised. This shortcoming persists despite having been highlighted on numerous occasions (House of Commons Health Committee, 2018). There are no comparable data on attrition from other

healthcare courses. However, in England, attrition among medical and physiotherapy students is approximately 5 %, and 17 % in radiotherapy (Palmer et al., 2023).

Attrition factors are well-documented in the international literature (Collard et al., 2020; Everett, 2022; Liu et al., 2023). Nursing students navigate many hurdles to achieve their degrees. They struggle to adjust to higher education institutions, particularly if located in a new city or country, with reports of feeling isolated and sometimes unable to complete their studies (Kox et al., 2022; Lokmic-Tomkins et al., 2022). Evidence from the UK suggests that whilst locally-recruited students are more likely to complete their studies (Wray et al., 2017, 2012), attrition rates vary by entry route, with 'access to nursing' having the highest attrition rate in comparison to other non-traditional routes (Brimble, 2015). Other studies reveal that attrition rates among international students are lower compared to local students (Tranter et al., 2018; Zheng et al., 2014).

Nursing students may experience financial challenges to fund their studies, hindering them from completing their degrees (Gavine et al., 2020; Liu et al., 2023; Roos et al., 2016). Whilst financial challenges are likely to be faced by students across university programmes, nursing students face specific additional pressures. For example, they are required to undertake clinical placements, which increase social isolation and limit their ability to engage with wider university life (Mills et al., 2020). Failure is also attributed to weak integration in unfamiliar environments (e.g. clinical settings) (Sweetman et al., 2022). Further pressure includes teaching and clinical hours compressed into short periods, and placements early in the programme requiring considerable organisational capabilities and logistics that other students – such as medics – do not experience.

Like many students, nursing students also compete with circumstances beyond their control, including bereavement or illness. In addition, the academic-life balance of mature students may be adversely affected by employment responsibilities (Priode et al., 2020), inflexible schedules (Garside et al., 2021), limited childcare arrangements (Lokmic-Tomkins et al., 2022) or family responsibility (Everett, 2022). Thus, nursing students juggle multiple competing demands, combined with demanding educational programmes (Haririan et al., 2022).

Another common attrition factor is the mismatch between expectations of nursing studies prior to starting and the reality. Some students find academic level and/or clinical practice more demanding than they expected (Soerensen et al., 2023), contributing to a sense of inadequacy and ultimately departure (Canzan et al., 2022). Additionally, underrepresented students face challenges as a result of conscious or unconscious bias related to their ethnicity, gender or personal circumstances. For instance, minority ethnic students reported feeling undervalued, isolated from their peers and subject to racial discrimination (Matthews et al., 2022). Male students were subjected to stereotypes from their peers (Gavine et al., 2020) and bias from certain institutions (Kiekkas et al., 2016). Pregnant students (Lokmic-Tomkins et al., 2022) reported not being adequately supported in certain instances. During COVID-19, students also reported higher intention to leave (Haririan et al., 2022), feeling anxious, overwhelmed, and expressed concerns related to the difficulty in handling academic workload (Fitzgerald and Konrad, 2021).

In England, attrition factors were thoroughly explored by the RePAIR (Reducing Pre-registration Attrition and Improving Retention) project and echoed the aforementioned findings (HEE, 2015). In response, some universities adopted specific measures to support students and reduce attrition. Mentoring programmes are frequently implemented (Rodgers et al., 2013; Williamson et al., 2013) to help students navigate academic life (Matthews et al., 2022; Mitchell et al., 2021). Students are typically supportive of these approaches and affirm that mentoring and university support are key determinants in completing their studies (Bumby, 2020; Hayes Lane et al., 2022). However, the implementation of mentoring programmes is not without its challenges, especially during clinical placements. Mentors may be reluctant to engage with students or are simply overwhelmed by their workload (Jönsson et al., 2021). In such circumstances, leaders or ward managers play an important role in ensuring the implementation of mentoring programmes (Jönsson et al., 2021). The quality of clinical placements and the provision of positive work environments (Liu et al., 2019) are seen as key to creating conducive learning environments and consolidating integration (Crombie et al., 2013; Kim et al., 2021; Owens et al., 2021; Rodriguez-Garcia et al., 2020). In contrast, negative placements could cause students to discontinue their courses (Bakker et al., 2019; NMC, 2023a, 2023b). Identifying 'at-risk' students and offering tailored support (Kukkonen et al., 2016), effective teaching and learning methods, academic support and stress reduction interventions (Bakker et al., 2020; Donnell et al., 2018; Knight et al., 2012; Smith-Wacholz et al., 2019) are also strategies adopted to enhance students' experience and reduce attrition.

Nursing students often adopt coping mechanisms to overcome certain barriers (Bauer and Kiger, 2017). This includes working with peers (McKendry et al., 2014; Nikolaidou et al., 2019), learning to balance academic, placement and life demands (Mills et al., 2020), seeking support (Glew et al., 2019) and building resilience (Jean-Baptiste, 2019). Vocation (Brown et al., 2021), family, social and institutional support also play an important part in helping students navigate through a complex academic journey (Boath et al., 2016; Zambas et al., 2020).

Whilst initiatives to support the retention of student nurses are perceived as beneficial, they are rarely evaluated (Rodgers et al., 2013). Robust evaluations are needed to assess their effectiveness. A further challenge is the lack of robust data on attrition rates (Buchan et al., 2020a, 2020b) and the absence of a standardised definition to measure its extent.

3.3. *Supporting new starters – early career*

Recruitment, entry and socialisation are important cycles in the early career stages as they influence how individuals engage or disengage with the work environment (Wanous et al., 1992). Entry into a new work environment can be daunting and constitute a major shock (Wanous et al., 1992). At the start of their careers, nurses need to adapt to new systems, values and norms typically maintained by formal rules and informal systems (e.g. organisational culture). Supporting the adjustment process to these new circumstances is critical to retention (Failla et al., 2021; Fallatah et al., 2017), as retention factors may in some instances vary at different transition periods (Yu and Kang, 2016).

Socialisation enables new starters to not only acquire proficiency in their job, but also build relationships and learn the practices, goals, behaviours, power structure and norms of that environment (Chao et al., 1994; Martin, 1992). Expectations developed during a nursing programme may markedly differ from the reality of the first job in clinical settings, resulting in a 'reality (or transition) shock' (Duchscher, 2012; Kramer, 1975). Transition shocks – seemingly well researched in the nursing profession in comparison to other fields – increase the difficulty of professionally adapting (Ulupinar and Aydogan, 2021) and the likelihood of leaving (Cao et al., 2021; Chachula et al., 2015). Low salary (Lee, 2019), occupational stress (Zhang et al., 2017), burnout (Kim and Yang, 2023; Rudman et al., 2014), job dissatisfaction (Park et al., 2022; Unruh et al., 2016), bullying (Favaro et al., 2021), equipment issues (Wu et al., 2012) and workload (Kim and Kim, 2021) are also associated with intention to leave. Notably, intention to leave is a strong predictor of leaving the profession (Chang and Cho, 2023; Lee and De Gagne, 2022). In the face of such adversity, self-coping mechanisms (Douglas et al., 2020) and resilience (Cao et al., 2021; Mills et al., 2017) are important retention factors.

Preceptorship (HEE, 2015; Hu et al., 2015; Van Patten and Bartone, 2019), mentoring (Gularte-Rinaldo et al., 2022; Johnston et al., 2020; Jones, 2017; Schroyer et al., 2020; Van Camp and Chappy, 2017; Zhang et al., 2019) (or residency programs more specific to the USA (Trepanier et al., 2012, Vázquez-Calatayud and Eseverri-Azcoiti, 2023)), tailored

interventions to reduce transition shocks from student to nurse status (Cao et al., 2021; Kram and Wilson, 2016; Read and Laschinger, 2017; Wolford et al., 2019) and/or to alleviate stress (Edwards et al., 2015) or burnout (Brook et al., 2021) are positively associated with the retention of early-career nurses. They are more satisfied when participating in such interventions in comparison to their counterparts (Unruh and Zhang, 2014). Structured support following qualification is also valued, especially where there is a perceived high-quality preceptorship and/or a strong mentor-and-mentee relationship (Bontrager, 2016; Whitehead et al., 2013). These relationships are likely to be enhanced if preceptors and/or mentors are supported by training (Park et al., 2022). Early-career nurses may be inclined to seek workplaces where such programmes are provided, reflecting their commitment to nursing (Tarhan et al., 2022; Yu and Lee, 2018) and desire for career advancement (Mills et al., 2016; Yarbrough et al., 2017). This, in turn, may strengthen their confidence, reduce their feelings of inadequacy (Sandler, 2018) and enhance retention. Policymakers and providers recognise the importance of supporting early-career nurses as evidenced by the implementation of a 'National Preceptorship Framework for Nursing' (NHS England, 2022). Preceptorship and mentorship programmes take many forms and standardising how they are reported and their outcomes would be beneficial (Brook et al., 2019). Nevertheless, some key steps include consistent and tailored allocation of preceptors and mentors (Laschinger, 2012). Upon completion, evaluations should be conducted for revision and enhancement (Friday et al., 2015). Robust and longitudinal data would also be beneficial to explore trends and potential causality between retention, preceptorship and/or mentoring programmes.

Job satisfaction (Brewer et al., 2015) and interventions to improve satisfaction with the work environment are valued (Doiron and Yoo, 2017) and associated with the retention of early-career nurses (Blegen et al., 2017). These include improving staffing levels (Heidari et al., 2017; Kenny et al., 2016; Steele-Moses, 2018), reducing job stress (An et al., 2022; Yu and Lee, 2018) or reinforcing the cohesion with the (medical) staff (Bae, 2023; Tarhan et al., 2022). Cohesive and supportive teams work more effectively to deliver patient care, which in turn may positively benefit staff morale (Andrews et al., 2023; Joseph et al., 2022; Rose et al., 2023). In contrast, lack of leadership (Jiang et al., 2023; Lavoie-Tremblay et al., 2016) and team support (e.g. discourteousness and/or abuse) (D'Ambra and Andrews, 2014) can weaken the confidence and aspiration of early-career nurses and increase their risk of departure (Camveren et al., 2020; Cho et al., 2012; Flinkman and Salanterä, 2015; Lee et al., 2012). Some steps help create cohesive environments. Empowering early-carer nurses in decision-making about patient care (Dwyer et al., 2019; Favaro et al., 2021) positively influences retention because nurses are motivated and feel valued. Career advancement (Rockers et al., 2013) and variety in job tasks (Kovner et al., 2016) are also valued (Doiron et al., 2014) and positively associated with retention (Kaldal et al., 2023; Wilkinson and Hayward, 2017; Yarbrough et al., 2017) as nurses enhance their skills (Tomietto et al., 2015) and continue to deliver safe care (Aparício and Nicholson, 2020; Folden et al., 2023). Employees are also more likely to be productive and motivated to stay when they are overtly rewarded (Africa and Trepanier, 2021; Mulkey and Casey, 2023).

Retention (and the factors that may improve it) at the start of nursing careers appear to vary between men and women. For instance, men are more likely than women to report an intention to leave (Chang and Cho, 2023; Park et al., 2022). It is unclear why this is; whether it is a continuation of the differing career motives and expectations of men and women (reflecting societal values and status), or if it relates to the stigma surrounding men working as nurses. Understanding such stigma may help to eradicate it and enhance the retention of men, thereby increasing workforce diversity. Such interventions are likely to be implemented if leaders adopt a style that will 'make' rather than 'break' their teams. Indeed, authentic leadership is perceived as key to enabling positive change and increasing retention (Steele-Moses, 2018).

Finally, we may ponder if all attrition is undesirable. At any career stage, failure to leave and subsequent frustration may result in 'dysfunctional retention' (Schiemann, 2009). Voluntary departure should not be hampered. Retaining nurses who would wish to leave if they could (i.e. reluctant stayers) may be detrimental to the organisation as they may be less motivated, productive and able to deliver quality healthcare. Some degree of movement and workforce change is thus not only inevitable, but potentially necessary and desirable to bring new talents, different perspectives and remove negative influences.

3.4. *Valuing experienced nurses – mid-career*

By mid-career, nurses encounter changes resulting from a career revaluation and transition (Levinson et al., 1978). The theory of adult development and 'seasons of life' points to the complex interactions between contextual, work, individual, social and family relationships that can induce dramatic career changes (Inkson, 2007; Levinson et al., 1978). Employers may be unable to directly affect these interactions. However, they can enhance the work environment by adopting tailored strategies (Szeremeta and Shamash, 2016) to make the profession more attractive for current and prospective nurses. In contrast, interventions developed only from a management perspective, for example, workforce analysis of potential and actual leavers (Drennan et al., 2016), may ignore important nurses' perspectives and preferences that can be used to prevent their departure.

Unlike some extrinsic factors, such as COVID-19 (Jarden et al., 2023) and (dissatisfaction with) salaries (Engström et al., 2022; Halcomb and Bird, 2020), many retention factors are within employers' reach. Nurses in mid-career are more likely to leave due to burnout (Aiken et al., 2023; Heinen et al., 2013; Van Der Heijden et al., 2019), understaffing and lack of resources (Chan et al., 2013; Sasso et al., 2019), job stress (Fasbender et al., 2019), workload (Van der Heijden et al., 2018) or working long shifts (Dall'Ora et al., 2015). The lack of career advancement (Kerzman et al., 2020; Leone et al., 2015) or recognition (Jarden et al., 2023), unsupportive managers (Senek et al., 2023; Valizadeh et al., 2018) and work–family conflicts (Robson and Robson, 2015; Shacklock and Brunetto, 2012) also increase intention to leave. Career behaviours can, in certain instances, depend on personal characteristics. For example, mid-career men are more likely than women to leave nursing (Kelly et al., 2022).

In contrast, mid-career nurses are more inclined to stay in workplaces with strong colleague support and cohesion levels (Al Yahyaei et al., 2022). Nurses value supportive (Ngabonzima et al., 2020; Robson and Robson, 2016), accessible leadership (Noguchi-Watanabe et al., 2020) and managers overtly valuing them (Cowden and Cummings, 2012) and enabling them to work with autonomy (Marufu et al., 2021). Managers play a key role in facilitating an organisational culture free from abuse and moral distress to prevent turnover (Cowden and Cummings, 2012). Nurses also need adequate staffing levels and physical resources enabling the delivery of care to their aspired standards (Carter and Tourangeau, 2012). Understaffing leads to an adverse cycle: low staff adversely impact morale and workload, nurses leave as a result, further exacerbating the morale and workload of the remaining staff (Morgan, 2022; Waitzman, 2022). Nurses who stay despite adverse working conditions may be attracted by income stability (Karlsson et al., 2019; Tourangeau et al., 2017). However, economic studies suggest that nurses have a low wage/salary elasticity of labour supply (Andreassen et al., 2017; Eberth et al., 2016). In the UK, the recent industrial actions of nurses that centred on salary suggest it plays a more important role at the macro level than the one described by the literature.

Nurses are more likely to stay when employers implement tailored retention interventions (Fisher et al., 2022; Sayli et al., 2022), give them a greater voice in decision-making at both organisational and clinical levels (Forde-Johnston and Stoermer, 2022; Robinson et al., 2022) and where staff engagement (Carter and Tourangeau, 2012) or commitment levels are high (Al Yahyaei et al., 2022). Nurses consider that their work,

including schedule flexibility, should not be detrimental to their work-life balance (Carter and Tourangeau, 2012; Tourangeau et al., 2017). Career advancement is also a contributing retention factor. Tailored and continuous professional development (CPD) is positively associated with retention, as nurses are better equipped for promotion (Dowers, 2021; Whiting et al., 2020). For instance, nurses in managerial positions (Kerzman et al., 2020) are more inclined to stay because their roles challenge them (Karlsson et al., 2019). In contrast, individuals encountering career plateaus could cycle back into earlier career stages, including career exploration (Inkson, 2007). Career plateaus can cause considerable dissatisfaction and ineffectiveness among employees. This is especially true for ambitious people who find plateauing humiliating and frustrating, particularly if they have career expectations unmet by their organisations (Inkson, 2007).

Despite the vast evidence on retention, nurse turnover rates remain stubbornly high globally. Strategies targeting flexible working, high-quality leadership, CPD, pay parity and family-friendly policies have been suggested and implemented to reduce turnover (Williamson et al., 2022). However, assessments of their potential effectiveness are lacking. In addition, it should not be assumed that 'staying' nurses are satisfied at work. As an example, nurses in England exhibit high levels of burnout – indicative of a fatigued and overwhelmed workforce (Dall'Ora et al., 2023). Reluctant stayers may be among mid-career nurses, although there is no current empirical evidence to substantiate this claim.

3.5. Retaining knowledge in the nursing workforce – late-career

Extending the working lives of late-career nurses may enable health services, such as the NHS, to retain valuable skills and experience. In the late-career or 'maintenance phase', individuals are concerned with holding their position steady, maintaining performance, conserving what has been accomplished and remaining interested (Super, 1992). With recent demographic trends of Western societies becoming older and increased life expectancy, considerable attention is given to extending nurses' working lives through different interventions, including part-time work opportunities, role adjustments, health and financial support (Gloster et al., 2018; Marvell and Cox, 2017).

Retaining late-career nurses demands that managers know about their retirement motivations, preferences and requirements. Late-career nurses desire to work after retirement for vocational and patient care reasons (Li et al., 2020; Uthamanuthaman et al., 2016; Voit and Carson, 2014). However, certain late-career nurses highlight the lack of information regarding 'retire and return' in their workplace (Cleaver et al., 2022). This may prevent them from engaging in discussions with their employers. Other barriers may stem from the perceptions of organisations towards late-career nurses and vice-versa (Voit and Carson, 2012). Late-career nurses are more likely to leave when they feel unsupported, undervalued and unrecognised (Kaewpan and Peltzer, 2019; Markowski et al., 2020; Warburton et al., 2014). They may also face stereotypes that jeopardise their careers, for example, being perceived to be less able and productive, more prone to absenteeism and more resistant to change than their younger counterparts (Li et al., 2020). However, studies suggest that these stereotypes are misleading, with evidence indicating that older workers are often as (or slightly) more productive than younger workers, have lower absenteeism, are more positive and confident to change due to considerable experience and expertise (Viviani et al., 2021). Poor working conditions (e.g. understaffing, lack of task variation) (Bratt and Gautun, 2018) and perceived low organisational justice (e.g. lack of fair treatment) (Sulander et al., 2016) also increase intention to leave.

In England specifically, there is limited evidence about the retirement motivations of late-career nurses. Notwithstanding, a recent mixed-methods study – whose findings align with the international literature (Graham et al., 2014; Liebermann et al., 2015) – found that nurses near retirement age are more inclined to stay if they can benefit from flexible working conditions, feel valued and are adequately remunerated (Cleaver et al., 2022). In contrast, deteriorating health, job stress and desire to spend more time with family and friends are associated with attrition (Li et al., 2020; Walker et al., 2018). Whilst employers may not directly influence their employees' health, they can adopt measures to prevent health deterioration or reduce the risk of injuries, including ergonomically redesigning workplaces to save physical energy and prevent musculoskeletal injuries (Uthamanuthaman et al., 2016).

Job satisfaction (Falk et al., 2017), team and manager support (Markowski et al., 2020; Voit and Carson, 2014) and feeling valued for their experience (Uthamanuthaman et al., 2016) are also key retention factors. Additionally, the opportunity to mentor less experienced staff (Haines et al., 2021; Montayre et al., 2023) contributes positively to retention, perhaps attributable to the opportunity to demonstrate leadership skills and clinical expertise. This may, in turn, positively contribute to the retention of less-experienced staff. CPD opportunities, to keep up with technological advances, are positively associated with retention (Armstrong-Stassen and Stassen, 2013). In addition, adequate remuneration is important (Li et al., 2020), as late-career nurses may be the main household providers (Wargo-Sugleris et al., 2018). In contrast, they are more likely to leave when their financial security has been reached (e.g. maximum superannuation benefits reached) (Duffield et al., 2015; Markowski et al., 2020).

Late-career nurses have a wealth of experiential knowledge, thus it is vital to understand their preferences and motivations around retirement (Ejebu et al., 2024) and adopt tailored measures to delay retirement (Doran et al., 2015) or encourage 'retire and return' options.

3.6. Facilitating return-to-practice

There is a paucity of research exploring the motivations, experiences and characteristics of returning nurses. Most research has been conducted in the context of returning to work after a long period of sickness (Covell et al., 2020). According to the 'planned behaviour' theory (Ajzen, 1991), returning to work depends on physical, psychological and social factors. Evidence suggests that returners are typically female, aged 45 years and above and have caring responsibilities (Bernardo et al., 2009, Hammer and Craig, 2008, NHS England, 2014). Nurses returned to practice for financial reasons, when personal circumstances allowed them (e.g. children growing older) and to maintain their registration (Hammer and Craig, 2008; McMurtrie et al., 2014). Motivations for return also included the desire to make a difference in patient care, the need for variety and the challenge of nursing (Durand and Randhawa, 2002; Gould, 2005).

Necessary resources and opportunities also foster return to work (Ajzen, 1991). Factors facilitating nurses' return include refresher courses (Bernardo et al., 2009), clinical supervision (McMurtrie et al., 2014), self-motivation and support from families, as well as self-paced study and mentors (Hammer and Craig, 2008). Qualified preceptors and/or mentors were particularly welcome to enable a smooth return given the difficulty of re-entering the workforce and the expected duties after a long career break (Hammer and Craig, 2008). In addition, flexible hours allowing for work-life balance, return-to-practice programs and work-based learning encourage return (Gould, 2005). Nurses also displayed strong pay and career advancement expectations (Barriball et al., 2007). Certain nurses stayed in the profession for at least three years (Gould, 2005) but most stayed for longer periods, including up to retirement (NHS England, 2014). In contrast, Ajzen suggested that individuals could be hampered from returning to work if their confidence were undermined or if significant barriers existed (Ajzen, 1991). For example, in England, NHS trusts appearing disorganised or lacking clear guidance about return to practice were often rejected by nurses (Barriball et al., 2007). Some nurses were also discouraged from returning because of the cost of 'return-to-practice' courses (Durand and Randhawa, 2002, NHS England, 2014).

There are few studies on return-to-practice in nursing and a lack of

reliable data. Studies focussing on its determinants and barriers, with a particular focus on the NHS, would be beneficial to understand the motivations to return to practice and the extent of the phenomenon.

4. Discussion

For the nursing profession and employers to attract new entrants and retain current employees, we need to understand and address some of the hurdles faced by nurses throughout their careers. This narrative review has revealed two key findings: some push-pull factors are common throughout nurses' careers, whilst others are more specific to each career stage.

Nurses have a myriad of motivations for entering and staying in the profession, some are fairly universal and constant, and others vary between people and career stages. Evidence suggests that for most nurses, perceptions of nursing as a vocation and a desire to care for others, is a motivator throughout their careers. Strategies to enhance the image of nursing to attract and retain a more diverse workforce (e.g. men) are not without challenges. Whilst public perception of nursing is positive – rating it as the 'most trusted profession' in polls (RCN, 2023) – this is against a backdrop of working conditions that include relatively low salaries and work pressure (NMC, 2023a, 2023b). Challenging outdated views of nursing is difficult (Devereux, 2023) and raising its profile is not easy, especially in contexts where nurses perceive their salaries as not commensurate with living costs (*Nursing Times,* 2023).

However, interventions to enhance pecuniary factors alone are unlikely to resolve retention issues. Our review identified that non-pecuniary factors are key to nurse retention (Ball et al., 2022). Some retention (or expected) factors were common across all career stages, such as support from the workplace (or education institutions for students), colleagues and leadership team, flexible working patterns allowing for work-life balance, recognition, opportunities for career advancement, fair treatment (and salary). Notably, nurses perceived that such expectations were not always met by their employers. In contrast, we found that nurses across all career stages are often expected to find solutions or adopt mechanisms to navigate organisational hurdles, for example, developing resilience as a means of coping with increased work pressures, placing the onus on nurses to manage difficult work environments, rather than on employers and policy-makers to enhance the work environment. With evidence that nurses are increasingly burnt-out and understaffed, employers and policy-makers need to provide adequate responses to support and safeguard nurses. Recent protests and strikes by nurses (in the UK) reflect the disgruntlement and exasperation to inadequate responses by Governments and employers about salaries, working conditions and the absence of safe staffing levels (Buchan and Catton, 2023). Employees' rewards should be commensurate with their efforts to reduce the risk of perceived imbalance and intention to leave (Li et al., 2011). Encouragingly, recognition of the push-pull factors key to staff retention is reflected in national policies, such as 'NHS People Promise' (NHS England, 2021). They reflect the actions healthcare staff expect their employers to adopt to ensure their workplace embeds a positive culture to recruit and retain them. They are also evident in the NHS long-term workforce plan (NHS England, 2023), whose goal to retain more staff is predicted to arise by better supporting healthcare professionals throughout their careers, boosting flexible working patterns allowing for enhanced work-life balance and improving the culture and leadership across organisations. These factors – for most within reach of employers except for salaries – can be described as the factors valued and required by nurses and healthcare professions to retain them.

Our review also identified push-pull retention factors unique to each career stage (e.g. difficulty in balancing student-work life, transition shocks for new entrants, lack of career progression in the mid-career stage, lack of recognition and cost of return-to-practice in late-career). These findings reinforce the view that retention factors are not only multi-factorial but also multi-dimensional. They may also reflect the differences in expectations across generations (e.g. Boom, Gen-Z, Millennial). To enhance retention and career structure, a more nuanced approach from policy-makers, employers and nurse leaders would be beneficial to distinguish what different nurses want and need to stay and thrive (NHS Employers, 2020).

Whilst strategies to retain nurses have been implemented in many healthcare systems, they seem to have disproportionately focussed on early-career nurses in comparison to other career stages (Halter et al., 2017). Transition interventions from early-career to nurse status, preceptorship and/or mentoring programs and interventions to reduce burnout are preponderant. Whilst some interventions appear beneficial (Bakker et al., 2020, McClain et al., 2022, Montayre et al., 2023, NHS Employers, 2020), the lack of robust and reliable evaluation renders it difficult to conclude about their effectiveness. Interventions in other career stages are relatively scarce (Doran et al., 2015; Sayli et al., 2022), perhaps because decision-makers sought to focus on nurses with the highest turnover rates. It is not clear if this lack of focus is warranted, but it is important to note that nurses more established in their careers also exhibit high levels of burnout, which is detrimental to their well-being. Notably, the scarce evidence suggests that non-pecuniary interventions improve nurse retention (Montayre et al., 2023; Sayli et al., 2022). Thus, coordinated policy response to retain and make the nursing profession attractive should continue to focus on providing supportive work environments, structured career opportunities, access to continuing education and support for well-being (Buchan and Catton, 2023). Retention efforts are all the more important given the UK operates in a very competitive labour market. For example, Australia uses large financial incentives to attract overseas and British nurses (Palmer et al., 2021).

4.1. Future research

Much of the evidence stemmed from cross-sectional studies and international sources, predominantly from high- and medium-income countries. Not all findings will be applicable to all countries given cultural differences. Retention factors of nurses in low-income countries may warrant further investigation (Willis-Shattuck et al., 2008). Within the NHS, further research is needed to better understand nurse motivations and behaviours across career stages and in different healthcare settings. Plans to enhance retention among nursing staff (and healthcare professionals working closely with nurses) have been outlined in the NHS long-term workforce plan (NHS England, 2023) and the Government has recently reported achieving its pledge to grow the NHS workforce by 50,000 nurses (Conservative Party, 2019). Efforts to retain these newly recruited staff – mostly internationally recruited – are imperative since vacancies remain high (Rolewicz, 2023).

Research to date has typically measured association. Longitudinal research would be beneficial to explore trends and capture potential causality between work environment and retention. Furthermore, robust evaluations would be beneficial to evaluate the cost-effectiveness of such strategies. Finally, many studies identified a range of factors that matter to nurses, but have not measured their relative importance. Methods such as Discrete Choice Experiments could elicit job preferences and estimate potential trade-offs between these job factors. Ideally, Discrete Choice Experiments could be conducted at different career stages, thus identifying which job factors are most valued by whom (Ejebu et al., 2024).

4.2. Limitations

This is a narrative review synthesising findings from a set of six structured literature searches relating to career stage. This approach was chosen because the literature review question is broad. The underlying searches, whilst undertaken diligently and methodically (e.g. each search used a set of keywords combined in a replicable search strategy and inclusion/exclusion criteria were identified to screen the results) were not formal systematic reviews, so may not have been exhaustive.

However, we adopted a systematic approach to gathering evidence from recently published studies to explore nurses' retention factors across all career stages.

5. Conclusion

Knowing what matters most to nurses across all career stages is necessary for decision-makers who want to enhance retention. Our review highlights that push-pull factors are multi-factorial and multi-dimensional. Policymakers and employers need to use nuanced insight into motivations if they are to succeed in attracting a range of people into nursing and be effective in retaining them throughout their careers.

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Declaration of Competing Interest

None declared.

References

Africa, L., Trepanier, S., 2021. The role of the nurse leader in reversing the new graduate nurse intent to leave. Nurse Lead. 19 (3), 239–245.
Aiken, L.H., Lasater, K.B., Sloane, D.M., Pogue, C.A., Fitzpatrick Rosenbaum, K.E., Muir, K.J., McHugh, M.D., 2023. Physician and nurse well-being and preferred interventions to address burnout in hospital practice: factors associated with turnover, outcomes, and patient safety. JAMA Health Forum 4 (7), e231809.
Ajzen, I., 1991. The theory of planned behavior, organizational behavior and human decision processes. Organizational Behaviour and Human Decision Processes 50 (2), 93–114.
Al Yahyaei, A., Hewison, A., Efstathiou, N., Carrick-Sen, D., 2022. Nurses' intention to stay in the work environment in acute healthcare: a systematic review. J. Res. Nurs. 27 (4), 374–397.
Alboliteeh, M., Grande, R.A.N., Berdida, D.J.E., Villagracia, H.N., Raguindin, S.M., AlAbd, A.M.A., 2022. Parental authority as a mediator between career decision-making self-efficacy, career decision ambiguity tolerance, and career choice of nursing students: a path analysis. J. Prof. Nurs. 42, 178–186.
Alexander, R.K., Diefenbeck, C., 2020. Challenging stereotypes: a glimpse into nursing's difficulty recruiting African Americans. J. Prof. Nurs. 36 (1), 15–22.
An, M., Heo, S., Hwang, Y.Y., Kim, J.S., Lee, Y., 2022. Factors affecting turnover intention among new graduate nurses: focusing on job stress and sleep disturbance. Healthcare 10 (6).
Andreassen, L., Di Tommaso, M.L., Strøm, S., 2017. Nurses and physicians: a longitudinal analysis of mobility between jobs and labor supply. Empir. Econ. 52 (4), 1235–1269.
Andrews, M.C., Woolum, A., Mesmer-Magnus, J., Viswesvaran, C., Deshpande, S., 2023. Reducing Turnover Intentions among First-Year Nurses: The Importance of Work Centrality and Coworker Support. Health Services Management Research.
Aparício, C., Nicholson, J., 2020. Do preceptorship and clinical supervision programmes support the retention of nurses? Br. J. Nurs. 29 (20), 1192–1197.
Armstrong-Stassen, M., Stassen, K., 2013. Professional development, target-specific satisfaction, and older nurse retention. Career Dev. Int. 18 (7), 673–693.
Avraham, R., Wacht, O., Yaffe, E., Grinstein-Cohen, O., 2023. Choosing a nursing career during a global health event: a repeated cross-sectional study. Nurse Educ. 10, 1097.
Bae, S.H., 2023. Comprehensive assessment of factors contributing to the actual turnover of newly licensed registered nurses working in acute care hospitals: a systematic review. BMC Nurs. 22 (1).
Bakker, E.J.M., Verhaegh, K.J., Kox, J.H.A.M., van der Beek, A.J., Boot, C.R.L., Roelofs, P.D.D.M., Francke, A.L., 2019. Late dropout from nursing education: An interview study of nursing students' experiences and reasons. Nurse Educ. Pract. 39, 17–25.
Bakker, E.J.M., Kox, J., Boot, C.R.L., Francke, A.L., van der Beek, A.J., Roelofs, P., 2020. Improving mental health of student and novice nurses to prevent dropout: a systematic review. J. Adv. Nurs. 76 (10), 2494–2509.
Ball, J., Ejebu, O., Saville, C., 2022. What keeps nurses in nursing? A scoping review into nurse retention. Nurs. Times 118 (11).
Barriball, L., Coopamah, V., Roberts, J., Watts, S., 2007. Evaluation of return to practice: The views of nurse returnees from three NHS hospital trusts. J. Nurs. Manag. 15 (4), 433–441.
Başkale, H., Serçekuş, P., 2015. Nursing as career choice: perceptions of Turkish nursing students. Contemp. Nurse 51 (1), 5–15.
Bauer, R.N., Kiger, S., 2017. Nursing living-learning communities and student retention: a qualitative study. Nurs. Educ. Perspect. 38 (2), 75–79.
Bernardo, L.M., Burns, H.K., Hoffmann, R., Dailey, J., Hornyak, T., 2009. The fast track back to registered nurses employment. Nurse Educ. Today 29 (1), 124–127.
Blegen, M.A., Spector, N., Lynn, M.R., Barnsteiner, J., Ulrich, B.T., 2017. Newly licensed RN retention: hospital and nurse characteristics. JONA. J. Nurs. Adm. 47 (10), 508–514.
Boath, E., Jinks, A., Thomas, N., Thompson, R., Evans, J., O'Connell, P., Taylor, L., 2016. Don't go with the 'FLO'- a student mobile texting service to enhance nursing student retention. Nurse Educ. Today 45, 80–86.
Bontrager, S., 2016. The role of preceptorship and group cohesion on newly licensed registered nurses' satisfaction and intent to stay. J. Contin. Educ. Nurs. 47 (3), 132–139.
Bratt, C., Gautun, H., 2018. Should I stay or should I go? Nurses' wishes to leave nursing homes and home nursing. J. Nurs. Manag. 26 (8), 1074–1082.
Brewer, C.S., Chao, Y.Y., Colder, C.R., Kovner, C.T., Chacko, T.P., 2015. A structural equation model of turnover for a longitudinal survey among early career registered nurses. Int. J. Nurs. Stud. 52 (11), 1735–1745.
Brimble, M.J., 2015. Does entry route really affect academic outcome? Academic achievement of traditional versus non-traditional entrants to BN(Hons) pre-registration nursing programmes. J. Furth. High. Educ. 39 (3), 379–398.
Brook, J., Aitken, L., Webb, R., MacLaren, J., Salmon, D., 2019. Characteristics of successful interventions to reduce turnover and increase retention of early career nurses: a systematic review. Int. J. Nurs. Stud. 91, 47–59.
Brook, J., Aitken, L.M., MacLaren, J.-A., Salmon, D., 2021. An intervention to decrease burnout and increase retention of early career nurses: a mixed methods study of acceptability and feasibility. BMC Nurs. 20 (1), 19.
Brown, J., McDonald, M., Besse, C., Manson, P., McDonald, R., Rohatinsky, N., Singh, M., 2021. Nursing students' academic success factors: a quantitative cross-sectional study. Nurse Educ. 46 (2), E23–E27.
Buchan, J., Catton, H., 2023. Recover to Rebuild: Investing in the Nursing Workforce for Health System Effectiveness. International Council of Nurses.
Buchan, J., Ball, J., Shembavnakar, M., Charlesworth, A., 2020a. Building the NHS Nursing Workforce in England: Workforce Pressure Points. The Health Foundation, London.
Buchan, J., Gershlick, B., Charlesworth, A., Seccombe, I., 2020b. Falling Short: The NHS Workforce Challenge. Workforce profile and trends of the NHS in England, The Health Foundation, UK.
Bumby, J.C., 2020. Evidence-based interventions for retention of nursing students: a review of the literature. Nurse Educ. 45 (6), 312–315.
Camveren, H., Arslan Yurumezoglu, H., Kocaman, G., 2020. Why do young nurses leave their organization? A qualitative descriptive study. Int. Nurs. Rev. 67 (4), 519–528.
Canzan, F., Saiani, L., Mezzalira, E., Allegrini, E., Caliaro, A., Ambrosi, E., 2022. Why do nursing students leave bachelor program? Findings from a qualitative descriptive study. BMC Nurs. 21 (1), 1–10.
Cao, X., Li, J., Gong, S., 2021. Effects of resilience, social support, and work environment on turnover intention in newly graduated nurses: The mediating role of transition shock. J. Nurs. Manag. 29 (8), 2585–2593.
Carter, M.R., Tourangeau, A.E., 2012. Staying in nursing: what factors determine whether nurses intend to remain employed? J. Adv. Nurs. 68 (7), 1589–1600.
Chachula, K.M., Myrick, F., Yonge, O., 2015. Letting go: how newly graduated registered nurses in Western Canada decide to exit the nursing profession. Nurse Educ. Today 35 (7), 912–918.
Chan, Z.C.Y., Tam, W.S., Lung, M.K.Y., Wong, W.Y., Chau, C.W., 2013. A systematic literature review of nurse shortage and the intention to leave. J. Nurs. Manag. 21 (4), 605–613.
Chang, H.E., Cho, S.H., 2023. Turnover intention and retention of newly licensed nurses in their first job: a longitudinal study. Int. Nurs. Rev. 70 (3), 338–344.
Chao, G.T., O'Leary-Kelly, A.M., Wolf, S., Klein, H.J., Gardner, P.D., 1994. Organizational socialization: its content and consequences. J. Appl. Psychol. 79 (5), 730.
Cho, S.H., Lee, J.Y., Mark, B.A., Yun, S.C., 2012. Turnover of new graduate nurses in their first job using survival analysis. J. Nurs. Scholarsh. 44 (1), 63–70.

Cleaver, K., Markowski, M., Wels, J., 2022. Factors influencing older nurses' decision making around the timing of retirement: An explorative mixed-method study. J. Nurs. Manag. 30 (1), 169–178.
Clow, K.A., Ricciardelli, R., Bartfay, W.J., 2015. Are you man enough to be a nurse? The impact of ambivalent sexism and role congruity on perceptions of men and women in nursing advertisements. Sex Roles 72 (7–8), 363–376.
Collard, S.S., Scammell, J., Tee, S., 2020. Closing the gap on nurse retention: a scoping review of implications for undergraduate education. Nurse Educ. Today 84, 104253.
Conservative Party, 2019. Conservative Party Election Manifesto. Available at https://www.conservatives.com/our-plan/nhs (Accessed January 2022).
Covell, C.L., Sands, S.R., Ingraham, K., Lavoie-Tremblay, M., Price, S.L., Reichert, C., Bourgeault, I.L., 2020. Mapping the peer-reviewed literature on accommodating nurses' return to work after leaves of absence for mental health issues: a scoping review. Hum. Resour. Health 18 (1), 1–7.
Cowden, T.L., Cummings, G.G., 2012. Nursing theory and concept development: a theoretical model of clinical nurses' intentions to stay in their current positions. J. Adv. Nurs. 68 (7), 1646–1657.
Cowley, A., Diver, C., Edgley, A., Cooper, J., 2020. Capitalising on the transformational opportunities of early clinical academic career training for nurses, midwives and allied health professionals. BMC Med. Educ. 20 (1), 1–9.
Crombie, A., Brindley, J., Harris, D., Marks-Maran, D., Thompson, T.M., 2013. Factors that enhance rates of completion: what makes students stay? Nurse Educ. Today 33 (11), 1282–1287.
Dall'Ora, C., Griffiths, P., Ball, J., Simon, M., Aiken, L.H., 2015. Association of 12h shifts and nurses' job satisfaction, burnout and intention to leave: findings from a cross-sectional study of 12 European countries. BMJ Open 5 (9), e008331.
Dall'Ora, C., Ejebu, O., Ball, J., Griffiths, P., 2023. Shift work characteristics and burnout among nurses: cross-sectional survey. Occup. Med. 73 (4), 199–204.
D'Ambra, A.M., Andrews, D.R., 2014. Incivility, retention and new graduate nurses: an integrated review of the literature. J. Nurs. Manag. 22 (6), 735–742.
Dante, A., Rizzi, L., Ianderca, B., Palese, A., 2013. Why do university students not choose a nursing degree at matriculation? An Italian cross-sectional study. Int. Nurs. Rev. 60 (1), 129–135.
de Vries, N., Boone, A., Godderis, L., Bouman, J., Szemik, S., Matranga, D., de Winter, P., 2023. The race to retain healthcare workers: a systematic review on factors that impact retention of nurses and physicians in hospitals. Inquiry 60.
Devereux, E., 2023. Outdated perceptions of nursing 'must be challenged'. Nurs. Times. https://www.nursingtimes.net/news/workforce/outdated-perceptions-of-nursing-must-be-challenged-21-11-2023/.
Doiron, D., Yoo, H.I., 2017. Temporal stability of stated preferences: The case of junior nursing jobs. Health Econ. 26, 802–809.
Doiron, D., Hall, J., Kenny, P., Street, D.J., 2014. Job preferences of students and new graduates in nursing. Appl. Econ. 46 (9), 924–939.
Donnell, W.M., Walker, G.C., Miller, G., 2018. Statewide at-risk tracking and intervention for nurses: identifying and intervening with nursing students at risk of attrition in Texas. Nurs. Educ. Perspect. 39 (3), 145–150.
Doran, D., Jeffs, L., Rizk, P., Laporte, D.R., Chilcote, A.M., Bai, Y.Q., 2015. Evaluating the late career nurse initiative: a cross-sectional survey of senior nurses in Ontario. J. Nurs. Manag. 23 (7), 859–867.
Douglas, J.A., Bourgeois, S., Moxham, L., 2020. Early career registered nurses: how they stay. Collegian 27 (4), 437–442.
Dowers, H., 2021. Can a clinical skills facilitator improve staff retention in a children's hospital? Nurs. Child. Young People 33 (5), 12–17.
Drennan, V.M., Halter, M., Gale, J., Harris, R., 2016. Retaining nurses in metropolitan areas: insights from senior nurse and human resource managers. J. Nurs. Manag. 24 (8), 1041–1048.
Duchscher, J.B., 2012. From surviving to thriving: navigating the first year of professional nursing practice. Nursing the Future.
Duffield, C., Graham, E., Donoghue, J., Griffiths, R., Bichel-Findlay, J., Dimitrelis, S., 2015. Why older nurses leave the workforce and the implications of them staying. J. Clin. Nurs. 24 (5–6), 824–831.
Durand, M.A., Randhawa, G., 2002. Nurses' views about returning to practice after a career break. Br. J. Nurs. 11 (7), 477–485.
Dwyer, P.A., Hunter Revell, S.M., Sethares, K.A., Ayotte, B.J., 2019. The influence of psychological capital, authentic leadership in preceptors, and structural empowerment on new graduate nurse burnout and turnover intent. Appl. Nurs. Res. 48, 37–44.
Dyrbye, L., West, C., Johnson, P., Cipriano, P., Peterson, C., Beatty, D., Major-Elechi, B., Shanafelt, T., 2020. An investigation of career choice regret among American nurses. Am. J. Nurs. 120 (4), 24–33.
Eberth, B., Elliott, R.F., Skåtun, D., 2016. Pay or conditions? The role of workplace characteristics in nurses' labor supply. Eur. J. Health Econ. 17 (6), 771–785.
Edwards, D., Hawker, C., Carrier, J., Rees, C., 2015. A systematic review of the effectiveness of strategies and interventions to improve the transition from student to newly qualified nurse. Int. J. Nurs. Stud. 52 (7), 1254–1268.
Ejebu, O., Turnbull, J., Atherton, I., Rafferty, A.M., Palmer, B., Philippou, J., Prichard, J., Jamieson, M., Rolewicz, L., Williams, M., Ball, J., 2024. What might make nurses stay? A protocol for discrete choice experiments to understand NHS nurses' preferences at early-career and late-career stages. BMJ Open 14 (2), e075066.
Engström, M., Mårtensson, G., Pålsson, Y., Strömberg, A., 2022. What relationships can be found between nurses' working life and turnover? A mixed-methods approach. J. Nurs. Manag. 30 (1), 288–297.
Everett, M.C., 2022. Factors that affect the success of ethnically diverse nursing students: an integrative review of the literature. Nurs. Educ. Perspect. 43 (2), 91–95.
Failla, K.R., Ecoff, L., Stichler, J.F., Pelletier, L.R., 2021. A 1-year accredited nurse residency program's effect on intent to leave. J. Nurs. Adm. 51 (12), 606–613.
Falk, N.L., Rudner, N., Chapa, D., Greene, J., 2017. Nurse practitioners and intent to retire. J. Am. Assoc. Nurse Pract. 29 (3), 130–135.
Fallatah, F., Laschinger, H.K.S., Read, E.A., 2017. The effects of authentic leadership, organizational identification, and occupational coping self-efficacy on new graduate nurses' job turnover intentions in Canada. Nurs. Outlook 65 (2), 172–183.
Fasbender, U., Van der Heijden, B.I.J.M., Grimshaw, S., 2019. Job satisfaction, job stress and nurses' turnover intentions: The moderating roles of on-the-job and off-the-job embeddedness. J. Adv. Nurs. 75 (2), 327–337.
Favaro, A., Wong, C., Oudshoorn, A., 2021. Relationships among sex, empowerment, workplace bullying and job turnover intention of new graduate nurses. J. Clin. Nurs. 30 (9/10), 1273–1284.
Ferri, P., Laffi, P., Rovesti, S., Artioli, G., Di Lorenzo, R., Magnani, D., 2016. Motivational factors for choosing the degree course in nursing: a focus group study with nursing students. Acta Biomed 87, 19–27.
Fisher, N., Bramley, L., Cooper, J., Field-Richards, S.E., Lymn, J., Timmons, S., 2022. A qualitative study exploring the influence of a talent management initiative on registered nurses' retention intentions. J. Nurs. Manag. 30 (8), 4472–4479.
Fitzgerald, A., Konrad, S., 2021. Transition in Learning during COVID-19: Student Nurse Anxiety, Stress, and Resource Support. Nursing Forum. Wiley Online Library, In, pp. 298–304.
Flinkman, M., Salanterä, S., 2015. Early career experiences and perceptions - a qualitative exploration of the turnover of young registered nurses and intention to leave the nursing profession in Finland. J. Nurs. Manag. 23 (8), 1050–1057.
Folden, H., Larsen, A.B., Møller, T.P., Østergaard, D., 2023. An explorative study of nurses' perception of turnover and retention. Dan. Med. J. 70 (10).
Forde-Johnston, C., Stoermer, F., 2022. Giving nurses a voice through 'listening to staff' conversations to inform nurse retention and reduce turnover. Br. J. Nurs. 31 (12), 632–638.
Friday, L., Zoller, J.S., Hollerbach, A.D., Jones, K., Knofczynski, G., 2015. The effects of a prelicensure extern program and nurse residency program on new graduate outcomes and retention. J. Nurses Prof. Dev. 31 (3), 151–157.
Garside, J., Stephenson, J., Hayles, J., Barlow, N., Ormrod, G., 2021. Explaining nursing attrition through the experiences of return-to-practice students: a mixed-methods study. Br. J. Nurs. 30 (8), 490–496.
Gavine, A., Carson, M., Eccles, J., Whitford, H.M., 2020. Barriers and facilitators to recruiting and retaining men on pre-registration nursing programmes in Western countries: a systemised rapid review. Nurse Educ. Today 88 (N.PAG-N.PAG).
Glerean, N., Hupli, M., Talman, K., Haavisto, E., 2017. Young peoples' perceptions of the nursing profession: An integrative review. Nurse Educ. Today 57, 95–102.
Glew, P.J., Ramjan, L.M., Salas, M., Raper, K., Creed, H., Salamonson, Y., 2019. Relationships between academic literacy support, student retention and academic performance. Nurse Educ. Pract. 39, 61–66.
Gloster, R., Edwards, M., Spiegelhalter, K., Newton, B., Hirsh, W., 2018. Thinking ahead: exploring support provided by employers to help their staff plan for the future. Calouste Gulbenkian Foundation and Centre for Ageing Better. 1–28.
Gómez, E., Brostoff, M., 2018. Helping high school students explore nursing careers in a summer internship program. J. Nurses Prof. Dev. 34 (3), 133–141.
Goodman, J.T., Landgren, A., 2021. Escape into a nursing career: An active recruitment strategy for prospective students. Nurs. Educ. Perspect. 42 (6), E147–E148.
Gordon, S., Nelson, S., 2012. Moving beyond the Virtue Script in Nursing: Creating a Knowledge-Based Identity for Nurses. Nursing reconsidered, In, The complexities of care, pp. 13–29.
Gottfredson, L.S., 2002. Gottfredson's Theory of Circumscription, Compromise, and Self-creation.
Gould, D., 2005. Return-to-practice initiatives in nursing retention. Nurs. Stand. 19 (46), 41.
Graham, E., Donoghue, J., Duffield, C., Griffiths, R., Bichel-Findlay, J., Dimitrelis, S., 2014. Why do older RNs keep working? J. Nurs. Adm. 44 (11), 591–597.
Gularte-Rinaldo, J., Baumgardner, R., Tilton, T., Brailoff, V., 2022. Mentorship ReSPeCT study: a nurse mentorship program's impact on transition to practice and decision to remain in nursing for newly graduated nurses. Nurse Lead. 2, 262–267.
Haines, S., Evans, K., Timmons, S., Cutler, E., 2021. A service improvement project of a legacy nurse programme to improve the retention of late career nurses. J. Res. Nurs. 26 (7), 648–681.
Halcomb, E., Bird, S., 2020. Job satisfaction and career intention of Australian general practice nurses: a cross-sectional survey. J. Nurs. Scholarsh. 52 (3), 270–280.
Halter, M., Pelone, F., Boiko, O., Beighton, C., Harris, R., Gale, J., Gourlay, S., Drennan, V., 2017. Interventions to reduce adult nursing turnover: a systematic review of systematic reviews. Open Nurs. J. 11, 108–123.
Hammer, V., Craig, G., 2008. The experiences of inactive nurses returned to nursing after completing a refresher course. J. Contin. Educ. Nurs. 39 (8), 358–367.
Haririan, H., Samadi, P., Lalezari, E., Habibzadeh, S., Porter, J.E., 2022. Nursing and midwifery students' mental health status and intention to leave during Covid-19 pandemic. SAGE Open Nurs. 1–8.
Haron, Y., Reicher, S., Riba, S., 2014. Factors influencing nursing career choices and choice of study program. Health Mark. Q. 31 (2), 167–177.
Hayes Lane, S., Brackney, D.E., Welborn, A., Fiske, E.A., 2022. Online graduate student retention: integrative review with a theoretically framed case exemplar. J. Nurs. Educ. 61 (6), 314–321.
HEE, 2015. Reducing Pre-registration Attrition and Improving Retention (RePAIR). Available online. https://www.hee.nhs.uk/our-work/capitalahp/repair.
Heidari, M., Seifi, B., Gharebagh, Z., 2017. Nursing staff retention: effective factors. Annals of Tropical Medicine & Public Health 10 (6), 1467–1473.
Heinen, M.M., van Achterberg, T., Schwendimann, R., Zander, B., Matthews, A., Kózka, M., Ensio, A., Sjetne, I.S., Casbas, T.M., Ball, J., Schoonhoven, L., 2013.

Nurses' intention to leave their profession: a cross-sectional observational study in 10 European countries. Int. J. Nurs. Stud. 50 (2), 174–184.
Heyes, A., 2005. The economics of vocation or 'why is a badly paid nurse a good nurse'? J. Health Econ. 24 (3), 561–569.
Hickey, N., Harrison, L., Sumsion, J., 2012. Using a socioecological framework to understand the career choices of single-and double-degree nursing students and double-degree graduates. In: International Scholarly Research Notices 2012.
Hickey, N., Sumsion, J., Harrison, L., 2013. Why nursing? Applying a socio-ecological framework to study career choices of double degree nursing students and graduates. J. Adv. Nurs. 69 (8), 1714–1724.
House of Commons Health Committee, 2018. The nursing workforce. Second report of session 2017–2019.
Hu, Y.C., Chen, S.R., Chen, I.H., Shen, H.C., Lin, Y.K., Chang, W.Y., 2015. Evaluation of work stress, turnover intention, work experience, and satisfaction with preceptors of new graduate nurses using a 10-minute preceptor model. J. Contin. Educ. Nurs. 46 (6), 261–271.
Inkson, K., 2007. Understanding Careers: The Metaphors of Working Lives. Sage Publication Ltd, Thousand Oaks.
Inkson, K., Dries, N., Arnold, J., 2007. Understanding Careers: The Metaphors of Working Lives. Sage Publications Thousand Oaks, CA.
Jarden, R.J., Scott, S., Rickard, N., Long, K., Burke, S., Morrison, M., Mills, L., Barker, E., Sharma, K., Twomey, B., 2023. Factors contributing to nurse resignation during COVID-19: a qualitative descriptive study. J. Adv. Nurs. 79 (7), 2484–2501.
Jean-Baptiste, A.M., 2019. Recruiting and retaining African Americans in BSN programs. Association of Black Nursing Faculty Foundation Journal 30 (2), 44–49.
Jiang, L., Xu, X., Jacobs, S., 2023. From incivility to turnover intentions among nurses: a multifoci and self-determination perspective. J. Nurs. Manag. 1, 1–12.
Jirwe, M., Rudman, A., 2012. Why choose a career in nursing? J. Adv. Nurs. 68 (7), 1615–1623.
Johnston, S., Heneghan, P., Daniels, P., 2020. Mentoring initiative to retain community-based registered nurses in palliative care. Br. J. Community Nurs. 25 (7), 335–339.
Jones, S.J., 2017. Establishing a nurse mentor program to improve nurse satisfaction and intent to stay. J. Nurses Prof. Dev. 33 (2), 76–78.
Jönsson, S., Stavreski, H., Muhonen, T., 2021. Preceptorship as part of the recruitment and retention strategy for nurses? A qualitative interview study. J. Nurs. Manag. 29 (6), 1841–1847.
Joseph, B., Jacob, S., Lam, L., Rahman, M.A., 2022. Factors influencing the transition and retention of mental health nurses during the initial years of practice: scoping review. J. Nurs. Manag. 30 (8), 4274–4284.
Jung, Y.M., 2020. Nursing students' career identity, satisfaction with major, and career stress by career decision type. Jpn. J. Nurs. Sci. 17 (1), e12281.
Kaewpan, W., Peltzer, K., 2019. Nurses' intention to work after retirement, work ability and perceptions after retirement: a scoping review. Pan Afr. Med. J. 33.
Kaldal, M.H., Voldbjerg, S.L., Grønkjær, M., Conroy, T., Feo, R., 2023. Newly graduated nurses' commitment to the nursing profession and their workplace during their first year of employment: a focused ethnography. J. Adv. Nurs. 80 (3), 1058–1071.
Karlsson, A.C., Gunningberg, L., Bäckström, J., Pöder, U., 2019. Registered nurses' perspectives of work satisfaction, patient safety and intention to stay – a double-edged sword. J. Nurs. Manag. 27 (7), 1359–1365.
Kelly, E., Stoye, G., Warner, M., 2022. Factors Associated with Staff Retention in the NHS Acute Sector. IFS.
Kenny, P., Reeve, R., Hall, J., 2016. Satisfaction with nursing education, job satisfaction, and work intentions of new graduate nurses. Nurse Educ. Today 36, 230–235.
Kerzman, H., Van Dijk, D., Siman-Tov, M., Friedman, S., Goldberg, S., 2020. Professional characteristics and work attitudes of hospital nurses who leave compared with those who stay. J. Nurs. Manag. 28 (6), 1364–1371.
Kiekkas, P., Igoumenidis, M., Stefanopoulos, N., Bakalis, N., Kefaliakos, A., Aretha, D., 2016. Gender bias favors female nursing students in the written examination evaluation: crossover study. Nurse Educ. Today 45, 57–62.
Kim, J., Yang, Y., 2023. Mediating influences of the exchange relationship with a preceptor on the relationship between burnout and job retention intention among new nurses in Korea. Healthcare 11 (18), 2575.
Kim, J., Chae, D., Yoo, J.Y., 2021. Reasons behind generation Z nursing students' intentions to leave their profession: a cross-sectional study. Inquiry 58, 1–8.
Kim, Y., Kim, H.Y., 2021. Retention rates and the associated risk factors of turnover among newly hired nurses at South Korean hospitals: a retrospective cohort study. Int. J. Environ. Res. Public Health 18 (19).
Knight, J., Corbett, A., Smith, C., Watkins, B., Hardy, R., Jones, G., 2012. "What made me stay?" a review of the reasons student nurses enrolled in a Bachelor of Nursing programme completed their studies: a descriptive phenomenological study. Nurse Educ. Today 32 (8), e62–e65.
Kovner, C.T., Djukic, M., Fatehi, F.K., Fletcher, J., Jun, J., Brewer, C., Chacko, T., 2016. Estimating and preventing hospital internal turnover of newly licensed nurses: a panel survey. Int. J. Nurs. Stud. 60, 251–262.
Kox, J.H.A.M., Runhaar, J., Groenewoud, J.H., Bierma-Zeinstra, S.M.A., Bakker, E.J.M., Miedema, H.S., Roelofs, P.D.D.M., 2022. Do physical work factors and musculoskeletal complaints contribute to the intention to leave or actual dropout in student nurses? A prospective cohort study. J. Prof. Nurs. 39, 26–33.
Kram, S.L., Wilson, J., 2016. Nurse residency program attracts and retains novice nurses. Nursing 46 (2), 15–16.
Kramer, M., 1975. Reality Shock: Why Nurses Leave Nursing. LWW.
Kukkonen, P., Suhonen, R., Salminen, L., 2016. Discontinued students in nursing education – who and why? Nurse Educ. Pract. 17, 67–73.
Laschinger, H.K.S., 2012. Job and career satisfaction and turnover intentions of newly graduated nurses. J. Nurs. Manag. 20 (4), 472–484.
Lavoie-Tremblay, M., Fernet, C., Lavigne, G.L., Austin, S., 2016. Transformational and abusive leadership practices: impacts on novice nurses, quality of care and intention to leave. J. Adv. Nurs. 72 (3), 582–592.
Lee, E., 2019. Why newly graduated nurses in South Korea leave their first job in a short time? A survival analysis. Hum. Resour. Health 17 (1), 1–9.
Lee, E., De Gagne, J.C., 2022. The impact of resilience on turnover among newly graduated nurses: a 1-year follow-up study. J. Nurs. Manag. 30 (5), 1295–1302.
Lee, H., Lim, Y., Jung, H.Y., Shin, Y.W., 2012. Turnover intention of graduate nurses in South Korea. Jpn. J. Nurs. Sci. 9 (1), 63–75.
Leone, C., Bruyneel, L., Anderson, J.E., Murrells, T., Dussault, G., Henriques de Jesus, É., Sermeus, W., Aiken, L., Rafferty, A.M., 2015. Work environment issues and intention-to-leave in Portuguese nurses: a cross-sectional study. Health Policy 119 (12), 1584–1592.
Levinson, D.J., Darrow, C., Klein, E., Levinson, M., McKee, B., 1978. The Seasons of a Man's Life. Ballantine's Book, New York.
Li, H., Sun, D., Wan, Z., Chen, J., Sun, J., 2020. The perceptions of older nurses regarding continuing to work in a nursing career after retirement: a qualitative study in two Chinese hospitals of different levels. Int. J. Nurs. Stud. 105, 1–8.
Li, J., Galatsch, M., Siegrist, J., Müller, B.H., Hasselhorn, H.M., group, E.N.S, 2011. Reward frustration at work and intention to leave the nursing profession—prospective results from the European longitudinal NEXT study. Int. J. Nurs. Stud. 48 (5), 628–635.
Liaw, S.Y., Wu, L.T., Chow, Y.L., Lim, S., Tan, K.K., 2017. Career choice and perceptions of nursing among healthcare students in higher educational institutions. Nurse Educ. Today 52, 66–72.
Liebermann, S.C., Müller, A., Weigl, M., Wegge, J., 2015. Antecedents of the expectation of remaining in nursing until retirement age. J. Adv. Nurs. 71 (7), 1624–1638.
Linden, M.A., Mitchell, G., Carlisle, S., Rainey, D., Mulvenna, C., Monaghan, C., 2022. Recruiting males to the nursing profession: acceptability testing of the 'make a difference with nursing' intervention for post-primary school students. BMC Nurs. 21 (1), 1–7.
Liu, T., Li, S., Yang, R., Liu, S., Chen, G., 2019. Job preferences of undergraduate nursing students in eastern China: a discrete choice experiment. Hum. Resour. Health 17 (1).
Liu, X.L., Wang, T., Bressington, D., Nic Giolla Easpaig, B., Wikander, L., Tan, J.B., 2023. Factors influencing retention among regional, rural and remote undergraduate nursing students in Australia: a systematic review of current research evidence. Int. J. Environ. Res. Public Health 20 (5), 23.
Lokmic-Tomkins, Z., Tanner, C., Warren, N., 2022. Supporting pregnant nursing students in graduate entry-to-practice nursing programs: a case study. Nurse Educ. Today 116, 1–8.
Markowski, M., Cleaver, K., Weldon, S.M., 2020. An integrative review of the factors influencing older nurses' timing of retirement. J. Adv. Nurs. 76 (9), 2266–2285.
Martin, J., 1992. Cultures in Organizations: Three Perspectives. Oxford University Press.
Marufu, T.C., Collins, A., Vargas, L., Gillespie, L., Almghairbi, D., 2021. Factors influencing retention among hospital nurses: systematic review. Br. J. Nurs. 30 (5), 302–308.
Marvell, R., Cox, A., 2017. Fulfilling Work: What Do Older Workers Value About Work and Why? Centre for Ageing Better.
Marznaki, Z.H., Khanjankhani, K., Salisu, W.J., Hajihosseini, F., Barzegari, S., 2021. Identifying and ranking the factors affecting the choice of nursing discipline among nursing students in Iran: a fuzzy hierarchical analysis. J. Nurs. Res. 29 (5), e171.
Matthews, A.K., Abboud, S., Smith, A.U., Smith, C., Jeremiah, R., Hart, A., Weaver, T., 2022. Strategies to address structural and institutional barriers to success among students of color in nursing programs. J. Prof. Nurs. 40, 96–104.
Maymoun, N., Sohail, M.S., 2020. Who wants to be a nurse? Understanding Emirati female students' knowledge and attitudes about nursing as a career. Nurs. Educ. Perspect. 41 (3), E14–E19.
McClain, A.R., Palokas, M., Christian, R., Arnold, A., 2022. Retention strategies and barriers for millennial nurses: a scoping review. JBI Evidence Synthesis 20 (1), 121–157.
McKendry, S., Wright, M., Stevenson, K., 2014. Why here and why stay? Students' voices on the retention strategies of a widening participation university. Nurse Educ. Today 34 (5), 872–877.
McKenna, L., Brooks, I., 2018. Graduate entry students' early perceptions of their future nursing careers. Nurse Educ. Pract. 28, 292–295.
McMurtrie, L.J., Cameron, M., OLuanaigh, P., Osborne, Y.T., 2014. Keeping our nursing and midwifery workforce: factors that support non-practising clinicians to return to practice. Nurse Educ. Today 34 (5), 761–765.
Mikkonen, K., Kääriäinen, M., 2020. Content analysis in systematic reviews. In: Kyngäs, H., Mikkonen, K., Kääriäinen, M. (Eds.), The Application of Content Analysis in Nursing Science Research. Springer International Publishing, Cham, pp. 105–115.
Mills, A., Ryden, J., Knight, A., Mills, A., 2020. Juggling to find balance: hearing the voices of undergraduate student nurses. Br. J. Nurs. 29 (15), 897–903.
Mills, J., Chamberlain-Salaun, J., Harrison, H., Yates, K., O'Shea, A., 2016. Retaining early career registered nurses: a case study. BMC Nurs. 15 (1).
Mills, J., Woods, C., Harrison, H., Chamberlain-Salaun, J., Spencer, B., 2017. Retention of early career registered nurses: the influence of self-concept, practice environment and resilience in the first five years post-graduation. J. Res. Nurs. 22 (5), 372–385.
Mitchell, K.M., Baxter, C.E., Gural, D.M., Chorney, M.A., Simmons-Swinden, J.M., Queau, M.L., Nayak, N., 2021. Strategies for retention of nursing students: a scoping review. Nurse Educ. Pract. 50, 1–9.
Montayre, J., Alananzeh, I., Bail, K., Barnewall, K., Beament, T., Campbell, S., Carmody, C., Chan, A., Donnelly, F., Duff, J., 2022. Development and psychometric testing of the gender misconceptions of men in nursing (GEMINI) scale among nursing students. Contemp. Nurse 58 (4), 253–263.

Montayre, J., Knaggs, G., Harris, C., Li, W., Tang, L., de Almeida Neto, A., Antoniou, M., 2023. What interventions and programmes are available to support older nurses in the workplace? A literature review of available evidence. Int. J. Nurs. Stud. 139, 1–11.
Morgan, B., 2022. NHS Staffing Shortages: Why Do Politicians Struggle to Give the NHS the Staff it Needs? (The King's Fund).
Mulkey, D., Casey, K., 2023. Factors that influence the retention of graduate nurses at a safety net teaching hospital. J. Nurses Prof. Dev. 39 (2), 70–79.
Ngabonzima, A., Asingizwe, D., Kouveliotis, K., 2020. Influence of nurse and midwife managerial leadership styles on job satisfaction, intention to stay, and services provision in selected hospitals of Rwanda. BMC Nurs. 19 (1), 1–11.
NHS Employers, 2020. Improving Retention at all Stages of nurses' Careers. United Lincolnshire Hospitals NHS Trust.
NHS England, 2014. Nursing Return to Practice: Review of the current landscape. pp. 1–35.
NHS England, 2021. Our NHS people promise.
NHS England, 2022. National preceptorship framework for nursing. Available online. https://www.england.nhs.uk/long-read/national-preceptorship-framework-for-nursing/.
NHS England, 2023. NHS Long Term Workforce Plan.
Nikolaidou, M., Bryer, J., Peterson-Graziose, V., Raman, J., 2019. Variables that influence retention in registered nurse-bachelor of science students: a multisite longitudinal study. Teaching & Learning in Nursing 14 (4), 303–308.
NMC, 2023a. Leavers' survey 2022. Why do people leave the NMC register?.
NMC, 2023b. Spotlight on Nursing and Midwifery.
Noguchi-Watanabe, M., Yamamoto-Mitani, N., Nagami, Y., Eltaybani, S., Inagaki, A., Taniguchi, Y., 2020. Homecare nurses' length of conversation and intention to remain at the workplace: a multilevel analysis. J. Nurs. Manag. 29 (4), 721–730.
Norris, T.L., Wicks, M.N., Cowan, P.A., Davison, E.S., 2016. A summer pre-matriculation program: bridging the gap for disadvantaged underrepresented minority students interested in a nursing career. J. Nurs. Educ. 55 (8), 471–475.
Nursing Times, 2023. Nurse Pay Satisfaction at Five-year Low, Reveals NHS Staff Survey.
Öncü, E., Vayısoğlu, S.K., Efecan, E.Ö., Güven, Y., 2022. The relationship of social status and social image with the choice of nursing career among the next generation of Turkish youth: a cross-sectional study. Nurse Educ. Pract. 64, 103442.
Owens, R.A., Burwell, P.M., Deese, S., Petros, T., 2021. Graduating nursing student and practicing nurse perceptions on promoting recruitment, work satisfaction, and intent to stay: a qualitative study. J. Nurs. Regul. 11 (4), 41–50.
Palazzo, S.J., Erickson, M.S., 2022. Male high school students' perceptions of nursing as a professional career choice: Nursing Pathway Project. Nurs. Educ. Perspect. 43 (2), 96–102.
Palmer, B., Rolewicz, L., Dodsworth, E., 2023. Waste not, want not (Strategies to improve the supply of clinical staff to the NHS).
Palmer, W., Leone, C., Appleby, J., Trust, N., 2021. Recruitment of Nurses from Overseas: Exploring the Factors Affecting Levels of International Recruitment. The Nuffield Trust.
Park, S.Y., Kim, H., Ma, C., 2022. Factors associated with difficulty in adapting and intent to leave among new graduate nurses in South Korea. Health Care Manage. Rev. 47 (2), 168–178.
Penprase, B., Oakley, B., Ternes, R., Driscoll, D., 2013. Empathy as a determining factor for nursing career selection. J. Nurs. Educ. 52 (4), 192–197.
Poreddi, V., Konduru, R., Math, S.B., 2012. Assessing the attitudes and perceptions towards nursing profession among nursing students. Nurs. J. India 103 (1), B15.
Pressley, C., Garside, J., 2023. Safeguarding the Retention of Nurses: A Systematic Review on Determinants of nurse's Intentions to Stay. Nursing Open.
Price, S., 2013. Factors that influence career decisions in Canada's nurses. Nurs. Leadersh. 26 (Special Issue).
Price, S.L., McGillis Hall, L., Angus, J.E., Peter, E., 2013. Choosing nursing as a career: a narrative analysis of millennial nurses' career choice of virtue. Nurs. Inq. 20 (4), 305–316.
Priode, K.S., Dail, R.B., Swanson, M., 2020. Non-academic factors that influence non-traditional nursing student retention. Nurs. Educ. Perspect. 41 (4), 246–248.
RCN, 2023. Nursing confirmed as most trusted profession as strike risk grows.
Read, E., Laschinger, H.K.S., 2017. Transition experiences, intrapersonal resources, and job retention of new graduate nurses from accelerated and traditional nursing programs: a cross-sectional comparative study. Nurse Educ. Today 59, 53–58.
Robinson, J., Engward, H., Godier-McBard, L., Jones, K., 2022. Does registered nurse involvement in improving healthcare services, influence registered nurse retention? J. Res. Nurs. 27 (6), 545–557.
Robson, A., Robson, F., 2015. Do nurses wish to continue working for the UK National Health Service? A comparative study of three generations of nurses. J. Adv. Nurs. 71 (1), 65–77.
Robson, A., Robson, F., 2016. Investigation of nurses' intention to leave: a study of a sample of UK nurses. J. Health Org. Manag. 30 (1), 154–173.
Rockers, P.C., Jaskiewicz, W., Kruk, M.E., Phathammavong, O., Vangkonevilay, P., Paphassarang, C., Phachanh, I.T., Wurts, L., Tulenko, K., 2013. Differences in preferences for rural job postings between nursing students and practicing nurses: evidence from a DCE in Lao People's Democratic Republic. Hum. Resour. Health 11 (1).
Rodgers, S., Stenhouse, R., McCreaddie, M., Small, P., 2013. Recruitment, selection and retention of nursing and midwifery students in Scottish universities. Nurse Educ. Today 33 (11), 1301–1310.
Rodriguez-Garcia, M.C., Marquez-Hernandez, V.V., Granados-Gamez, G., Aguilera-Manrique, G., Gutierrez-Puertas, L., 2020. Magnet hospital attributes in nursing work environment and its relationship to nursing students' clinical learning environment and satisfaction. J. Adv. Nurs. 77 (2), 787–794.
Rolewicz, L., 2023. Past, present and future of NHS nurse numbers. Available: https://www.nuffieldtrust.org.uk/resource/past-present-and-future-of-nhs-nurse-numbers.
Roos, E., Fichardt, A.E., MacKenzie, M.J., Raubenheimer, J., 2016. Attrition of undergraduate nursing students at selected South African universities. Curationis 39 (1), 1–8.
Rose, H., Skaczkowski, G., Gunn, K.M., 2023. Addressing the challenges of early career rural nursing to improve job satisfaction and retention: strategies new nurses think would help. J. Adv. Nurs. 79 (9), 3299–3311.
Rudman, A., Gustavsson, P., Hultell, D., 2014. A prospective study of nurses' intentions to leave the profession during their first five years of practice in Sweden. Int. J. Nurs. Stud. 51 (4), 612–624.
Salamonson, Y., Everett, B., Cooper, M., Lombardo, L., Weaver, R., Davidson, P.M., 2014. Nursing as first choice predicts nursing program completion. Nurse Educ. Today 34 (1), 127–131.
Sandler, M., 2018. Why are new graduate nurses leaving the profession in their first year of practice and how does this impact on ED nurse staffing? A rapid review of current literature and recommended reading. Can. J. Emerg. Nurs. 41 (1), 23–24.
Sasso, L., Bagnasco, A., Catania, G., Zanini, M., Aleo, G., Watson, R., The, R.N.C.I.T.W.G, 2019. Push and pull factors of nurses' intention to leave. J. Nurs. Manag. 27 (5), 946–954.
Sayli, M., Moscelli, G., Blanden, J., Bojke, C., Mello, M., 2022. Do Non-monetary Interventions Improve Staff Retention? (Evidence from English NHS Hospitals).
Scheffler, R.M., Arnold, D.R., 2019. Projecting shortages and surpluses of doctors and nurses in the OECD: what looms ahead. Health Econ. Policy Law 14 (2), 274–290.
Schiemann, W.A., 2009. Aligning performance management with organizational strategy, values, and goals. Perform. Manag. 45–87.
Schroyer, C.C., Zellers, R., Abraham, S., 2020. Increasing registered nurse retention using mentors in critical care services. Health Care Manager 39 (2), 85–99.
Senek, M., Robertson, S., King, R., Wood, E., Ryan, T., 2023. Should I stay or should I go? Why nurses are leaving community nursing in the UK. BMC Health Serv. Res. 23 (1), 164.
Shacklock, K., Brunetto, Y., 2012. The intention to continue nursing: work variables affecting three nurse generations in Australia. Journal of Advanced Nursing (John Wiley & Sons, Inc.) 68 (1), 36–46.
Shembavnekar, N., Buchan, J., Bazeer, N., Kelly, E., Beech, J., Charlesworth, A., McConkey, R., Fisher, R., 2022. NHS workforce projections 2022. The Health Foundation. Accessed online: https://www.health.org.uk/publications/nhs-workforce-projections-2022.
Smith-Wacholz, H.C., Wetmore, J.P., Conway, C., McCarley, M., 2019. Retention of nursing students: an integrative review. Nurs. Educ. Perspect. 40 (6), 328–332.
Soerensen, J., Nielsen, D.S., Pihl, G.T., 2023. It's a hard process – nursing students' lived experiences leading to dropping out of their education; a qualitative study. Nurse Educ. Today 122.
Steele-Moses, S., 2018. Recruitment attributes important to new nurse graduates employed on adult medical-surgical units. Medsburg Nursing 27 (5), 310–328.
Sulander, J., Sinervo, T., Elovainio, M., Heponiemi, T., Helkama, K., Aalto, A.M., 2016. Does organizational justice modify the association between job involvement and retirement intentions of nurses in Finland? Res. Nurs. Health 39 (5), 364–374.
Super, D.E., 1992. Toward a Comprehensive Theory of Career Development.
Sweetman, R., Hovdhaugen, E., Thomas, L., 2022. The (dis)integration of nursing students. Multiple transitions, fragmented integration and implications for retention. Tert. Educ. Manag. 29 (1), 79–92.
Szeremeta, L., Shamash, N., 2016. Improving staff retention and career progression. Nurs. Times 112 (18), 18–20.
Tarhan, M., Doğan, P., Kürklü, A., 2022. Nurse-physician collaboration, intention to leave job, and professional commitment among new graduate nurses. Nurs. Forum 57 (2), 252–259.
Tawash, E., Cowman, S., 2018. The NURSING-positive recruitment Arabic model (NURS-PRAM): a mixed methods study. J. Adv. Nurs. 74 (11), 2630–2639.
Ten Hoeve, Y., Castelein, S., Jansen, W., Jansen, G., Roodbol, P., 2016. Predicting factors of positive orientation and attitudes towards nursing: a quantitative cross-sectional study. Nurse Educ. Today 40, 111–117.
ten Hoeve, Y., Castelein, S., Jansen, G., Roodbol, P., 2017. Dreams and disappointments regarding nursing: student nurses' reasons for attrition and retention. A qualitative study design. Nurse Educ. Today 54, 28–36.
Todd, C., Ackerman-Barger, K.W., 2019. Barbershop talk: African-American men's perceptions of nursing as a career. J. Natl. Black Nurses' Assoc. 30 (2), 52–56.
Tomietto, M., Rappagliosi, C.M., Sartori, R., Battistelli, A., 2015. Newcomer nurses' organisational socialisation and turnover intention during the first 2 years of employment. J. Nurs. Manag. 23 (7), 851–858.
Tourangeau, A.E., Patterson, E., Saari, M., Thomson, H., Cranley, L., 2017. Work-related factors influencing home care nurse intent to remain employed. Health Care Manage. Rev. 42 (1).
Tranter, S., Gaul, C., McKenzie, S., Graham, K., 2018. Initiatives aimed at retaining ethnically diverse student nurses in undergraduate programmes: An integrative review. J. Clin. Nurs. 27 (21–22), 3846–3857.
Trepanier, S., Early, S., Ulrich, B., Cherry, B., 2012. New graduate nurse residency program: a cost-benefit analysis based on turnover and contract labor usage. Nurs. Econ. 30 (4), 207–214.
Twidwell, J., Dial, D., Fehr, C., 2022. Gender, career choice confidence, and perceived faculty support in baccalaureate nursing students. J. Prof. Nurs. 39, 96–100.
Ulupinar, S., Aydogan, Y., 2021. New graduate nurses' satisfaction, adaptation and intention to leave in their first year: a descriptive study. J. Nurs. Manag. 29 (6), 1830–1840.

Unruh, L., Zhang, N.J., Chisolm, L., 2016. Job and professional leaving among newly licensed RNs. West. J. Nurs. Res. 38 (1), 5–26.
Unruh, L.Y., Zhang, N.J., 2014. Newly licensed registered nurse job turnover and turnover intent. J. Nurses Prof. Dev. 30 (5), 220–229.
Uthamanuthaman, T., Chua, T.L., Ang, S.Y., 2016. Older nurses: a literature review on challenges, factors in early retirement and workforce retention. Proceedings of Singapore Healthcare 25 (1), 50–55.
Valizadeh, L., Zamanzadeh, V., Habibzadeh, H., Alilu, L., Gillespie, M., Shakibi, A., 2018. Threats to nurses' dignity and intent to leave the profession. Nurs. Ethics 25 (4), 520–531.
Van Camp, J., Chappy, S., 2017. The effectiveness of nurse residency programs on retention: a systematic review. AORN J. 106 (2), 128–144.
Van Der Heijden, B., Mahoney, C.B., Xu, Y., 2019. Impact of job demands and resources on nurses' burnout and occupational turnover intention towards an age-moderated mediation model for the nursing profession. Int. J. Environ. Res. Public Health 16 (11).
Van der Heijden, B.I.J.M., Peeters, M.C.W., Le Blanc, P.M., Van Breukelen, J.W.M., 2018. Job characteristics and experience as predictors of occupational turnover intention and occupational turnover in the European nursing sector. J. Vocat. Behav. 108, 108–120.
Van Patten, R.R., Bartone, A.S., 2019. The impact of mentorship, preceptors, and debriefing on the quality of program experiences. Nurse Educ. Pract. 35, 63–68.
Vázquez-Calatayud, M., Eseverri-Azcoiti, M.C., 2023. Retention of newly graduated registered nurses in the hospital setting: a systematic review. J. Clin. Nurs. 32 (19/20), 6849–6862.
Viviani, C., Bravo, G., Lavallière, M., Arezes, P., Martínez, M., Dianat, I., Bragança, S., Castellucci, H., 2021. Productivity in older versus younger workers: a systematic literature review. Work 68 (3), 577–618.
Voit, K., Carson, D.B., 2012. Retaining older experienced nurses in the Northern Territory of Australia: a qualitative study exploring opportunities for post-retirement contributions. Rural Remote Health 12 (2), 1–10.
Voit, K., Carson, D.B., 2014. Post-retirement intentions of nurses and midwives living and working in the Northern Territory of Australia. Rural Remote Health 14 (3).
Waitzman, E., 2022. Staff Shortages in the NHS and Social Care Sectors. In Focus, House of Lords Library.
Walker, L., Clendon, J., Willis, J., 2018. Why older nurses leave the profession. Kai Tiaki Nursing Research 9 (1), 5–11.
Wang, H., English, M., Chakma, S., Namedre, M., Hill, E., Nagraj, S., 2022. The roles of physician associates and advanced nurse practitioners in the National Health Service in the UK: a scoping review and narrative synthesis. Hum. Resour. Health 20 (1), 69.
Wanous, J.P., Poland, T.D., Premack, S.L., Davis, K.S., 1992. The effects of met expectations on newcomer attitudes and behaviors: a review and meta-analysis. J. Appl. Psychol. 77 (3), 288.
Warburton, J., Moore, M.L., Clune, S.J., Hodgkin, S.P., 2014. Extrinsic and intrinsic factors impacting on the retention of older rural healthcare workers in the north Victorian public sector: a qualitative study. Rural Remote Health 14 (3).
Wargo-Sugleris, M., Robbins, W., Lane, C.J., Phillips, L.R., 2018. Job satisfaction, work environment and successful ageing: determinants of delaying retirement among acute care nurses. J. Adv. Nurs. 74 (4), 900–913.
Weaver, R., Ferguson, C., Wilbourn, M., Salamonson, Y., 2014. Men in nursing on television: exposing and reinforcing stereotypes. J. Adv. Nurs. 70 (4), 833–842.
Whitehead, B., Owen, P., Holmes, D., Beddingham, E., Simmons, M., Henshaw, L., Barton, M., Walker, C., 2013. Supporting newly qualified nurses in the UK: a systematic literature review. Nurse Educ. Today 33 (4), 370–377.
Whiting, L., O'Grady, M., Whiting, M., Petty, J., 2020. Factors influencing nurse retention within children's palliative care. J. Child Health Care 1367493520971426.
Wilkinson, S., Hayward, R., 2017. Band 5 nurses' perceptions and experiences of professional development. Nurs. Manage. 24 (2).
Williams, C., 2018. Recruiting middle school students into nursing: An integrative review. Nurs. Forum 53 (2), 142–147.
Williams, C., Dickstein-Fischer, L., 2019. School counsellors' perceptions of necessary attributes of middle and high school students interested in a career in nursing. Nurs. Educ. Perspect. 40 (1), 30–34.
Williams, K., Westera, A.B., Fildes, D.L., Salamonson, Y., Halcomb, E.J., Thompson, C.J., 2019. Topic 2: Nursing as a Career Choice.
Williamson, G.R., Health, V., Proctor-Childs, T., 2013. Vocation, friendship and resilience: a study exploring nursing student and staff views on retention and attrition. Open Nurs. J. 7, 149–156.
Williamson, L., Burog, W., Taylor, R.M., 2022. A scoping review of strategies used to recruit and retain nurses in the health care workforce. J. Nurs. Manag. 30 (7), 2845–2853.
Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D., Ditlopo, P., 2008. Motivation and retention of health workers in developing countries: a systematic review. BMC Health Serv. Res. 8, 1–8.
Wolford, J., Hampton, D., Tharp-Barrie, K., Goss, C., 2019. Establishing a nurse residency program to boost new graduate nurse retention. Nurs. Manage. 50 (3), 44–49.
Wray, J., Barrett, D., Aspland, J., Gardiner, E., 2012. Staying the course: factors influencing pre-registration nursing student progression into year 2 -a retrospective cohort study. Int. J. Nurs. Stud. 49 (11), 1432–1442.
Wray, J., Aspland, J., Barrett, D., Gardiner, E., 2017. Factors affecting the programme completion of pre-registration nursing students through a three-year course: a retrospective cohort study. Nurse Educ. Pract. 24, 14–20.
Wu, L.T., Low, M.M., Tan, K.K., Lopez, V., Liaw, S.Y., 2015. Why not nursing? A systematic review of factors influencing career choice among healthcare students. Int. Nurs. Rev. 62 (4), 547–562.
Wu, L.T., Wang, W., Holroyd, E., Lopez, V., Liaw, S.Y., 2018. Factors deterring dentistry, medical, pharmacy, and social science undergraduates from pursuing nursing as a healthcare career: a cross-sectional study in an Asian university. BMC Med. Educ. 18 (1), 1–9.
Wu, T.Y., Fox, D.P., Stokes, C., Adam, C., 2012. Work-related stress and intention to quit in newly graduated nurses. Nurse Educ. Today 32 (6), 669–674.
Yarbrough, S., Martin, P., Alfred, D., McNeill, C., 2017. Professional values, job satisfaction, career development, and intent to stay. Nurs. Ethics 24 (6), 675–685.
Yi, M., Keogh, B., 2016. What motivates men to choose nursing as a profession? A systematic review of qualitative studies. Contemp. Nurse 52 (1), 95–105.
Yilmaz, A.A., Ilce, A., Cicek, S.C., Yuzden, G.E., Yigit, U., 2016. The effect of a career activity on the students' perception of the nursing profession and their career plan: a single-group experimental study. Nurse Educ. Today 39, 176–180.
Yu, M., Kang, K.J., 2016. Factors affecting turnover intention for new graduate nurses in three transition periods for job and work environment satisfaction. J. Contin. Educ. Nurs. 47 (3), 120–131.
Yu, M., Lee, H., 2018. Impact of resilience and job involvement on turnover intention of new graduate nurses using structural equation modeling. Jpn. J. Nurs. Sci. 15 (4), 351–362.
Zamanzadeh, V., Valizadeh, L., Negarandeh, R., Monadi, M., Azadi, A., 2013. Factors influencing men entering the nursing profession, and understanding the challenges faced by them: Iranian and developed countries' perspectives. Nurs. Midw. Stud. 2 (4), 49.
Zambas, S.I., Dutch, S., Gerrard, D., 2020. Factors influencing Māori student nurse retention and success: An integrative literature review. Nurse Educ. Today 91, 1–10.
Zampieron, A., Buja, A., Dorigo, M., Bonso, O., Corso, M., 2012. A comparison of student motivation in selecting bachelors of nursing or paediatric nursing at an Italian university. Int. Nurs. Rev. 59 (4), 525–531.
Zhang, Y., Wu, J., Fang, Z., Zhang, Y., Wong, F.K.Y., 2017. Newly graduated nurses' intention to leave in their first year of practice in Shanghai: a longitudinal study. Nurs. Outlook 65 (2), 202–211.
Zhang, Y.-p, Huang, X., Xu, S.-y., Xu, C.-j., Feng, X.-q., Jin, J.-f, 2019. Can a one-on-one mentorship program reduce the turnover rate of new graduate nurses in China? A longitudinal study. Nurse Educ. Pract. 40, 1–8.
Zheng, R.X., Everett, B., Glew, P., Salamonson, Y., 2014. Unravelling the differences in attrition and academic performance of international and domestic nursing students with English as an additional language. Nurse Educ. Today 34 (12), 1455–1459.