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Pre-registration student research placements within KNOWBEST: a service evaluation

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Abstract

Pre-registration student placements have traditionally been based in clinical settings. Recently, practice-based learning has evolved to include additional settings, including research, leadership and management. The KNOWBEST (Knowledge, Behaviours And Skills Required of the Modern Physiotherapy Graduate) project incorporated research placements for five pre-registration students. The aims of this project were to develop, implement and evaluate research placements within a UK pre-registration physiotherapy program, to add to the limited information available for HEI and supervisors. The paper includes placement content, reflections and evaluations from the perspective of the students, supervisors and Practice Team Lead. Students and staff were highly positive about research placements. Student's spoke of the importance of their immersive experience on placement, valuing the variety of learning experiences, opportunities to lead and the development of transferable skills. Students found that research and clinical placements, whilst different, were also similar in important ways. Students appreciated how research placements developed their abilities to provide evidence-based practice as clinicians. This paper does not provide definitive placement guidance, it provides information gleaned from direct experience for teams planning research placements. It identifies and reports areas the team found challenging, to facilitate discussion and debate as the profession actively diversifies and expands practice-based learning.

Keywords: Physiotherapy; Education; Student research placements; Professional development; Practice-based learning

Introduction

There are multiple changes and challenges occurring within the physiotherapy profession in the United Kingdom (UK). The health and social care needs for people has, and is continuing to, change. The UK has an aging population, the recent 2021 Census of England and Wales revealed over 11 million people, 18.6% of the population, were aged 65 years or older, compared with 16.4% from the previous census [1]. Patients are increasingly complex; between 2015 and 2035 multi-morbidity prevalence is estimated to increase, with the proportion of people living with four or more diseases almost doubling – two-thirds of whom will also have mental ill-health i.e. dementia, depression, cognitive impairment [2]. The KNOWBEST project (2021 to 2022) was commissioned by the UK Chartered Society of Physiotherapy (CSP) as part of their review of the Curriculum Framework for Physiotherapy Pre-registration Qualifying Programmes to transform education to ensure it meets the needs of the communities we serve. KNOWBEST explored the KNOWledge, BEhaviours and Skills required of the modern physioTherapy graduate including the future role of practice-based learning [3]. KNOWBEST was a mixed-methods study that included: a scoping review of contemporary approaches to PBL, including learning through simulation, content analyses of current role de-

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scriptors which were mapped to the knowledge, skills, behaviours and attributes required for contemporary physiotherapy practice, crowdsourcing' data collection and focus groups with key stakeholders and the development of 12 recommendations to transform physiotherapy education which were accepted by the CSP.

The provision of placements is changing and challenging. Physiotherapy students complete a minimum of 1000 hours practice-based learning (PBL) on placements during training [4]. The number of physiotherapy training places is being increased, especially for apprenticeships [5]. Placement availability is already recognised as being a limiting factor to increasing allied health professions (AHPs) student places in higher education institutions and there is an urgent demand for increased numbers of placements [6]. Integrated care systems (ICS) and the NHS Long Term Plan integrate care across different settings and organisations to meet the needs of local populations [4]]. This integration has important implications for PBL: as services shift further into primary and community settings, 'traditional' key placements such as hospital based acute respiratory and rehabilitation clinical placements are reducing [3]. Expansion of core placements reflecting all health care settings and the needs of the UK population is underway. Physiotherapists also need to provide and evaluate evidence-based practice and the profession needs career researchers to advance practice [7]. PBL, previously predominantly clinically focussed, is expanding to include all four pillars of practice, clinical, leadership and management, education and research that are required for advanced practitioners [8,9]. KNOWBEST recommendations reflect developments in physiotherapy practice, that the notional 1000 hours of pre-registration PBL should be retained but modernised so 75% or more hours should comprise clinical - patient facing PBL and up to 25% for other PBL including simulation based learning and/or other PBL opportunities e.g. Leadership and Research. KNOWBEST also recommended that pre-registration physiotherapy programmes should be required to map the curriculum to the four pillars of practice when they apply for accreditation/re-accreditation. EDI and digital skills and learning should be demonstrably woven throughout the curriculum.

KNOWBEST incorporated pre-registration student research placements within the lifespan of the project and have been asked for information and guidance about these placements by institutions seeking to develop research placements themselves. This paper aims to add to the scant information available for education programmes about student research placements by presenting the pre-placement preparation, design and content and evaluating experiences of the placements from the reflections of students and staff.

Methods

These are summarised in Figure 1.

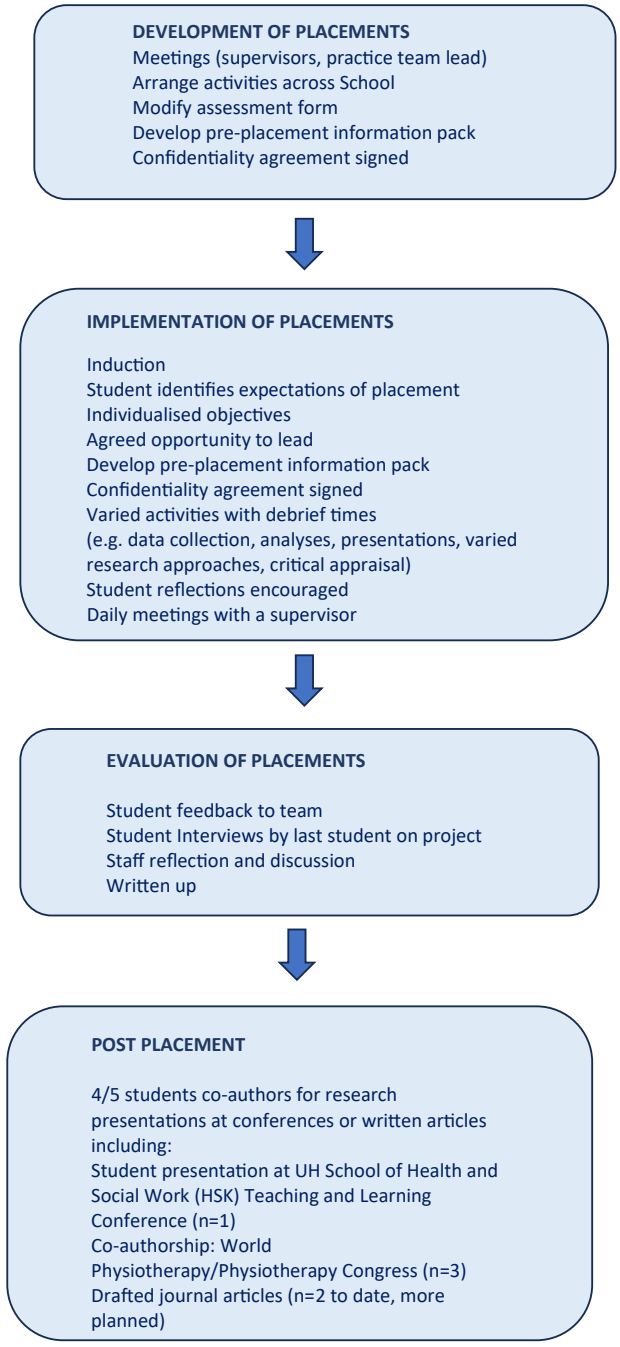

Figure 1. Flow diagram of the student research placements.

Development of placements

Pre-placement preparation

As KNOWBEST was the first time physiotherapy at the University of Hertfordshire (UH) had offered pre-registration research placements, the two researchers supervising the students (CML, NH) had meetings and email discussions with the PTL (SR) to discuss the content of placements and to modify the existing placement assessment form (before common placement assessment form was in use) to make this appropriate for research placements.

Supervisors were experienced researchers, with over twenty five years experience (CML) and twenty three years (NH). Modifications were minor word changes: examples include changing '*practice environment'* to '*working environment',* changing *'caseload'* to '*workload*' and *'treatment plans' to 'project plans'*. As the researchers had not supervised pre-registration students for many years, the PTL arranged to meet with them during key stages of placements (objective setting, half-way and final assessments) to ensure parity with existing placements and met with students individually at these timepoints and explored how placements were progressing. The PTL made themselves available to discuss any queries/issues with the researchers and students. The supervisors developed a 'Pre-placement Information Pack' which was emailed to students in advance of the placement; this introduced the team, provided contact details, information about the first day and general information. Before being provided with any project information, students completed and returned a signed form agreeing to maintain confidentiality about the project. During induction (day 1), details of relevant university policies to working (for example, safety, taking regular breaks from work, bullying and harassment) were provided in the same way that Trust policies are provided at clinical placements.

Content of placements

Placements were designed to give students a wide range of opportunities and experiences beyond the project and the research team, reflecting many clinical placements where students may spend time with members of the wider multidisciplinary team to gain increased knowledge and understanding. Within COVID-19 restrictions, students had the opportunity to meet researchers to get experiences of laboratory-based data collection methods. The placements included leadership: each student taking a lead on discrete elements of the project with oversight from a member/s of the project team. Table 1 summarises placement content.

Implementation

Placements were full-time, five-week placements and, due to COVID-19 restrictions, were predominately provided on-line. Students carried out a range of research related activities (examples include data collection, analyses, interpretation of findings, presentations and dissemination) and achievement of individually set objectives (Table 1). There were three placements: 1: with two third year students, 2: with one second and one third year, 3: one second year. One second year student had not yet completed their research methods module prior to the placement. Three students were female, two were male; all had elected to come on the placement. Throughout the placement it was made clear that students had joined the project team, that their views were essential to the project, that they bought the 'student' voice to the project in a way that the wider team valued and needed. Practical arrangements included supervisors and students meeting at least once each working day to discuss the project/work, and students on placement with another student were encouraged to work together online when appropriate and to email the supervisors with queries/arising issues as needed.

III evaluation of placements

Experience of placements from the perspective of students

At the beginning of each placement students were asked to write down their thoughts and expectations about the placement to inform their written reflections at the placement end. During placements students were encouraged to reflect upon learning and activities and at the end of the placement (after assessment) they were asked to provide written reflections about their placement experience and encouraged to give the team feedback to improve future placements. The student on the final placement student (JR) undertook on-line semi-structured interviews with three students from earlier placements (March 2022, duration 49 to 90 minutes) as part of the service evaluation. An evidence informed interview guide (including written reflection data) was developed by team discussion (JR, CML, NH). Interviews were recorded and transcribed (JR). Directed content analyses were carried out with the background KNOWBEST principles and student written reflections allowing both targeted and open questions to be used (JR) (including reflexive activities and writing) with co-analyses, discussions and interpretation of data throughout to support the analyses (CML, NH) [10].

Experience of placements from the perspective of the researchers and the practice team lead

In addition to student reflections staff also reflected and wrote notes/reflections/memos before, during and after placements. After the supervisors (CML, NH) and PTL (SR) had each reflected upon placements they then met to have an in-depth discussion. Topics discussed included 'What worked/didn't well?', 'What needs to be improved?' 'What have we learned about the key elements of this type of research placement?' This discussion was recorded, transcribed, underwent conventional content analyses (CML) [10] and checked back (NH, SR).

Results

Written reflections spoke of the '*valuable*' (year 3 student), enjoyable placements '*a hugely enriching experience and displayed a perfect balance between challenge and enjoyment* (year 2 student)*'* and of the '*satisfaction*' (year 2 student) of their work. Initially students expressed concerned about:

missing an opportunity to undertake a clinical practice placement as part of your degree- some employers might want applicants that have more 'hands-on clinical practice skills (year 3 student).

Table 1
Summary of placement content and activities for students.

Placement content and activities	Students				
	1	2	3	4	5
KNOWBEST project scoping review: database searches, screening search findings, data extraction, data analyses and interpretation. Student leading a specific role	√	√			
KNOWBEST project work on role descriptors: sourcing descriptors, data extraction, content analyses, interpretation. Student leading a specific role			√	√	
KNOWBEST evaluation of student experiences of research placement					√
Written reflections by students about their placements	√	√	√		√
Attendance at a Research Ethics workshop, Understanding and Applying Ethics in Research	√	√	√	√	√
Presenting research: workshop and practice or multiple practices	√	√	√	√	√
Research Visits (laboratory visits, virtual visits, randomised clinical trials, qualitative research, virtual reality)	√	√	√	√	√
Attending/Participating in **KNOWBEST** meetings with Stakeholders (examples include Project Steering Meetings, meetings with individual stakeholders/groups)	√	√	√	√	√
Participation in VPUK conference/UK Webinars/Focus groups	√	√	√	√	√
Attendance and participation of KNOWBEST weekly team meetings	√	√	√	√	√
Dissemination of research/project findings to CSP and team	√	√	√	√	√
Presentation of research findings at UH HSK School 2022 Teaching and Learning Conference					√
Student co-authorship e.g. on research papers drafted for publication, on research presented at World Physiotherapy Congress/UK Physiotherapy conferences	√	√	√		√

This view changed, the '*invaluable*' '*varied'* activities (year 3 student) '*developing autonomy'* (year 3 student) in an '*encouraging environment'* (year 3 student) led to the placement being perceived as:

beneficial to many students due to the research activities, teachings and independent work provided not always available in traditional clinical placements (year 3)

I realised that the gap between clinical and non-clinical skills was not as big as I had initially thought, as I had the opportunity to hone many transferrable skills on a daily basis (year 2).

No changes to the pre-preparation pack were identified by students who reported them as helpful.

Table 2 presents all themes from the final student's analyses of interview data and describes them and provides supporting quotations. Students spoke of their highly positive views of the research placements. They spoke of the importance of their ***immersive*** experience on placement, valuing the ***variety*** of learning experiences, ***opportunities to lead*** and the development of ***transferable skills***. Students found that, whilst the research placements are different from clinical placements, that they were also ***similar*** in important ways with both formats of placement equally

Table 2
The evaluation of placements from students.

Themes ($n = 6$)	Descriptions with supporting quotations (in italics)
Immersive	Immersion beyond the classroom. Experiencing the research placement gave context to student's pre-existing understanding and knowledge of research and its methods. It provided students with opportunities to put knowledge into practice '*you're… kind of immersed…rather than…learning about it …you gain a greater appreciation of the importance of research'*.
Variety	Variety of experiences and learning '*extra activities…a good experience'*. The extra activities and supplementary learning provided to students broadened their learning, enabling them to develop a wider understanding of research approaches than working on KNOWBEST alone would have afforded.
Transferable skills	Transferable skills to use beyond research '*there's loads'*. The knowledge, skills and experiences during the placement, such as locating and appraising evidence, time and task management and communication, were considered transferable to clinical and additional non- clinical settings.
Similar	Clinical and research placements are '*two very different things, but also very similar at the same time'*. Whilst appreciating that clinical and research placements have different focuses, both types share the quality of developing students towards their goal of becoming a qualified physiotherapist and both were considered equitable.
Opportunities to lead	Opportunities to learn to lead and take responsibility '*confidence…to lead like an aspect of it (research) and complete it well*'. Opportunities to lead were seen as abundant on the placement, students described how they have been able and confident to take lead in clinical and professional situations after their research placement and this was considered to be a valuable trait that employers and the profession seek from qualified physiotherapists.
Understand	Growing capacity and ability to use research principles in practice '*I understand more about research so I can kind of gear treatments and…why we do them'*. The evidence-based teaching underpinning this placement, and learning about evidence through this placement, prepared students for their future practice, providing evidence-based care and meeting their professional responsibilities as qualified physiotherapists.

Table 3
Information to support planning for student research placements.

Factor	How this factor impacted upon the placement and thoughts for others developing similar placements
Large amount of Preparation	*'there was a lot of preparation…because it was so new'*. This was not just from the PTL and supervisors, there was also more *'prep to do with the student…they had some trepidation and anxiety….about something that was so different'*.
Increase in workload for the University practice team	*'As with all new placements, there is an increase in workload for university (practice team) staff to make sure that the placement (has)…parity…with the other placements'*. If the same team takes students then this is likely to ease, although students may still require additional support as this placement is so different than their clinical ones.
Increase in workload for the supervisors	Pre-placement time was required to design, plan and structure placements. Both supervisors worked part time but needed to be in touch with students frequently and flexibly for the placement to flow well, to provide continuity during placements to enable students to demonstrate development, and to appropriately support students. Both met with students on non-working days, this could be potentially be problematic for part-time researchers/small research teams.
Assessment	Discussions about assessment were necessary to address the question *'How can this…be marked in the same way as our other placements?'* leading to the assessment form being modified (see text). The new CPAF form may be an improvement to the forms used during these placements.
Students joining the team as full members	Students were welcomed as full members of the team, gave the 'student voice' to KNOWBEST and were credited for the work they did on posters and manuscripts, '*they do feel valued*'. It is important to make it clear if any/what expected outputs are for the student's work at the start of the placement when 'setting the scene' '*it needs…to be agreed*'.
Tension between placement needs and research project timescales	The research project deadlines were tight and could not afford to slip. There was concern that, between supporting students and the project timescales, research deadlines might be affected. The department claimed for placement hours, making additional hours possible; this was needed to ensure research timescales didn't slip and staff worked flexibly to ensure goals were met on time. A '*really clear timetable'* was needed and the ' *(students) knew exactly what the plan was'* too.
Peer support	Two placements had two students on placement together, this meant they could work together on some activities, providing '*peer support'* but could also work separately if/when appropriate or necessary. These placements for two students worked well with two part time co-supervisors, doubt was expressed regarding increasing this student/supervisor ratio in similar projects due to the time required to supervise and carry out objective setting and appraisals with each student.
Specific leadership objective	Every student had '*their own specific objective'* that they led with support from their supervisor and the wider study team. This created a sense of 'ownership' and achievement when successfully achieved and was considered to have worked well. This also provided additional opportunities to organise and manage workload, priority setting and time management and make presentations to the team.
Variety of activities and experiences	Structured variety encompassing different qualitative and quantitative research approaches was considered valuable to give '*a rounded research placement'* '*I think the variety was really important*'. This '*gave them a flavour of other methodologies'* developing a broader understanding of research as well as sustaining interest and engagement. Also, sessions on research ethics, involving people in research provided valuable context.
Student choice, equality and equity	Due to the timing of the placements, third years were only able to apply to come on research placement if they had already completed their key placements so students were pre-selected based on profile and from expressions of interest. This meant the placements were not offered to all students and, in future, the staff would want to offer equal access *'I strongly believe that all placements should be available for all students'*.
Cultural Shift	It was believed that a '*cultural shift'* is needed for research placements to be normalised and available for students and accepted by them and the wider profession as a whole. Positively, students believed managers and clinicians they met after their placements viewed the research placements *'positively'* and the placements were *'advantageous'* to them.
Support from the Practice Team Lead	Supervisors valued the strong, more frequent than usual, PTL '*incredible support'* for this new type of placement offered at UH. Neither supervisor has supervised pre-registration students (only post-graduate ones) for many years and were keen (and concerned) to provide high quality placements. The PTL was '*mindful'* of this, there was '*more frequent dipping in'* by them to check everyone was happy and feeling supported. The PTL would also have valued a '*mentor'* someone who had done this type of placement before.
Clarity is required	*'Its being very clear about what it is you want them (students) to do….making sure they can learn….be efficient and effective and understand where it (task) fits in the bigger picture', making content/academic level appropriate, clear project timetables.* Communication and clarity were considered instrumental to the success of these placements.
The wider team	*'Gratitude'* was expressed to members of the Department of Allied Health, Midwifery and Social Work, UH, Schools of Health and Social Work and Life and Medical Sciences who gave time to involve students in their research, show them experiments, discuss their research and helped balance the placement '*to do (research placements) effectively you need to have colleagues….doing other types of research who are happy to give up the odd session in the same way that an MDT (multidisciplinary team) clinically would do'*.
'Joint' placements	Whether placements should be a 'research' placement, or a leadership one or a hybrid of the two or hybrid with a clinical element was discussed. Such joint placements may make them *'more palatable'* or risk them becoming *'more nebulous.* This research placement included leadership but was not a leadership placement. *'I really liked (that)…the students were fully immersed in the research placement…(not doing) 2 days a week with you and 3 days clinically'*. It could be problematic to assess a student excelling in one part of a placement and failing the other part.
COVID-19	Due to COVID-19 some placements were on-line, others were hybrid so *'we've got to consider research placements in the COVID era versus research placements…in a research laboratory or research environment (students will be) dipping in and…out and therefore the need for forma sitting down (supervision) is very different'*. Placements in future may be in person, in remote centres, or hybrid and will require exploration and evaluation.

preparing them for practicing as physiotherapists post-qualification. Students also appreciated how the research placements developed their abilities to locate and appraise evidence and ***understood*** how they could use these skills to provide evidence-based practice as clinicians.

Staff participants had discussed the placements together multiple times before their recorded discussion (pre-placement, during placements and end of placements). The staff discussion drew upon these existing discussions and allowed further reflections to be voiced. Factors, supporting information and thoughts for others planning research placements are presented in Table 3.

Discussion

The research placements were viewed positively by students and staff, although, as with many placements, the substantial time and work required to make new placements successful should not be underestimated. However, the need for the increase and growth of research placements in line with the development of the physiotherapy profession is undeniable. Research is accepted as 'vital' to provide new knowledge needed to improve health outcomes and reduce inequalities, especially when resources are under pressure [11]. KNOWBEST findings evidenced the importance of integrating all four pillars of practice into pre-registration education and PBL [3]. This concurs with the HEE Research and Innovation Strategy [12] which aims to create an education and training system that is evidence based and underpinned by research and innovation building capacity and capability enabling physiotherapists to qualify and continue to be able to embrace and actively engage with research and innovation to meet the needs of patients. The HEE Clinical Academic Careers Framework, to develop an inclusive, over-arching framework for Clinical Academic Careers that improves access to clinical academic careers, will also contribute to increasing the evidence base and improving the care of patients receiving physiotherapy [13].

The Allied Health Professions (AHPs) Strategy of the National Institute of Health Research (NIHR) also emphasises the core role of AHPs in delivering its mission to provide a health research system, one in which the NHS supports research which is focused on the needs of service users and the public' [14]. A 'Guide to Practice-Based Learning for Allied Health Professional (AHP) Students in Research' is now available from the Health Education England [15]. Reflecting upon KNOWBEST**,** the research placements were designed and implemented in accordance with this recent guidance to enable students to apply, consolidate their learning and bring together academic theory and workplace practice so they develop the skills and competences needed to register as health and care professionals [15]. Additionally, the practice-based learning was supervised and structured to enable progress towards learning outcomes and assessed, again in accordance with recent HEE guidance [16]. This guide contains views and practical tips and supports the need for evidence evaluating research placements.

Students coming on placement were welcomed fully into the team and, where possible and appropriate became named co-authors on posters and articles, as evidenced by this article (INITIALS). Belonging to a team is known to be important for clinical placements and our findings suggest this to be similar for non-clinical practice-based learning, where less evidence is available. A recent qualitative service improvement enabled nursing, allied health professional, midwifery and nursing associate students ($n = 53$) to have in-depth discussions about their clinical placement experiences in one Trust [17]: the elements identified for successful placements are supported by the findings of our preliminary evaluation of research placements, namely students:

1) Feeling prepared for placement. In KNOWBEST information packs were prepared and sent ahead of placement starts for students to be able to prepare for their placement.
2) Being welcomed by name, not as 'the student', and being part of the team, as already mentioned above.
3) Being thanked or praised and given time to debrief. Debrief times with supervisor/s were built into student timetables after each arranged research activity/task had been completed. Students were encouraged, thanked for their input and praised by the team and more widely, for example when presenting to members of the CSP.
4) Being trusted for their ability. The leadership objective in particular provided students with responsibility and placed trust in their ability. This included trusting students to be aware when they needed to ask questions or for help, guidance or feedback from their supervisor/s.

A scoping review of clinical placement models for undergraduate health professions students found these aligned with module outcomes and outcomes were categorised into relationships, influence, environment, facilitation, inputs, knowledge scores, and student perceptions categories [18]. Interestingly the majority of studies predominantly reported on nurses and originated from Australia, indicating the need for research in the UK which involves physiotherapists and AHPs more widely. Whilst the similarities between KNOWBEST placements and clinical placements are clear, areas of difference also need to be explored and identified. One example from KNOWBEST relates to the differences in Health and Safety during placements. For clinical placements health and safety often involves components such as manual handing and ensuring patients are safe during sessions. For the research placements the health and safety aspects included safe screen use by students, their taking regular breaks to move around so were more focussed upon the student. Another difference was developing an increased variety of communication and presentation styles compared to clinical placements [16] including: emails, on-

line meetings, creating powerpoint slides and presentations, producing charts, visuals, graphics and ideographics, presenting at conferences, taking part in webinars, data extracting and populating reports, report section writing and developing academic writing skills.

Whilst each student had a specific learning outcome this placement was not designed as a leadership placement, rather a research placement with leadership opportunities. This meant that key components of leadership learning, for example, learning about models/theories of leadership and strategy and change management were not included. From student's experiences of leadership placements however, similarities are seen [19]. The development of communication, digital and time management skills were evidenced in both types of placement, as was the need to manage one's own well-being. Students on the leadership placement valued belonging to the team too and, despite their initial apprehension, they too did not believe they had missed out being not doing a clinical placement, instead they grew to understand how leadership can influence patient outcomes.

In the introduction it was stated that this paper is not seeking to provide definitive placement guidance, it is limited to evaluating research placements in one HEI and future research to measure the effectiveness, experiences and outcomes for non-clinical based practice learning across multiple settings and types of placements is clearly required.

This current evaluation does identify areas of challenge and debate for discussion. One of these is around the number of students per placement and per supervisor. The CSP and RCOT Principles of Practice-based Learning recognise that peer support on placement reduces anxiety and helps create a safe learning environment [20] and advocates that, where all other considerations allow, this model should be the default. The caveat 'where all other considerations allow' is helpful, it was not always possible to provide placements for more than one student in KNOWBEST, or in a subsequent research placement, and careful consideration is also required regarding when students on placement together should and should not work as a pair/team. Setting individual learning objectives was helpful in this regard. As increasing demand for placements is unyielding, pragmatically, all student placements are valuable; student feedback to date suggests that active planning and consideration for a single student being on placement can still lead to an enjoyable experience and a safe learning environment. It is appreciated that this is preliminary feedback from only a few students and further research exploring peer support is needed. Both supervisors were part-time, both felt that co-supervising two students at a time was the maximum they could support in terms of the time and flexibility required. Subsequently one supervisor currently working full time supervising one student believes that is the maximum she could supervise to the high quality required whilst meeting research project requirements, unless pre-registration supervision time was built into her workload. Larger research teams may be able to take more students at a time. It is also noted that students elected to come onto placement and, as these placements open up, there is a need to evaluate research placements with students who have not chosen them. Payment for placements is also important. The supervisors were able to supplement their hours by claiming for placement tariff hours; this proved necessary when student support needs and research project deadlines did not always align, affording the necessary flexibility to achieve both required roles. The challenges regarding combining 'non-clinical' and 'clinical' jointly in future placements raised questions too. Students valued the immersive experience. Switching mindsets repeatedly during clinical and non-clinical days in a week may present problems for students. If a placement was split so half a placement was in one setting followed by half in another, then assessing a student might become difficult. Say a student excels in the first half and fails the second half of their placement? Providing continuity to allow students to demonstrate development across a whole placement is important.

In conclusion, research placements were highly positively viewed by students and staff, careful planning and substantial staff time before and during placements were considered important for success. With regard to impact, findings provide a valuable preliminary evaluation regarding pre-registration student research placements to inform and assist other HEIs designing and providing new RPBLP for students. Clearly, future larger scale research is required across the HEI setting to provide more evidence to inform knowledge and understanding about non-clinical practice-based learning placements and further improve the placements offered to UK pre-registration students.

Ethical approval: This was an evaluation of practice-based learning and, as such, specific ethics approval was not required by the University. KNOWBEST overall was approved by the Health, Science, Engineering and Technology ECDA: HSK/SF/UH/04680 Ethics Committee at the University of Hertfordshire, UK.

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Conflict of interest:

There are no conflicts of interest to declare.

References

[1] Office of National Statistics. Census 2021; 2022. ⟨https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/

ageing/articles/voicesofourageingpopulation/livinglongerlives⟩. [Accessed 04 September 2023].
[2] Kingston A, Robinson L, Booth H, Knapp M. Jagger C for the MODEM project Projections of multi-morbidity in the older population in England to 2035: estimates from the Population Ageing and Care Simulation (PACSim) model. Age Ageing 2018;47:374–80.
[3] Minns Lowe C, Heneghan N, Herbland A, Atkinson K, Beeton K . KNOWBEST: the KNOWledge, BEhaviours and Skills required of the modern physioTherapy graduate including the future role of practice based learning. Project summary and report for the Chartered Society Of Physiotherapy; 2022. ⟨https://www.csp.org.uk/networks/higher-education-institution-educators/knowbest-project⟩ [Accessed 04 September 2023].
[4] NHS Health Education England. NHS current placement expectations of AHP Regulators and Professional Bodies; 2020. ⟨https://www.hee.nhs.uk/our-work/allied-health-professions/increase-capacity/ahp-practice-based-learning/current-placement-expectations-ahp-regulators-professionalbodies#:~:text=The%20guidance%20does%20detail%20an,of%201000%20hours%20placement%20experience⟩ [Accessed 04 September 2023].
[5] NHS Long Term Workforce Plan June 2023. ⟨https://www.england.nhs.uk/wp-content/uploads/2023/06/nhs-long-term-workforce-plan-v1.1.pdf⟩ [Accessed 04 September 2023].
[6] Royal Society for Public Health. Expanding public health placements to AHP students: the barriers and solutions. ⟨https://www.rcslt.org/wp-content/uploads/2021/02/RSPH-Expanding-public-health-placements-to-AHP-students-report.pdf⟩ [Accessed 04 September 2023].
[7] European Region WCPT. Promoting research in physiotherapy in the European region of the WCPT briefing paper general meeting of the European region of the WCPT; 2018. ⟨https://www.erwcpt.eu/_files/ugd/3e47dc_65e6751ba35849b69a6e8fc84729065a.pdf⟩ [Accessed 04 September 2023].
[8] National Health Service. Multi-professional framework for advanced clinical practice in England; 2017. ⟨https://www.hee.nhs.uk/sites/default/files/documents/multi-professionalframeworkforadvancedclinicalpracticeinengland.pdf⟩ [Last accessed].
[9] Lawler J, Maclaine K, Leary A. Workforce experience of the implementation of an advanced clinical practice framework in England: a mixed methods evaluation. Hum Resour Health 2020;18:96.
[10] Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res 2005;15:1277–88.
[11] Department of Health and Social Care. Department of Health and Social Care. Liberating the NHS white paper; 2010. ⟨https://www.gov.uk/government/publications/liberating-the-nhs-white-paper⟩ [Accessed 04 September 2023].
[12] Health Education England. Developing a flexible workforce that embraces research and innovation; 2022. ⟨https://www.hee.nhs.uk/sites/default/files/documents/HEE%20research%20and%20innovation%20strategy.pdf⟩ [Accessed 04 September 2023].
[13] Health Education England. Clinical academic careers framework. ⟨https://www.hee.nhs.uk/sites/default/files/documents/HEE_Clinical_Academic_Careers_Framework.pdf⟩ [Accessed 04 September 2023].
[14] NIHR Clinical Research Network (CRN) allied health professionals strategy 2018–2020; 2019. ⟨https://www.nihr.ac.uk/documents/nihr-crn-allied-health-professionals-strategy-2018-2020/11530#:~:text=%E2%80%9CWe%20want%20Allied%20Health%20Professionals,the%20health%20and%20research%20system.%E2%80%9D&text=The%20purpose%20of%20this%20strategy,Clinical%20Research%20Network%20(CRN)⟩. [Accessed 04 September 2023].
[15] Health Education England. Guide to practice-based learning for allied health professional (AHP) students in research. ⟨https://www.hee.nhs.uk/sites/default/files/documents/PracticeLearningv1_0.pdf⟩ [Accessed 04 September 2023].
[16] Health Education England. Guide to practice-based learning for allied health professional (AHP) students in research. ⟨https://www.hee.nhs.uk/sites/default/files/documents/PracticeLearningv1_0.pdf⟩ [Accessed 04 September 2023].
[17] Pearce R, Topping A, Willis C. Enhancing healthcare students' clinical placement experiences. Nurs Stand 2022. https://doi.org/10.7748/ns.2022.e1188
[18] Nyoni CN, Hugo-Van Dyk L, Botma Y. Clinical placement models for undergraduate health professions students: a scoping review. BMC Med Educ 2021;21:598.
[19] Hayden T, Wyman G, Travis. A virtual leadership placement for allied health professions learners: a reflective journey by Tabitha Hayden, Georgie Wyman and Emily Travis. BMJ Lead Blog 2023⟨https://blogs.bmj.com/bmjleader/2023/02/17/a-virtual-leadership-placement-for-allied-health-professions-learners-a-reflective-journey-by-tabitha-hayden-georgie-wyman-and-emily-travis/⟩ [Accessed 04 September 2023].
[20] Chartered Society of Physiotherapy, Royal College of Occupational Therapy. Principles of practice-based learning; 2022. ⟨https://www.csp.org.uk/publications/principles-practice-based-learning⟩ [Accessed 04 September 2023].