

Review

The impact of care experience prior to commencing pre-registration nurse education and training: A scoping review

Sarah E. Field-Richards^{a,*}, Aimee Aubeeluck^a, Patrick Callaghan^b, Philip Keeley^c, Sarah A. Redsell^a, Helen Spiby^a, Gemma Stacey^d, Joanne S. Lymn^a

^a School of Health Sciences, University of Nottingham, United Kingdom of Great Britain and Northern Ireland

^b School of Applied Sciences, London South Bank University, United Kingdom of Great Britain and Northern Ireland

^c School of Nursing and Midwifery, Keele University, United Kingdom of Great Britain and Northern Ireland

^d Florence Nightingale Foundation, London, United Kingdom of Great Britain and Northern Ireland



ARTICLE INFO

Keywords:

Compassion
Educational policy
Pre-registration nurse education
Prior care experience
Scoping review
Francis Report
6Cs

ABSTRACT

Objectives: Compassion in nursing and interventions to support it are of international relevance and concern. Prior care experience as a prerequisite for entry into pre-registration nurse education is suggested as a means of improving compassion. The impact of prior care experience has not been comprehensively reviewed, therefore the potential effectiveness of prior care experience as a means of improving compassion is unknown. The scoping review question was ‘What is known about the impact of care experience prior to commencing pre-registration nurse education and training?’ The primary objective was to scope and synthesise existing literature relating to the topic and ascertain key themes pertaining to impact. A secondary objective was to appraise literature, to contextualise findings and assess the state and stage of knowledge and research in the area.

Design: The review was guided by Arksey and O’Malley’s methodological framework and is reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews Checklist.

Data sources: Health sciences databases CINAHL, Medline and PubMed.

Methods: Databases were searched in February 2019, updated August 2021. Data (study characteristics, findings, methodological observations) were extracted from papers meeting inclusion criteria (including peer-reviewed empirical papers with English language, electronic full-text available) and findings thematically analysed.

Results: Forty-five papers from 14 countries were included. The majority (64.4 %) were published in Europe (31.1 % in the United Kingdom) between 2010 and 2021 (69 %), 60 % from 2013. Four qualitative themes (compassionate care, commitment, competence and communication) describe the impact of prior care experience, which was variable.

Conclusions: Evidence to support the effectiveness of prior care experience as a prerequisite for entry into nurse education to improve compassion, is inconsistent and insufficient. The literature displays methodological limitations and conclusions should be interpreted in light of these caveats. Recommendations are made for future research, to improve quality and comparability.

1. Introduction

Compassion in nursing and interventions to support it are of international relevance and concern (Sinclair et al., 2017; Blomberg et al., 2016). Following the identification of failings in care quality in the United Kingdom (UK), Francis (2013) and the Department of Health [DoH] (2013a) recommended that prior experience of caring (or prior

care experience [PCE]) form a prerequisite for entry into pre-registration nurse education, as a means of improving compassion in nursing. This recommendation was reiterated by the DoH (2013b) alongside the values and behaviours of the 6Cs (Care, Compassion, Competence, Communication, Courage and Commitment, defined by the DoH (2012)), as a strategy and vision for ‘Compassion in Practice’.

Whilst the notion that PCE can promote compassion among aspirant

* Corresponding author at: School of Health Sciences, University of Nottingham, Queen’s Medical Centre, Nottingham NG7 2HA, United Kingdom of Great Britain and Northern Ireland.

E-mail address: sarah.fieldrichards@nottingham.ac.uk (S.E. Field-Richards).

<https://doi.org/10.1016/j.nedt.2022.105625>

Received 4 May 2022; Received in revised form 17 October 2022; Accepted 3 November 2022

Available online 9 November 2022

0260-6917/© 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

student nurses holds 'intuitive plausibility' (Snowden et al., 2015:156) - by providing the opportunity for developing and/or 'testing' compassionate values and behaviours, the PCE recommendation has stimulated widespread critical debate. Summarised by the UK Council of Deans of Health (2013), criticisms include that it is predicated on a number of unsubstantiated implicit assumptions (e.g. students do not currently undertake PCE and lack compassion 'as standard') and the appropriateness of an individually focused intervention, amidst recognition of organisational, cultural and system influences on compassion, is questioned.

Crucially, to the authors' best knowledge, the evidence base surrounding the impact of care experience prior to commencing pre-registration nurse education has not been comprehensively reviewed. The appropriateness and effectiveness of PCE as an intervention to support compassion and address international concern surrounding nursing care quality, therefore remains unknown. This scoping review, conducted as part of a national study exploring the impact of PCE on pre-registration nursing students' compassionate skills, values and behaviours, addresses this knowledge gap.

2. Review question and objectives

Review question: What is known about the impact of care experience prior to commencing pre-registration nurse education and training?

Primary objective: To scope and synthesise existing literature relating to the topic of care experience prior to commencing pre-registration nurse education and training, and ascertain key themes pertaining to impact.

Secondary objective: To critically appraise literature relevant to the impact of care experience prior to commencing pre-registration nurse education and training, to contextualise review findings and assess the current state and stage of knowledge and research.

3. Methods

A scoping review is appropriate for exploring a body of literature that has not been comprehensively reviewed and focuses on a complex and heterogeneous topic, unamenable to a systematic review design (Peters et al., 2015). Scoping reviews do not require well-defined questions or concentration on particular study designs, thus accommodating the broad, encompassing focus on 'the impact of prior care experience' (Arksey and O'Malley, 2006). A scoping review is also consistent with ascertaining the volume and scope of emerging PCE literature, providing an overview of its content and focus, rather than reviewing a limited range of quality appraised studies (Munn et al., 2018, Arksey and O'Malley, 2006).

To promote rigour and transparency, the review was guided by Arksey and O'Malley's (2006) five stage methodological framework for conducting scoping reviews and reporting adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018). Stage 1 involved formulating the review question (above) and Stage 2, identification of relevant studies, discussed next.

3.1. Databases and search criteria

Three health sciences databases (CINAHL, Medline, PubMed) were searched (by contributor NS) in February 2019, updated August 2021 (by SFR), using the following search criteria in title or abstract:

(Nurs AND Student) AND {(Previous OR Prior) OR (Car* AND Experience)}*

Searches were broad to maximise capture of papers relevant to the review question. Although interest in PCE has arisen predominantly within the context of compassion, the notion of 'impact' as outcome was

not further defined or specified a priori within search or inclusion criteria. The review was not therefore confined to compassion or any specific predetermined outcome, allowing for a more comprehensive assessment of the impact of PCE. 'Prior care experience' was defined according to the parameters identified in inclusion criteria (Fig. 1). This working definition was deliberately and necessarily broad, as consideration of if and how the existing literature conceived of PCE was considered to be an integral part of addressing the question and objectives of the review. As a first review of the literature, it was considered important not to approach the review with preconceived, potentially limiting ideas as to definition of an emerging concept, risking exclusion of papers offering potentially valuable insights. Where available, searches were limited to human research, English language, were not subjected to date restriction (aside from when updating searches in 2021 from 2019), duplicate papers were electronically removed and searches managed using EndNote software. Searches retrieved 4474 papers in total.

3.2. Screening and eligibility

Stage 3 involved study selection via screening of search results. Abstracts were read to ascertain whether papers met inclusion criteria, designed to facilitate maximum capture of papers relevant to the review question.

Papers meeting all criteria were included in the review (n = 45). Full-texts were accessed and read where abstracts were unavailable or did not provide sufficient detail to adequately assess eligibility. Screening was performed by SFR, and SFR, JL and GS formed a consultation group, assessing eligibility if ambiguity remained following full-text reading.

3.3. Data extraction (charting)

Stage 4 involved charting data from included papers. We employed a 'descriptive-analytical' method, applying a 'common analytical framework' to standardise information collected (Arksey and O'Malley, 2006:26). Full-texts were read independently by SFR and GS (initial search), SFR and JL (updated search), and study characteristics data extracted (Table 1). Findings relevant to the review question and methodological observations were also extracted. Consistent with scoping review guidance (e.g. Peters et al., 2015, Arksey and O'Malley, 2006), methodological quality was not systematically appraised using a formal framework. However during the review process, common methodological issues presented challenges in terms of operationalising inclusion criteria and assessing eligibility, influenced study findings themselves (and in turn review findings) and served to indicate the state and stage of the literature more broadly. These general methodological observations were therefore noted, collated into themes and are presented in the discussion, to contextualise review findings and contribute to the appraisal of the overall state and stage of literature, in accordance with the secondary review objective. Quality appraisal in the context of this scoping review therefore constituted an emergent process.

3.4. Data analysis and synthesis

During the final stage, we produced a narrative account as a means of collating and synthesising review findings for reporting, combining quantitative descriptive characteristics (frequency analysis of study characteristics) and qualitative themes.

Findings extracted from papers were subjected to an inductive, data-driven thematic analysis to identify themes and subthemes within and across papers (Braun and Clarke, 2006). This process was conducted independently by SFR and GS, and themes were collectively verified through discussion between SFR, GS and JL. This process was repeated by SFR and JL when updating the search. Although an analytical framework was not imposed on data during extraction or analysis, themes identified could be grouped according to the 6Cs (DoH, 2012),

- Published, peer-reviewed, empirical paper
- English language version available
- Full-text electronically accessible
- Incorporates a *specific focus on care experience, prior to commencing pre-registration nurse education and training*
 - 'Care experience' in the context of providing (rather than receiving) care
 - 'Care experience' must not indicate solely academic preparation
- For mixed-sample papers, findings can be deciphered in relation to nursing-relevant participants

Fig. 1. Inclusion criteria.

which were therefore used as an interpretive framework, forming the basis for reporting of review findings. Whilst it is acknowledged that the 6Cs is a UK centric framework, this is not considered to be methodologically problematic within this international review, as the framework was applied *a posteriori*, used to organise and interpret (rather than analyse) data only. As a consequence, analysis was not limited to findings relevant to the 6Cs, instead being attentive to any impacts documented within the literature (as per the review question). Following analysis however, findings (already extracted from papers, without any analytical framework) could be seen to mirror components of the 6Cs, which were therefore considered an appropriate means of interpreting and organising data, especially given the consistency with the 'compassion' context surrounding PCE.

4. Findings

45 papers were included in the review. Fig. 2 identifies outcomes at each stage of the search process.

4.1. Study characteristics

Identified in Table 2, the majority of research was quantitative (69%), with studies stemming from 14 different countries, demonstrating the international nature of PCE literature. The majority of research (64.4%) was conducted in Europe, of which 31.1% originated from the UK, with 69% of papers published between 2010 and 2021 and 60% from 2013 onwards, illustrating the international emphasis on PCE following Francis' (2013) recommendation.

4.2. Thematic findings

Insights into the impact of PCE are reported in accordance with the 6Cs (Care and Compassion [reported as compassionate care], Competence, Communication, Courage and Commitment). No findings were identified regarding the impact of PCE on courage however. Whilst meeting inclusion criteria and incorporating a specific focus on care experience prior to commencing pre-registration nurse education and training, 12 studies (Table 1 papers marked *) did not identify any findings relevant to the impact of PCE to report (see discussion 'Level and consistency of focus').

4.3. Compassionate care

Several papers incorporated a focus on the impact of PCE on student attitudes and intentions or willingness to work with certain patient populations. Whilst some studies suggested that students with PCE held more positive attitudes towards, or indicated a greater willingness to

work with, specific groups (Biordi and Oermann, 1993 – individuals with physical disabilities, Haron et al., 2013 – older people, Lundh Hagelin et al., 2016 – dying patients), this was not replicated in others (Scheffler, 1995, Dellasega and Curriero, 1991, Carlson and Idvall, 2015 – all older people), suggesting that the impact of PCE on attitudes towards, and intentions and willingness to work with, certain patient populations is not uniform.

Fernández Trinidad et al. (2019) report that PCE had a significant influence on perceptions of caring. The association of caring with psychosocial aspects was greater in students with PCE than those without, who emphasised professional-technical aspects of care. This is hypothesised to be due to interprofessional working during PCE assisting with perceptual integration of psychosocial aspects, contrasted with a lack of direct patient contact among individuals without PCE. Knowledge of PCE status and influence on caring perceptions may therefore assist in pedagogical guideline development.

Other research focused on the impact of PCE on caring more directly. Lim et al. (2004) found that PCE had no impact on students' perception of self-efficacy in undertaking transcultural care, but influenced experience caring for dying patients (Hall-Lord et al., 2018). Evidence from Murphy (2009:262) suggests that although students have caring behaviours 'in abundance' at course entry, they decline through training, exaggerated in students without PCE. Murphy et al. (2009) posits that this is due to occupational and/or educational socialisation and realisation that views of caring are idealistic. Scammell et al. (2017:218) found that overall, most nursing values 'were not significantly affected' by PCE. Whilst those with PCE were more aware of care delivery challenges, students with and without PCE did not express caring values differently at training entry. The authors conclude that their research questions the value of mandating PCE as a means of consolidating caring values ahead of training, highlighting that evidence to support the link between PCE and values is lacking. They also suggest that mandating formal PCE undermines life experience, innate values and the influence of organisational culture on their expression, therefore supporting resilience conducive to the maintenance of caring values should instead be promoted.

Relevant to patient safety, Weeks et al. (2021) explored clinical alarm fatigue, with alarm sensitivity declining through training. No statistically significant differences between students with and without PCE were found at timepoints 1–3 and 5, however at timepoint 4, those with PCE were significantly less sensitive to alarms than those without. The authors conclude that clinical exposure can desensitise and lead to alarm ignoring, with negative patient safety implications. Similarly, Bordignon et al. (2019) report desensitising in relation to moral sensitivity. Students with PCE reported lower moral distress associated with ethical dimensions of care than students without PCE, suggesting that compliance with practice established during PCE may lead to

Table 1
Data extracted and charted from included studies, employing a common analytical framework.

Authors	Title	Year of publication	Country of origin	Broad methodology and methods	Sample
Axelsson, M., Jakobsson, J., Carlson, E.	Which nursing students are more ready for interprofessional learning? A cross-sectional study	2019	Sweden	Quantitative. Cross-sectional survey (Readiness for Interprofessional Learning Scale and Neuroticism, Extraversion and Openness to Experience Five Factor Inventory)	284 nursing students (years 1 and 3)
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.*	Late dropout from nursing education: An interview study of nursing students' experiences and reasons	2019	Netherlands	Qualitative. Semi-structured interviews	11 former nursing students who exited the Bachelor of Nursing programme in either year 3 or 4
Benedetto, V., Whittaker, K., Wilson, N., Storey, H., Daune, D.*	Accelerated programmes in children's nursing to tackle the workforce gap in the United Kingdom: A cost consequence analysis	2020	United Kingdom	Economic evaluation	20 nursing students. 10 registered adult or mental health nurses undertaking a 1-year children's nursing course. 10 graduates with a degree in child or social care enrolled in year 2 of a 3-year Master's course in children's nursing
Biordi, B., Oermann, M.H.	The effect of prior experience in a rehabilitation setting on students' attitudes toward the disabled	1993	United States of America	Quantitative. Longitudinal survey (Attitudes toward Disabled Persons)	225 Baccalaureate nursing students ('enrolled in different levels')
Bordignon, S.S., Lunardi, V. L., Barlem, E.L.D., Dalmolin, G.L., da Silveira, R.S., Ramos, F.R.S., Barlem, J.G.T.	Moral distress in undergraduate nursing students	2019	Brazil	Quantitative. Cross-sectional survey (Moral Distress Scale for Nursing Students)	499 undergraduate nursing students (all years)
Brennan, G., McSherry, R.	Exploring the transition and professional socialisation from health care assistant to student nurse	2007	United Kingdom	Qualitative. Focus groups	14 adult nursing students (across all years)
Bruce, M., Omne-Ponten, N. M., Gustavsson, P. J.	Active and emotional student engagement: a nationwide, prospective, longitudinal study of Swedish nursing students	2010	Sweden	Quantitative. Longitudinal survey	1334 nursing students (participated across all three years)
Carlson, E., Idvall, E.	Who wants to work with older people? Swedish student nurses willingness to work in elderly care – A questionnaire study	2015	Sweden	Quantitative. Cross-sectional survey (Clinical Learning Environment and Nurse Teacher Evaluation Scale)	183 first year nursing students
DeKeyser Ganz, F., Kahana S.*	Perceptions of Israeli student nurses regarding clinical specialities and factors that influence these perceptions	2006	Israel	Quantitative. Longitudinal survey	178 generic Baccalaureate nursing students in first, third and fourth year
Dellasega, C., Curriero, F.C.	The effects of institutional and community experiences on nursing students' intentions toward work with the elderly	1991	United States of America	Quantitative. Longitudinal survey (derived from Nursing Speciality Preference and Work Preference)	39 junior Baccalaureate nursing students
Fernández Tinidad, M., González Pascual, J.L., Rodríguez García, M	Perception of caring among nursing students: Results from a cross-sectional survey	2019	Spain	Quantitative cross-sectional survey (Caring Dimensions Inventory [CDI-25])	321 nursing students (all years)
Fowler, J., Norrie, P.*	Development of an attrition risk prediction tool	2009	United Kingdom	Mixed methods. Cross-sectional survey, interviews and analysis of student records.	605 student nurses (across years and branches) and midwives (Diploma or Degree). 35 lecturers
Hallam, K.T., Livesey, K., Morda, R., Sharples, J., Jones, A., de Courten, M.	Do commencing nursing and paramedicine students differ in interprofessional learning and practice attitudes: evaluating course, socio-demographic and individual personality effects	2016	Australia	Quantitative. Cross-sectional survey (General Perceived Self Esteem Scale, International Mini Markers, Attitudes Towards Health Care Teams Scale, Interprofessional Education Perception Scale)	160 first year nursing students, 50 first year paramedicine students
Hallin, K., Bäckström, B., Häggström, M., Kristiansen, L.	High-fidelity simulation: Assessment of student nurses' team achievements of clinical judgement	2016	Sweden	Quantitative. Cross-sectional survey (Lasater Clinical Judgment Rubric)	174 final year Bachelor of Science nursing students
Hall-Lord, M.L., Petzäll, K., Hedelin, B.	Norwegian and Swedish nursing students' concerns about dying	2018	Norway, Sweden	Mixed methods. Cross-sectional survey (Concerns about Dying and Sense of Coherence Scale) followed by semi-structured interviews	64 Norwegian nursing students, 79 Swedish nursing students (participated in first and final year)
Haron, Y., Levy, S., Albagli, M., Rotstein, R., Riba, S.	Why do nursing students not want to work in geriatric care? A national questionnaire survey	2013	Israel	Quantitative. Cross-sectional survey	486 final year Diploma or 'academic nursing qualification' students
Hasson, F., McKenna, H.P., Keeney, S.*	Delegating and supervising unregistered professionals: The student nurse experience	2013a	United Kingdom	Mixed methods. Focus groups and interviews followed by cross-sectional survey.	45 undergraduate Degree nursing students phase 1, 662 undergraduate Degree nursing students phase 2 – all year groups
		2013b			

(continued on next page)

Table 1 (continued)

Authors	Title	Year of publication	Country of origin	Broad methodology and methods	Sample
Hasson, F., McKenna, HP., Keeney, S.*	A qualitative study exploring the impact of student nurses working part time as a healthcare assistant		United Kingdom	Qualitative. Focus groups and interviews.	45 undergraduate Degree nursing students – all year groups
Houghton, CE., Casey, D., Shaw, D., Murphy, K	Students' experiences of implementing clinical skills in the real world of practice	2013	Ireland	Qualitative. Multiple case studies incorporating focus groups and non-participant observation	10 first year undergraduate nursing students, 10 third and fourth year undergraduate nursing students. 23 clinical staff
Kevern, J., Ricketts, C., Webb, C.*	Pre-registration diploma students: A quantitative study of entry characteristics and course outcomes	1999	United Kingdom	Quantitative. Student record data	335 second and third year nursing Diploma students, all branches
Kiner, H.P.	Nursing students opinions on interpersonal violence	1995	United States of America	Quantitative. Cross-sectional survey	All associate degree programme nursing students – no information provided in relation to number of participants
Land, L.M.	The student nurse selection experience: a qualitative study	1994	United Kingdom	Qualitative. Focus groups	13 nursing students (7 Registered General Nurse certificated course, 6 Project 2000 course), all years. 6 staff members
Lees, S., Ellis, N.	The design of a stress-management programme for nursing personnel	1990	United Kingdom	Mixed methods. Semi-structured interviews and cross-sectional surveys (16PF Personality Questionnaire, Assertion Inventory, Revised Ways of Coping Questionnaire, Culture-Free Self-Esteem Inventory)	20 nursing students (all year groups), 20 qualified nurses, 13 ex-students who had recently left the nursing course
Lim, J., Downie, J., Nathan P.	Nursing students' self-efficacy in providing transcultural care	2004	Australia	Quantitative. Cross-sectional survey (Transcultural Self-Efficacy Tool)	196 undergraduate nursing students (first and fourth year)
Lundh Hagelin, C., Melin-Johansson, C., Henoch, I., Bergh, I., Ek, K., Hammarlund, K., Prahl, C., Strang, S., Westin, L., Österlind, J., Browall M.	Factors influencing attitude toward care of dying patients in first-year nursing students	2016	Sweden	Quantitative. Cross-sectional survey (Frommelt Attitude Towards Care of the Dying Scale)	371 first year Bachelor of Science in nursing students
Mackintosh, C.	Caring: The socialisation of pre-registration student nurses: A longitudinal qualitative descriptive study	2006	United Kingdom	Qualitative. Longitudinal semi-structured interviews	Sample given as 16 nursing students but paper relates to 13 participants interviewed at both first and second time-points (first and final year of training)
McKeever, S., Whiting, L., Anderson, D., Twycross, A.*	Causes of Attrition in Children's NursinG (CATCHING): An exploratory mixed method study	2018	United Kingdom	Mixed methods. Student record analysis followed by semi-structured interviews	13 nursing students, 5 ex-nursing students, all child branch Bachelor of Science or postgraduate Diploma
McNelis, A.M., Wellman, D. S., Splann Krothe, J., Hrisomalos, D.D., McElveen, J.L., South, R.J.*	Revision and evaluation of the Indiana University School of Nursing Baccalaureate admission process	2010	United States of America	Quantitative. Cross-sectional survey (self-developed to measure perceptions of new admission process)	165 nursing applicants, 45 faculty staff
Moe, C.S.	Relationship of ethical knowledge to action in senior baccalaureate nursing students	2018	United States of America	Quantitative. Cross-sectional survey (incorporating Keteflan's Judgments About Nursing Decisions)	172 senior Baccalaureate nursing students
Muhsin, A.A., Munyogwa, M. J., Kibusi, S.M., Seif, S.A.*	Poor level of knowledge on elderly care despite positive attitude among nursing students in Zanzibar Island: findings from a cross-sectional study	2020	Tanzania	Quantitative. Cross sectional survey (Facts on Ageing Quiz 2 and Kogan's Attitudes Toward Older People scale)	393 second and third year nursing students
Murphy, F., Jones, S., Edwards, M., James, J., Mayer, A.	The impact of nurse education on the caring behaviours of nursing students	2009	United Kingdom	Quantitative. Cross-sectional survey (incorporated Caring Behaviours Inventory and Dimensions of Nurse Caring)	80 first year undergraduate nursing students, 94 third year undergraduate nursing students. All adult, mental health or child branch
O'Brien, F., Mooney, M., Glacken, M.	Impressions of nursing before exposure to the field	2008	Ireland	Qualitative. Focus groups	23 first year nursing students
Rainbow, J.G., Steege, L.M.*	Transition to practice experiences of first- and second-career nurses: A mixed –methods study	2019	United States of America	Mixed methods. Qualitative interviews, quantitative longitudinal survey (perceptions of stress, coping & burnout throughout first year of nursing practice)	First and second career nurses in their first year of nursing practice. Interviews $n = 15$, survey $n = 22$.
Rosenberg, A., Lunde Husebe, A.M., Laugaland, K.A., Aase, I.	Nursing students' experiences of the clinical learning environment in Norwegian nursing homes: a cross-sectional study	2019	Norway	Quantitative. Cross-sectional survey (Clinical Learning Environment, Supervision and Nurse Teacher [CLES+T] evaluation scale)	155 first year Bachelor of nursing students who had completed an 8 week placement in a nursing home
Scammell, J., Tait, D., White, S., Tait, M.	Challenging nurse student selection policy. Using a lifeworld approach to explore the link between care experience and student values	2017	United Kingdom	Mixed methods. Survey - values clarification exercise	161 undergraduate first year adult branch nursing students

(continued on next page)

Table 1 (continued)

Authors	Title	Year of publication	Country of origin	Broad methodology and methods	Sample
Sheffler, S.J.	Do clinical experiences affect nursing students' attitudes toward the elderly?	1995	United States of America	Quantitative. Cross-sectional survey (Kogan's Attitude Toward Old People Scale, Palmore's Facts on Aging Quiz)	140 Associate Degree nursing students
Skoglund, K., Holmström, I. K., Sundler, A.J., Marmstål Hammar, L.	Previous work experience and age do not affect final semester nursing student self-efficacy in communication skills	2018	Sweden	Quantitative. Survey (Self-efficacy Questionnaire)	237 first or third year Bachelor of Science nursing students
Štiglic, G., Cilar, L., Noval, Z., Vrbnjak, D., Stenhouse, R., Snowden, A., Pajnkihar, M.	Emotional intelligence among nursing students: Findings from a cross-sectional study	2018	Slovenia	Quantitative. Cross-sectional survey (Trait Emotional Intelligence Questionnaire, Schutte Self Report Emotional Intelligence Test)	113 first year undergraduate Diploma nursing students, 104 first year undergraduate engineering students
Stombaugh, A., Judd, A.	Does nursing assistant certification increase nursing student's confidence level of basic nursing care when entering a nursing program?	2014	United States of America	Quantitative. Cross-sectional survey (self-developed measuring confidence levels)	156 first year Baccalaureate nursing students
Vierula, J., Hupli, M., Engblom, J., Laakkonen, E., Talman, K., Haavisto, E.	Nursing applicants' reasoning skills and factors related to them: A cross-sectional study	2021	Finland	Quantitative. Cross-sectional survey (The Reasoning Skills [ReSki] test Positive System Usability Scale [P-SUS])	1056 undergraduate nursing applicants
Weeks, K., Timalonis, J., Donovan, L.	Does alarm fatigue start in nursing school?	2021	United States of America	Quantitative. Longitudinal survey (5-item Likert scale examining sensitivity to common hospital alarm noises)	89 undergraduate nursing students
Worthington, M., Salamonsen, Y., Weaver, R., Cleary, M.	Predictive validity of the Macleod Clark Professional Identity Scale for undergraduate nursing students	2013	Australia	Quantitative. Cross-sectional survey (Macleod Clark Professional Identity Scale) and student record data	540 first year Bachelor of Nursing students
Wray, J., Aspland, J., Barrett, D., Gardiner, E.*	Factors affecting the programme completion of pre-registration nursing students through a three year course: A retrospective cohort study	2017	United Kingdom	Quantitative. Retrospective cohort study. Student record data	725 undergraduate nursing student records
Wray, J., Barrett, D., Aspland, J., Gardiner, E.	Staying the course: Factors influencing pre-registration nursing student progression into Year 2 – A retrospective cohort study	2012	United Kingdom	Quantitative. Retrospective cohort study. Student record data	695 undergraduate nursing student records
Zampieron, A., Buja, A., Dorigo, M., Bonso, O., Corso, M.	A comparison of student motivation in selecting bachelors of nursing or paediatric nursing at an Italian university	2012	Italy	Quantitative. Cross-sectional survey	215 Bachelor in Science of Nursing or Bachelor in Paediatric Science of Nursing students (all years)

trivialisation of moral and ethical problems. Through a process of enculturation to poor practice, moral sensitivity, recognition and acknowledgement of issues as moral problems (rather than incorrigible features of health and education systems) may be eroded, resulting in less moral distress.

Further literature suggests that emotional intelligence, considered 'logically consistent' with relational and social aspects of nursing (Snowden et al., 2015:158), is not associated with PCE (Štiglic et al., 2018). In relation to Francis' (2013) recommendation, Štiglic et al. (2018:37) conclude that it is yet to be proven that individuals with PCE are 'better in their job'.

4.4. Commitment

Several studies focused on the role of PCE in nursing course attrition. PCE appears logically associated with attrition on the basis that individuals without PCE are unprepared, have little or inaccurate knowledge of nursing reality and experience disappointment when nursing does not meet expectations (Lees and Ellis, 1990; O'Brien et al., 2008). PCE may prevent attrition by allowing experience of nursing reality, informing realistic expectations prior to training (Stombaugh and Judd, 2014). This notion is not well supported empirically however.

Evidence from O'Brien et al. (2008) suggests that PCE positively influences perceptions of and motivation to study nursing, whereas not having PCE is associated with 'fear of the unknown' regarding nursing ability and whether nursing would match expectations (Mackintosh,

2006:957). Brennan and McSherry's (2007) findings suggest that PCE may not provide accurate perceptions and expectations of nursing. They identify reality shock associated with students transitioning from healthcare assistant (HCA) roles and anxiety upon realising that PCE had not prepared them for the realities of clinical practice as a student nurse, which did not match expectations - particularly for those with independent sector PCE.

A study by Land (1994) focusing on PCE in the context of nursing course selection interviews, suggests that what constitutes an 'accurate perception' of 'nursing' is highly contested and subjective. Although interviewees expected candidates to have PCE to provide insight into nursing, ideas of 'nursing', 'insight', qualities and skills required of candidates and PCE itself were contested. Education is suggested as an alternative to PCE for providing realistic insight to prevent attrition.

Evidence to support the assumption that PCE acts to prevent attrition more directly, is inconsistent. Worthington et al. (2013) found that greater levels of professional identity exhibited by students with PCE had a direct relationship with course retention, suggesting that PCE acts as pre-professional socialisation, preventing attrition. Lees and Ellis' (1990) research also identifies PCE acting as an attrition mitigator. Conversely, Wray et al. (2012) did not find a statistically significant association between PCE and retention, and Stombaugh and Judd (2014) note a lack of research confirming PCE as a predictor of nursing course success. PCE has however been associated with greater course engagement, potentially acting as an enabler for coping with stress, preventing attrition (Bruce et al., 2010).

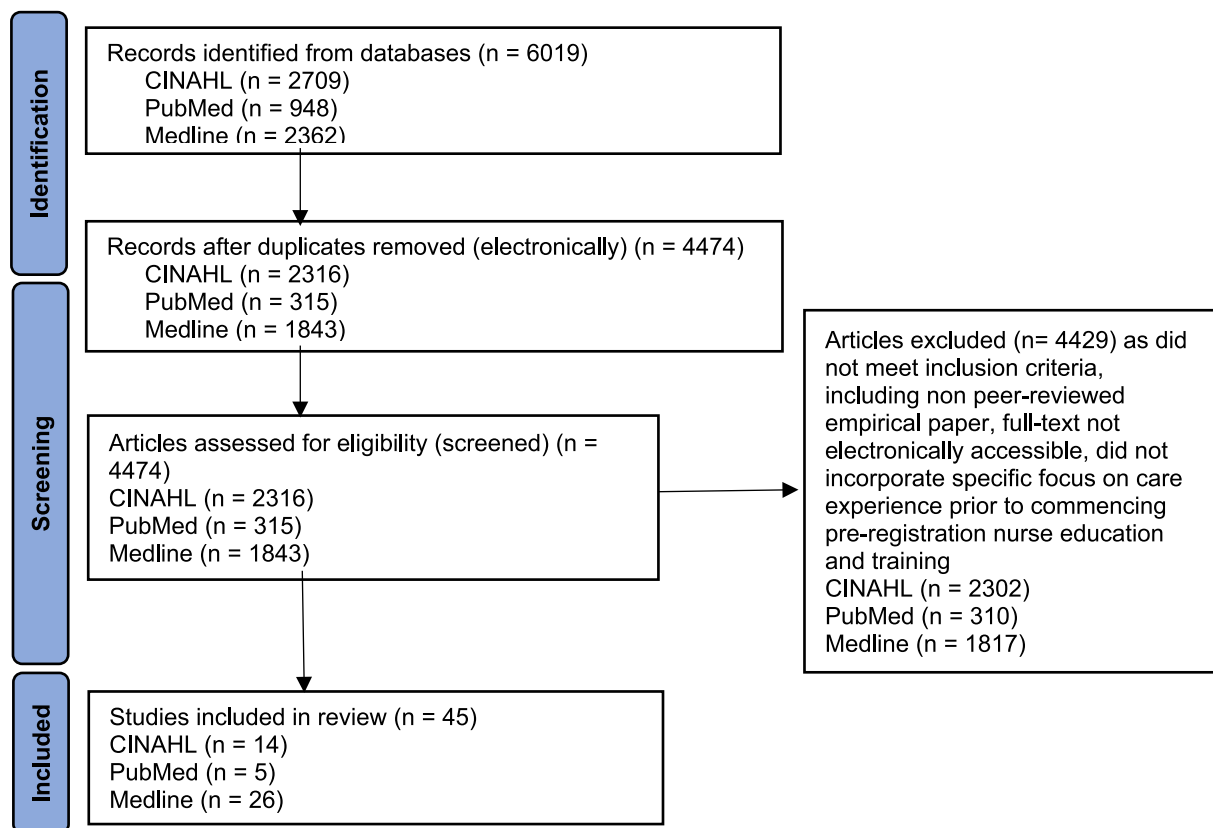


Fig. 2. Depiction and outcomes of the search process.

Table 2
Frequency analysis of study characteristics.

Study characteristics (n=45)	Count (%)
Year of publication	
1990–1999	7 (15.5 %)
2000–2009	7 (15.5 %)
2010–2019	27 (60 %)
2020–2021	4 (9 %)
Continent of origin	
Europe (United Kingdom, Sweden, Norway, Ireland, Italy, Slovenia, Spain, Netherlands, Finland)	29 (64.2 %)
North America (United States of America)	9 (20 %)
South America (Brazil)	1 (2.2 %)
Africa (Tanzania)	1 (2.2 %)
Asia (Israel)	2 (4.4 %)
Australia	3 (7 %)
Broad methodology	
Quantitative	31 (69 %)
Mixed methods	7 (15.5 %)
Qualitative	7 (15.5 %)

Zampieron et al. (2012:528) found that students with PCE were more likely to have chosen nursing as their original subject of choice, and to disagree that they had ‘shopped around’ for other courses, suggesting that PCE fostered certainty in commitment to nursing before training.

4.5. Competence

Several papers considered PCE in the context of clinical or psychosociocultural competence. Stombaugh and Judd (2014:165) suggest that incorporating PCE within pre-registration course entry requirements would ensure that students have considered their capacity to care and enter training with an analogous repertoire of skills. The authors theorised that PCE increases self-efficacy regarding patient interactions, basic care, confidence levels surrounding nursing as a career choice and overcoming challenges. However, their data suggests that students with PCE were not confident in some basic care tasks and had not been taught others, although longer PCE was associated with greater confidence. PCE did not therefore guarantee confidence or competence in basic skills. Due to lack of standardisation, the authors challenge the assumption that PCE ensures ‘an equal playing field’ and suggest that it is challenging to assess impact on confidence, competence and preparation for training.

Moe (2018:363) report the impact of PCE on the relationship between ‘knowledge of ethics’ and ‘choices of action’ in clinical situations among nursing students. Although a significant correlation was found between the two variables, PCE did not impact significantly on this. Vierula et al. (2021) found that reasoning skills scores between applicants with and without PCE were not significantly different and conclude that PCE does not necessarily include or develop complex decision-making and reasoning, and despite widespread use, findings do not support PCE use as an admission criterion.

Whilst Hallin et al.’s (2016) findings suggest that PCE does not have a significant impact on clinical judgement during high-fidelity simulation, participants with PCE in Houghton et al.’s (2013:1965) study reported more confidence in clinical and communication skills, with a positive social impact on ability to ‘fit in’ in clinical environments. This in turn facilitated learning, with clinicians more likely to teach and look favourably upon confident students. Although suggesting a positive

impact on competence, negative implications were identified by clinicians among students with PCE, regarding a tendency to revert to the 'nurse's aide' role. This reversion occurred at the expense of learning critical nursing skills and care rationale, to the extent that PCE could be considered to hinder learning.

Similarly, exploring socialisation and role transition from HCA to student nurse, Brennan and McSherry (2007) found that PCE had positive and negative effects. Students developed strategies to manage shock associated with encountering nursing reality during practice placements. Intentional reversion to the HCA role when feeling unsure or vulnerable, demonstrating abilities and promoting team acceptance, provided participants with comfort and protection. The authors also suggest that this comfort zone was utilised as a shelter, allowing escape from student pressures when lacking confidence and socialisation with HCAs, affording acceptance. Although content to perform HCA tasks during staff shortages, students reported feeling resentment at other times when compromising learning. Participants also expressed concern regarding recognition and respect on qualification, fearing that they may be perceived eternally as an HCA. The authors conclude that students with PCE encounter different challenges to those without in relation to transition and socialisation, which if unaddressed, may be detrimental rather than beneficial to learning.

Other studies also provide insights relevant to sociocultural processes and competence, through focusing on the impact of PCE on interprofessional and interpersonal working. Rosenberg et al. (2019) found that experiences of learning and the learning environment differed between students with and without PCE and supervisory relationships occupied a central explanatory role. Similar to Houghton et al. (2013) and Brennan and McSherry's (2007) findings, students with PCE reported experiencing more approval and mutual respect in supervisor relationships, which is suggested to be due to familiarity with clinical settings and possessing basic competence. The authors theorise that those with PCE may also feel more included in the healthcare team owing to experience of team-working and as a consequence of their findings, highlight the importance of student characteristics in the learning experience and individualising supervision experiences. They conclude that students possess disparate needs according to PCE status, whereby in addition to requiring more support with communication, patient safety, practical and theoretical competence, those without experience may require closer supervision in relation to interprofessional, sociocultural elements such as ethical norms and team-working.

Interpreting their finding that nursing students displayed less positive attitudes towards interprofessional practice than paramedic students (with greater PCE exposure), Hallam et al. (2016:3) suggest that PCE may promote more positive attitudes towards interprofessional practice. In a study by Axelsson et al. (2019) however, no difference was found between those with and without PCE, in relation to readiness for interprofessional learning. Regarding opinions surrounding interpersonal violence, whilst finding a 'remarkable congruency' of opinion overall, Kiner (1995:329) reports that those with PCE 'tended to agree that research, education, and legislation could help reduce violence', although the significance of this was not elaborated upon.

4.6. Communication

Consistent with Houghton et al.'s (2013) findings, PCE has been suggested to increase communication skills self-efficacy (Skoglund et al., 2018). This was an early, short-term benefit, which was not maintained however. In explaining this, the authors suggest that PCE can be compared to nurse training in teaching communication skills, accounting for higher confidence levels at training outset but a diminishing of the importance of PCE, corresponding with self-efficacy plateauing by the final semester.

5. Discussion – locating findings within a critical context

The findings of this review have illustrated the international nature of PCE literature, with a proliferation of publications following Francis's (2013) recommendation. Extant research has considered the impact of PCE in relation to a variety of outcomes relevant to themes of compassionate care, commitment, competence and communication. These outcomes include attitudes towards patient populations, perceptions of care, caring behaviours, nursing values, self-efficacy, patient safety, moral distress, emotional intelligence, attrition, career decision-making, clinical confidence, clinical and psychosocial competence. Overall, the literature suggests that PCE has a mixed and variable impact, presenting inconsistent and insufficient evidence to support the potential effectiveness of recommending PCE as a prerequisite for entry into nurse education, as a means of improving compassion in nursing as an international concern.

5.1. Limitations of the evidence base – critical methodological themes

The findings and conclusions of this paper must be interpreted in the context of limitations of the PCE evidence base and the review itself. Predicated on the critical themes derived from the methodological quality appraisal, this section discusses limitations of the PCE evidence base, and in doing so, provides an assessment of the state and stage of evidence surrounding the impact of care experience prior to commencing pre-registration nurse education and training - addressing the secondary review objective. As critical *themes*, these observations are discussed at a general level and with reference to the review process as a whole, reflecting challenges that they created during the process of reviewing the literature. Thus, we maintained a reflexive awareness of methodological challenges vis-à-vis implications for primary research data, review findings and recommendations for future research (Rees et al., 2017).

5.2. Clarity and definition of concept

The concept of 'prior care experience' appears ambiguous and ill-defined within the literature. Ascertaining the relevance of papers to the topic of PCE, as defined by review inclusion criteria, was therefore challenging. Within included papers, there existed a variety of lexical permutations of 'prior care experience', which was also changeable within individual papers. Relatedly, lack of clarity associated with the reporting of sample characteristics presented difficulties assessing paper eligibility relevant to incorporating 'a specific focus on care experience prior to commencing pre-registration nurse education and training'. Deciphering whether care experience was obtained 'prior' to training, or concurrently (through placement experience or employment), and more specifically 'pre-registration' training, was problematic, compounded by the international nature of literature and heterogeneity of training routes temporally and globally.

Similarly, 'care experience' was poorly defined and its specific nature, for example, whether it was formal/informal, paid/unpaid, participants' role, experience length and setting, was often poorly elaborated upon, difficult to decipher, varied between papers, or was not identified. In light of these conceptual issues, it would seem unlikely that study participants themselves were provided with a clear definition of 'prior care experience', necessitating individual interpretation, potentially differing from that intended by researchers and within the participant sample itself, influencing the validity and reliability of comparisons between study groups and confounding findings overall.

These features of the literature suggest that PCE cannot be considered a homogenous phenomenon and poor conceptual and lexical clarity currently renders the concept of limited value as an independent variable. This in turn holds implications for the reliability and validity (e.g. internal consistency, construct validity) and therefore comparability and generalisability, of individual papers, the evidence base more

broadly and constitutes a limitation of the literature and review itself, in terms of what can feasibly be concluded about the impact of PCE. Further, the variety of terms employed to refer to 'prior care experience', holds the implication that there may exist literature uncaptured by review search terms.

In attempt to maintain consistency and rigour in the face of these issues, whilst preventing wrongful exclusion, where ambiguity existed surrounding eligibility, papers were discussed among the consultation group until consensus was reached. Frequently, triangulation of details, inference and deduction were necessary and the principle of 'on the balance of probabilities' employed to guide decision-making where eligibility appeared likely but could not be established with 100 % certainty. Despite best efforts, poor clarity and definition of concept engenders the limitation that papers may have been wrongly included or excluded, due to (lack of) details reported and subsequent errors (e.g. of inference) in the decision-making process.

5.3. Level and consistency of focus

Whilst all included papers incorporated a specific focus on PCE according to inclusion criteria, a lack of substantial and/or sustained focus was prevalent, with a correspondingly limited insight into the impact of PCE provided, or none at all. Examples of this included tokenistic consideration of PCE as a demographic variable only, not being explored in relation to the substantive research focus, findings and/or discussion regarding PCE absent, or conversely, PCE was mentioned in research findings and/or discussion but not in earlier sections.

5.4. Prevalence of mixed-samples and confounding variables

Mixed-sample papers presented the challenge of deciphering results pertaining to the impact of PCE in relation to the nursing-relevant sample only. Mixed-samples included students from different health-care and professional courses, different nursing courses, universities and nursing students of different years of training, qualified and student nurses, those with and without PCE and those with PCE and/or concurrent care experience. Only papers where the impact of PCE pertaining to the nursing-relevant sample could be separated were included, and only findings pertaining to the nursing-relevant sample were reported. This limitation of the evidence base in turn holds the implication that further data exist in relation to the impact of PCE, uncaptured by the review, due to the inability to separate relevant data within some mixed-sample papers. It is not known whether (and how) such findings conflict with, or in other ways extend, those of this review.

Although excluding papers and findings explicitly focusing on concurrent care experience gained whilst enrolled in pre-registration training, given the prevalence of part-time employment among student nurses (Hasson et al., 2013b), it is likely that a proportion of study samples also had concurrent care experience, even where not explicitly explored, introducing a potentially significant confounding variable. Similarly, life experience (or age as proxy) may act as an additional confounder within PCE studies (O'Brien et al., 2008).

5.5. Implications and recommendations for research

The critical themes identified in this review suggest that knowledge and research pertaining to the impact of PCE occupies an early developmental stage. Predicated on these critical themes, methodological recommendations are made for future PCE research to enhance quality, comparability and utility. Acknowledging the heterogeneous nature of PCE, future studies should identify how PCE is defined and operationalised in the research context, communicating this to participants and in reporting findings. There is also a need for qualitative and quantitative research, which adopts PCE among nurses/student nurses as its substantive focus and a longitudinal view from course entry to post-qualification. Finally, studies might usefully incorporate a focus on

the impact of concurrent care experience and life experience/age as a related branch of research and consider their influence as potential confounding variables within PCE studies.

6. Conclusion

Although recommended as a potential means of improving compassion in nursing, the findings of this scoping review suggest that the impact of PCE is mixed and variable. Evidence relating to impact is inconsistent and insufficient, including that to support the recommendation of PCE as a prerequisite for entry into pre-registration nurse education and training, as a means of improving compassion in nursing, as an international concern.

The critical themes identified in this review suggest that in terms of 'state' and 'stage', knowledge and research pertaining to the impact of PCE occupies an early developmental phase. Available evidence displays significant methodological limitations, limiting research quality and comparability. Review findings and conclusions should therefore be interpreted in light of methodological caveats discussed.

This review has highlighted the complexity of researching PCE, which should be approached as a multi-faceted phenomenon associated with a plethora of variables. To improve the quality and comparability of the evidence base, future research should consider how PCE is conceptualised, the influence of confounding variables and there is a need for more substantive, longitudinal research adopting the issue of PCE among (student) nurses as its primary focus.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors would like to thank Noureen Shivji for conducting the original database searches (acknowledged and referred to in the paper as contributor NS).

This study/project is funded by the National Institute for Health Research (NIHR) [Policy Research Programme (PR-R9-0114-12005)]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

References

- Axelsson, M., Jakobsson, J., Carlson, E., 2019. Which nursing students are more ready for interprofessional learning? A cross-sectional study. *Nurs. Educ. Today* 79 (1), 117–123.
- Arksey, H., O'Malley, L., 2006. Scoping studies: towards a methodological framework. *Int. J. Soc. Res. Methodol.* 8 (1), 19–32.
- Bakker, E.J.M., Verhaegh, K.J., Kox, J.H.A.M., van der Beek, A.J., Boot, C.R.I., Roelofs, P. D.D.M., Francke, A.L., 2019. Late dropout from nursing education: an interview study of nursing students' experiences and reasons. *Nurs. Educ. Pract.* 39 (1), 17–25.
- Benedetto, V., Whittaker, K., Wilson, N., Storey, H., Daune, D., 2020. Accelerated programmes in children's nursing to tackle the workforce gap in the United Kingdom: a cost-consequences analysis. *Nurse Educ. Today* 86, 104317.
- Bjordi, B., Oermann, M.H., 1993. The effect of prior experience in a rehabilitation setting on students' attitudes toward the disabled. *Rehabil. Nurs. J.* 18, 95–98.
- Blomberg, K., Griffiths, P., Wengström, Y., May, C., Bridges, J., 2016. Interventions for compassionate nursing care: a systematic review. *Int. J. Nurs. Stud.* 62 (137–155).
- Bordignon, S.S., Lunardi, V.L., Barlem, E.L.D., de Lima Dalmolin, G., Silva da Silveira, R., Souza Ramos, F.R., Barlem, J.G.T., 2019. Moral distress in undergraduate nursing students. *Nurs. Ethics* 26 (7–8), 2325–2339.
- Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. *Qual. Res. Psychol.* 3 (2), 77–101.
- Brennan, G., McSherry, R., 2007. Exploring the transition and professional socialisation from health care assistant to student nurse. *Nurse Educ. Pract.* 7, 206–214.
- Bruce, M., Omne-Ponten, M., Gustavsson, P.J., 2010. Active and emotional student engagement: a nationwide, prospective, longitudinal study of Swedish nursing students. *Int. J. Nurs. Educ. Scholash.* 7 (1), 14.

- Carlson, E., Idvall, E., 2015. Who wants to work with older people? Swedish student nurses' willingness to work in elderly care – a questionnaire study. *Nurse Educ. Today* 35, 849–853.
- Council of Deans of Health, 2013. Healthcare assistant experience for pre-registration nursing students in England. Council of Deans of Health working paper. Available at: <http://www.councilofdeans.org.uk/wp-content/uploads/2013/12/HCA-Pre-reg-experience-Council-of-Deans-working-paper-final-20130501.pdf>. Accessed 29/10/21.
- DeKeyser Ganz, F., Kahana, S., 2006. Perceptions of Israeli student nurses regarding clinical specialities and factors that influence these perceptions. *J. Adv. Nurs.* 56, 88–98.
- Dellasega, C., Curriero, F.C., 1991. The effects of institutional and community experiences on nursing students' intentions toward work with the elderly. *J. Nurs. Educ.* 30, 405–410.
- Department of Health, 2012. Compassion in practice. Nursing, midwifery and care staff. Our vision and strategy. Available at: <https://www.england.nhs.uk/wp-content/uploads/2012/12/compassion-in-practice.pdf>. Accessed 29/10/21.
- Department of Health, 2013. Delivering high quality, effective, compassionate care: developing the right people with the right skills and right values. A mandate from the Government to Health Education England. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/203332/29257_2900971_Delivering_Accessible.pdf. Accessed 19/10/21.
- Department of Health, 2013. Patients First And Foremost. The Initial Government Response to the Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry.
- Fernández Trinidad, M., González Pascual, J.L., Rodríguez García, M., 2019. Perception of caring among nursing students: results from a cross-sectional survey. *Nurse Educ. Today* 83, 104196.
- Fowler, J., Norrie, P., 2009. Development of an attrition risk prediction tool. *Br. J. Nurs.* 18 (19), 1194–1200.
- Francis, R., 2013. Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry. Volumes 1-3. Available at: Stationary Office London. Accessed 19/10/21. <http://www.midstaffpublicinquiry.com/report>.
- Hallam, K.T., Livesay, K., Morda, R., Jones, A., de Courten, M., 2016. Do commencing nursing and paramedicine students differ in interprofessional learning and practice attitudes: evaluating course, socio-demographic and individual personality effects. *BMC Med. Educ.* 16, 80.
- Hallin, K., Backstrom, B., Haggstro, M., Kristiansen, L., 2016. High-fidelity simulation: assessment of student nurses' team achievements of clinical judgement. *Nurse Educ. Pract.* 19, 12–18.
- Hall-Lord, M.L., Petzall, K., Hedelin, B., 2018. Norwegian and Swedish nursing students' concerns about dying. *Nordic J. Nurs. Res.* 38, 18–27.
- Haron, Y., Levy, S., Alagli, M., Rotstein, T., Riba, S., 2013. Why do student nurses not want to work in geriatric care? A national questionnaire survey. *Int. J. Nurs. Stud.* 50, 1558–1565.
- Hasson, F., McKenna, H.P., Keeney, S., 2013a. Delegating and supervising unregistered professionals: the student nurse experience. *Nurse Educ. Today* 33, 229–235.
- Hasson, F., McKenna, H.P., Keeney, S., 2013b. A qualitative study exploring the impact of student nurses working part time as a health care assistant. *Nurse Educ. Today* 33, 873–879.
- Houghton, C.E., Casey, D., Shaw, D., Murphy, K., 2013. Students' experiences of implementing clinical skills in the real world of practice. *J. Clin. Nurs.* 22 (13–14), 1961–1969.
- Kevern, J., Ricketts, C., Webb, C., 1999. Pre-registration diploma students: a quantitative study of entry characteristics and course outcomes. *J. Adv. Nurs.* 30 (4), 785–795.
- Kiner, H.P., 1995. Nursing students' opinions on interpersonal violence. *J. Nurs. Educ.* 34 (7), 325–331.
- Land, L.M., 1994. The student nurse selection experience: a qualitative study. *J. Adv. Nurs.* 20, 1030–1037.
- Lees, S., Ellis, N., 1990. The design of a stress-management programme for nursing personnel. *J. Adv. Nurs.* 15, 946–961.
- Lim, J., Downie, J., Nathan, P., 2004. Nursing students self-efficacy in providing transcultural care. *Nurse Educ. Today* 24, 428–434.
- Lundh Hagelin, C., Melin-Johansson, C., Hensch, I., Bergh, I., Ek, K., Hammarlund, K., Pahl, C., Strang, S., Westin, L., Osterlind, J., Browall, M., 2016. Factors influencing attitude toward care of dying patients in first-year nursing. *Int. J. Palliat. Nurs.* 22 (1), 28–36.
- Mackintosh, C., 2006. Caring: the socialisation of pre-registration student nurses: a longitudinal qualitative descriptive study. *Int. J. Nurs. Stud.* 43 (8), 953–962.
- McKeever, S., Whiting, L., Anderson, D., Twycross, A., 2018. Causes of Attrition in Children's NursinG (CATCHING): an exploratory mixed methods study. *Nurse Educ. Pract.* 32, 44–51.
- McNelis, A.M., Wellman, D.S., Krothe, J.S., Hrisomalos, D., McElveen, J.L., South, R.J., 2010. Revision and evaluation of the Indiana University School of Nursing baccalaureate admission process. *J. Prof. Nurs.* 26, 188–195.
- Moe, C.S., 2018. Relationship of ethical knowledge to action in baccalaureate nursing students. *Nurs. Educ. Perspect.* 39 (6), 363–365.
- Muhsin, A.A., Munyogwa, M.J., Kibusi, S.M., Seif, S.A., 2020. Poor level of knowledge on elderly care despite positive attitude among nursing students in Zanzibar Island: findings from a cross-sectional study. *BMC Nurs.* 19 (96).
- Munn, Z., Peters, M.D.J., Stern, C., Tufanaru, C., McArthur, A., Aromataris, E., 2018. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Med. Res. Methodol.* 18 (143).
- Murphy, F., Jones, S., Edwards, M., James, J., Mayer, A., 2009. The impact of nurse education on the caring behaviours of nursing students. *Nurse Educ. Today* 29, 254–264.
- O'Brien, F., Mooney, M., Glacken, M., 2008. Impressions of nursing before exposure to the field. *J. Clin. Nurs.* 17 (14), 1843–1850.
- Peters, M.D.J., Godfrey, C.M., Khalil, H., McInerney, P., Parker, D., Baldini Soares, C., 2015. Guidance for conducting systematic scoping reviews. *Int. J. Evid. Based Healthc.* 13 (3), 141–146.
- Rainbow, J.G., Steege, L.M., 2019. Transition to practice experiences of first- and second-career nurses: a mixed-methods study. *J. Clin. Nurs.* 28 (7–8), 1193–1204.
- Rees, R., Sutcliffe, K., Dickson, K., Thomas, J., 2017. The role of reviewer reflexivity: reflections from a mixed-method consultative systematic review. *Global Evidence Summit, Cape Town, South Africa. Cochrane Database Syst. Rev.* 9 (Suppl. 1). Available at: <https://abstracts.cochrane.org/2017-global-evidence-summit/role-reviewer-reflexivity-reflections-mixed-method-consultative>. Accessed 21/10/21.
- Rosenberg, A., Husebø, A.M., Laugaland, A.K., Asse, I., 2019. Nursing students' experiences of the clinical learning environment in Norwegian nursing homes: a cross-sectional study. *Ošetrovateľstvo* 9 (2), 70–78.
- Scammell, J., Tait, D., White, S., Tait, M., 2017. Challenging nurse student selection policy: using a lifeworld approach to explore the link between care experience and student values. *Nurs. Open* 16; 4 (4), 218–229.
- Scheffler, S.J., 1995. Do clinical experiences affect nursing students' attitudes toward the elderly? *J. Nurs. Educ.* 34, 312–316.
- Sinclair, S., Russell, L.B., Hack, T.F., Kondejewski, J., Sawatzky, R., 2017. Measuring compassion in healthcare: a comprehensive and critical review. *Patient* 10 (4), 389–405.
- Skoglund, K., Holmström, I.K., Sundler, A.J., Hammar, L.M., 2018. Previous work experience and age do not affect final semester nursing student self-efficacy in communication skills. *Nurse Educ. Today* 68, 182–187.
- Snowden, A., Stenhouse, R., Young, J., Carver, H., Carver, F., Brown, N., 2015. The relationship between emotional intelligence, previous caring experience and mindfulness in student nurses and midwives: a cross sectional analysis. *Nurse Educ. Today* 35 (1), 152–158.
- Štiglic, G., Cilar, L., Novak, Ž., Vrbnjak, D., Stenhouse, R., Snowden, A., Pajnikihar, M., 2018. Emotional intelligence among nursing students: findings from a cross-sectional study. *Nurse Educ. Today* 66, 33–38.
- Stombaugh, A., Judd, A., 2014. Does nursing assistant certification increase nursing student's confidence level of basic nursing care when entering a nursing program? *J. Prof. Nurs.* 30, 162–167.
- Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., et al., 2018. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann. Intern. Med.* 169 (7), 467–473.
- Vierula, J., Hupli, M., Engblom, J., Laakkonen, E., Talman, J., Haavisto, E., 2021. Nursing applicants' reasoning skills and factors related to them: a cross-sectional study. *Nurs. Educ. Today* 101 (104890).
- Weeks, K., Timalonis, T., Donovan, L., 2021. Does alarm fatigue start in nursing school? *Nursing* 51 (5), 59–63.
- Worthington, M., Salamonsen, Y., Weaver, R., Cleary, M., 2013. Predictive validity of the Macleod Clark Professional Identity Scale for undergraduate nursing students. *Nurse Educ. Today* 33 (3), 187–191.
- 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.
- 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.
- Zampieron, A., Buja, A., Dorigo, M., Bonso, O., Corse, 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.