University of Hertfordshire UH

School of Health and Social Work

PROJECT REPORT FOR THE CHARTERED SOCIETY OF PHYSIOTHERAPY

CHARTERED SOCIETY OF PHYSIOTHERAPY

KNOWBEST: The KNOWledge, BEhaviours and Skills required of the modern physioTherapy graduate including the future role of practice based learning

Appendices

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Appendix I. Work package 1 Scoping review

A1.1 - Design and Methods

A scoping review [1] aims "to map the literature on a particular topic or research area and provide an opportunity to identify key concepts; gaps in the research; and types and sources of evidence to inform practice, policymaking, and research".

Preliminary scoping searches informed the methods used and scope of the study (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data, (5) collating, summarising and reporting the results, and (6) an optional consultation exercise [2].

A1.1.1 - Stages

Due to the volume of studies identified the search and analysis involved discrete stages with data drawn from the last 20 years

1. Establishing search strategy to include descriptions/definitions for terms within digital learning and simulation, where
   a. **Digital Learning** is a concept where use of devices / technologies facilitates learning needs and
   b. **Simulation** is any scenario where a case study or similar to this is re-created through use of mannequin, peers, actors, technology etc.)
2. Identification and reporting of number of studies which fulfilled the eligibility criteria including nursing students (plus historical publication trends for nursing, AHP and physiotherapy
3. For the physiotherapy studies data extraction enabled detailed reporting of the location, study aims, student year group, concept approach, outcomes and classification according to area of practice and concept type (digital learning, simulation). Reporting differentiated digital learning from simulation.
4. Synthesis of findings for simulation from physiotherapy studies centered on

a) main educational purpose (i.e. development of clinical reasoning, knowledge, acceptability etc.)

b) area of practice (i.e. neurology, older adults, cultural empathy etc.)

c) areas of enquiry (i.e. knowledge acquisition, competence etc.)

d) methods of enquiry (i.e. qualitative, survey etc.)

e) resources and frameworks (i.e. equipment etc.)

A1.1.2 - Eligibility criteria

Studies and published abstracts (from conference proceedings reported in the named journals) were identified based on the search concept tool 'PCC'; where

- 'p' was the population of interest (i.e. students enrolled in a professional course leading to an AHP qualification)
- 'c' the concept of interest (i.e. types of digital learning or simulation)
- 'c' the context (i.e. undergraduate education, curriculum). Details of the full eligibility criteria are included in Table 1.

Table 1. Eligibility criteria

Category	Inclusion criteria	Exclusion criteria
Population	Nursing students (stage one only) Allied health students (including respiratory therapy) of the following professions: 14 https://www.england.nhs.uk/ahp/role/	Medical students Where sample comprised of <80% AHP Where sample comprised of <80% PT students or separate data for PT students was not included
Concept	**MESH term** Simulation Training (inc. high fidelity simulation training & patient simulation) User-Computer Interface (inc. ambient intelligence) Computer simulation (inc. augmented reality & virtual reality) Telemedicine (inc. remote consultation & telerehabilitation) Educational technology (inc. audiovisual aids) Education, Distance ***Key Word*** *Digital AND learning* *Standardised/standardised patient* *Computer-assisted learning* *Remote online case based learning* *Gamification*	
Context	Education Curriculum Curriculum Undergraduate Pre-registration University	Post-graduate education Qualified professionals

Exclusion: studies not in English and systematic reviews. (Relevant systematic reviews are reported separately within the background section). Commentaries, editorials, theses.

A1.1.3 - Information sources

The following databases were searched from inception: MEDLINE, CINAHL, PEDro. Hand searching of key journals included BMC Medical Education, Journal of Physiotherapy, Physiotherapy. Published conference proceeding abstracts were included from named journals to capture current or emerging research.

A1.1.4 - Search

The search strategy was designed by the authors including individuals with subject and methodological expertise. The initial search strategy was developed with Ovid MEDLINE using medical subject headings (MeSH) and keyword and subsequently adapted to the syntax and subject headings of the other databases to be searched for this review. Details available on request.

A1.1.5 - Selection of sources of evidence

Reviewers (ZG, MFR, NH) screened the titles and abstracts to identify relevant publications. Study selection was based on eligibility from title and abstract screening. Full text review of publications, where available, identified by our searches for potentially relevant publications. Any uncertainty regarding eligibility were resolved by discussion and consensus with the research team.

A1.1.6 - Data charting process

Data were extracted by reviewers (NH, ZG, MFR) working as a group using a bespoke proforma which was piloted *a priori*. Data from eligible studies were charted using a standardised form. Disagreements on data charted were resolved by discussion and consensus.

A1.1.7 - Data items

Data items included study characteristics (e.g., year of publication, country of publication, study design), approach to PBL (e.g., telehealth], profession [e.g., physiotherapy, respiratory physiotherapy], details of approach (e.g., required resources, skills being developed).

A1.1.8 - Synthesis of results

Charted data were summarised in tables, and the descriptive data analysed using frequency and content analysis.

A1.2 – Results

A1.2.1 - Terms used and definitions.

Whilst not mutually exclusive and instances where both are used, approaches within digital learning and simulation are detailed in Table 2. Definitions and examples of these are included in Figure 2.

Table 2. Classification of approaches

Digital Learning	Simulation
User-Computer Interface (Ambient Intelligence) Educational technology *(Audio-visual Aids)* Computer-Assisted Learning Remote Online Case-Based Learning Gamification Education, Distance	Simulation Training *(High Fidelity Simulation Training & Patient Simulation)* Computer Simulation *(Augmented Reality & Virtual Reality)* Standardised Patient
Telemedicine *(Telerehabilitation & Remote Consultation)*	

1. Identification and reporting of number of studies which fulfilled the eligibility criteria including nursing students (plus historical publication trends for nursing, AHP and physiotherapy.

See Figure 1 for results of searches and screening. Following removal of duplicates, searches yield 13,420 studies in nursing, with a further 2373 for AHP. Following screening, 2263 were included for AHP, with 113 studies specific to physiotherapy (digital learning n=53, simulation n=60).

Historical publication trends (Figure 1) illustrate considerable growth in the evidence base for nursing and AHP populations. The trend for physiotherapy however remains relative constant, despite the inclusion of abstracts of conference proceedings.
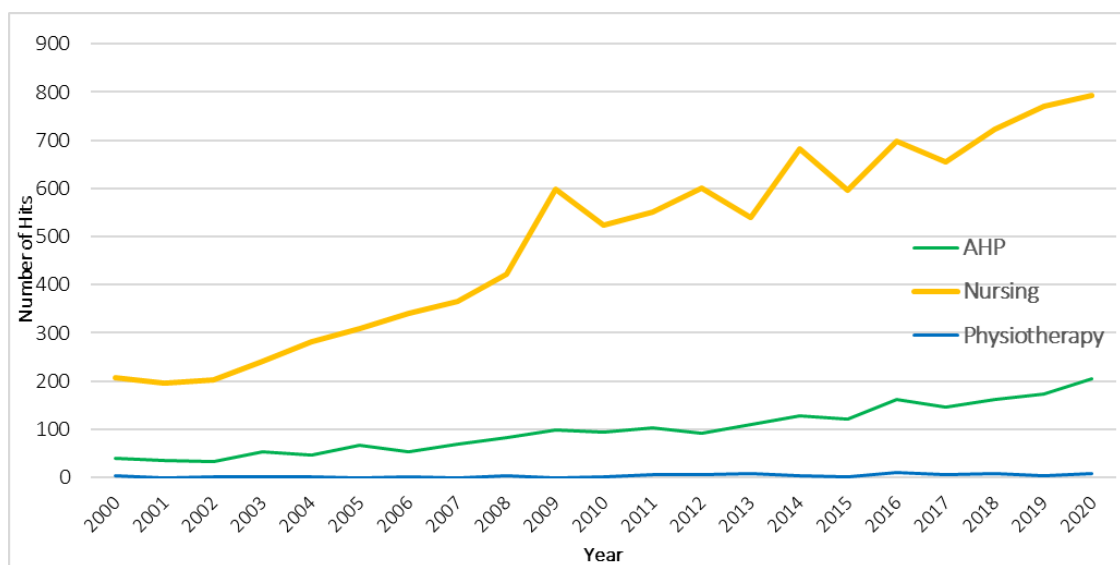

Figure 1. Historical trend of publications (CINAHL and Medline)

2. For the physiotherapy studies data extraction enabled detailed reporting of the location, study aims, student year group, concept approach, outcomes and classification according to area of practice and concept type (digital learning, simulation, mixed). Reporting differentiated, where possible approaches for digital learning and simulation.

Table available on request.

Given the volume of literature a focus on simulation for synthesis was agreed within the project team to enable depth in results and analysis.

Appendix II. Supporting Information for Work Package 2

A2.1 - Criteria used to obtain comprehensive list of job descriptors

- Jobs advertised for areas across the UK
- Full time, part-time and locum jobs
- NHS, independent and private jobs
- Rotational and static posts
- Jobs in primary, secondary, tertiary and a mix of these levels of care (although we did not expect any/many jobs in primary care because posts in this setting are often Band 6/7, we did search for them)
- Jobs for a wide variety of types of physiotherapy positions , including core areas (e.g. musculoskeletal, neurological paediatrics, respiratory) as well as less common types of physiotherapy posts)
- Predominantly rural, predominantly urban and city based jobs, areas were defined using UK census data (https://www.ons.gov.uk/census/2011census).

There were a variety of terms used for role descriptors: some employers included separate job descriptors and person specifications, others combined these in one document and some (private) job advertisements did not include this information and requested a CV to be provided (these were not included in this project). For this project we will use the term role descriptor to describe all these forms of information (bar CV).

A2.2 - Job descriptors were obtained using three approaches.

1. Managers and newly qualified physiotherapists could upload job descriptors directly to the KNOWBEST project website
   https://www.health.herts.ac.uk/elearning/knowbest/
   The project and website were advertised extensively by twitter, by the CSP newsletter emailed out to members of the CSP, in the CSP magazine 'Frontline', by emailing CSP professional networks and during a networking session run by the KNOWBEST team at the vPUK 2021 conference.
2. The team searched job vacancies on-line using the following websites:
   NHS jobs https://www.jobs.nhs.uk/   NHS jobs Scotland
   https://jobs.scot.nhs.uk/

Northern Ireland https://jobs.hscni.net/   CSP jobs

https://www.csp.org.uk/jobs

https://uk.indeed.com/Private-Physio-jobs   https://www.justphysio.co.uk/

https://www.glassdoor.co.uk/Job/private-physiotherapist-jobs-
SRCH_KO0,23.htm

(this includes SANO otherwise known as PhysioDirect)

https://careers.circlehealthgroup.co.uk/healthcare-jobs/physiotherapy

https://www.nuffieldhealthcareers.com/clinical-medical?

Google was also searched for 'UK Band 5 physiotherapy vacancies' and 'UK Band 5 physiotherapy jobs'.

3. The team also emailed some managers directly to 'fill in gaps' not identified via approaches 1 and 2.

A2.3 - How the grid was populated.

The team were aware they would not be able to include all identified role descriptors in this part of KNOWBEST and anticipated that 15-20 role descriptors would be needed to populate all the cells in the grid to achieve representativeness with respect to UK home countries, role types, specialities, health care settings and rural/urban areas. All the identified and located role descriptors and their characteristics were listed (excel spreadsheet). Some cells of the grid had larger numbers of role descriptors in them, and some had very few. The sparsely populated role descriptors were added to the grid first, for example there was only one role descriptor identified within an oncology speciality. Then additional role descriptors were added, ensuring all cells were populated in an appropriate way. Where there were multiple role descriptors for a single employer, only one was added to the grid to allow as many different employers to be included as possible. After the analyses CML read all the role descriptors identified for the project that had not been included in the grid: searching specifically for any further information relevant to the project and including new data at this stage.

A2.4 - Pilot study.

One role descriptor was independently coded by three researchers (CML, BC, JB), using the coloured codes above to highlight text and write comments. The results were placed side by side in a table and similarities and differences discussed in depth. This enabled the researchers to discuss areas of difference and discuss

areas of overlap between the codes. Following this, data were independently coded for two further role descriptors (one NHS and one independent company) by two researchers (BC and JB) and compared (CML). Several areas of difference remained between the two researchers. The team decided therefore that, to promote rigour, for the main stage of data coding, one researcher (BC) would code all role descriptors and that another researcher (CML) would review the coding for each role descriptor. Both researchers discussed any areas of difference and decided the code via discussion.

A2.4 - Data extraction.

BC coded all job descriptors, CML reviewed all descriptors, and any areas of difference were discussed until agreement. Both BC and CML identified additional codes. Data were extracted into word documents (BC). The meaning and frequency of codes were presented in a table (any duplication within a role descriptor was removed at this point) (CML). Data were mapped against HCPC Standards of proficiency for physiotherapists, HCPC Standards of conduct, performance and ethics and the CSP Code of members professional values and discussed (CML).

Appendix III. The knowledge, skills, behaviours, attributes and additional information included in role descriptors.

The following tables summarise the knowledge, skills, behaviours and attributes included in role descriptors (see Table 3, Table 4, Table 5, Table 6 and Table 7).

Table 3. Knowledge required by Band 5 Physiotherapists

KNOWLEDGE	**Physiotherapy Professional standards/guidelines:** (n=9) CSP Standards, code of conduct (n=12), HCPC standards (n=7), NHS Code of Conduct (n=2) and codes of practice (n=2) **Trust/Departmental/Employer/Other policies, Acts, standards and values:** (n=13), The Children Act, Children & Families Act (n=1). Clinical governance (n=5), Data Protection Act 1998 (n=6), General Data Protection Regulations (n=2), Departmental safety and Chaperoning Guideline (n=1), Disabled Persons (Employment) Act 1994 and 1998 (n=1), the Disability Discrimination Act 1995 (n=1) and all other Equalities legislation (n=1), Ethics (n=2), Environmental and sustainability policies (n=1), The equality and diversity legislation and local guideline (n=1), Trust's/Employers Equal Opportunities Policy (n=5), Health and safety (n=6), National guidelines and legislation relating to health and social care (n=1), Trust Health and Safety Policies and training (n=2), Health and Safety at Work Act 1974 and legislation (n=6), Infection control policies (n=9), Incident Reporting policy (n=3), Information governance, data protection and confidentiality (n=11), Lone working policy (n=1), Mandatory training (n=5), Manual handling policy (n=2), Medical devices policy (n=2), Process and procedures for each referring party (n=1), Race Relations Act 1976 (as amended) (n=1), Records /reports(n=11), Risk management policy (n=2), Safeguarding (n=5) and safeguarding training (n=4), The legal requirements of the Sex Discrimination Act 1975 (as amended) (n=1), Supervision guidance policy (n=1), Tissue Viability (n=1),Trust standing orders, standing financial instructions, policies, procedures and guidelines (n=1), United Nations Convention on the Rights of the Child (n=1). ***Others mentioned generally***: Cultural differences/understanding (n=2), Ethics (n=1), Equal opportunities (n=1), Policies, procedures and legislation relating to equality and diversity (n=1), Fire safety (n=1) CPR (n=1), Incident reporting policies/mechanisms (n=1), Knowledge of Current guidelines (n=3), Enable organisation to meet it's legal duties (n=2), Mental Capacity Act (n=2), Moving and handling (n=1), National standards (n=2), NHS Code of Conduct and Standards of Business Conduct for NHS Staff (n=1), Physiotherapy service standards and policies (n=2), PROMS and outcome measures (n=4), Regulatory bodies (n=1) Reports/ records (n=10), Trust's 'raising concerns -whistleblowing – policies (n=1), Understanding of NHS roles (n=1).

	In practice: Knowledge of Anatomy & physiology (n=1) Appraise and use Evidence based practice/treatments (n=15), Audit, project, research and quality issues (n=6), Basic life support (n=1), Broad range of complex physical and emotional conditions and their impact (n=12) and latest research in this field (n=4) and assessments (n=2), Clinical Risk (n=1), Communication methods (n=3), Health promotions and prevention strategies (n=1), hydrotherapy (n=2), IT and A/V systems and software(n=6) and Electronic patient healthcare records (n=1) technology systems (n=1), Keeping up to date with practice and research and developing competency/using competency framework (n=8), Own training and development needs, CPD (n=11), Statistics to collect for dept/service (n=5),Treatment skills and/or care /referral pathways (n=9) and individualised biopsychosocial approach (n=2) adaptations (n=1), Reflection on practice (n=2), Risk assessment (n=1), when to seek support from seniors/others (n=6) and know limits/score of practice (n=5), Specialist skills (n=1). **Specific knowledge about how legal frameworks impact upon practice:** Understand the legal responsibilities of the profession (n=6), working within legal framework with patients lacking capacity to consent, (n=7), Consent and legal consent (n=5), Working within legal framework (n=1), Legal requirements for record keeping (n=3), Knowledge of safe, competent use of equipment, reporting problems when necessary/appropriate (n=13).

Table 4. Skills required by Band 5 Physiotherapists

SKILLS	Skills with patients: **Assessment** of patient including diverse, complex conditions physically, psychologically, emotionally, terminally ill, life-changing conditions and including diagnoses, prognoses, referring on (n=17), **Communication**: Effective, sensitive communication including modifying methods (verbal/non verbal, patient -including those with communication difficulties, language difficulties, diversity and cultural issues, carer, team, check understanding, informed consent and capacity, oral and written presentations, reports (n=15), **devise and deliver**, goal setting, progress/modify and evaluate evidence-based, individualised treatments/practices (including diverse, complex conditions, treatments which may be distressing to the patient, challenging patients, dying patients) and discharge planning (n=17) and groups (n=5). Use/know when to seek support from senior staff (n=11), Working/coping/managing skills and alertness and self-guarding for stressful environment and challenging patients (n=9), Risk/Safety management (n=12), Manual handling skills (n=7), Competency in using equipment (n=7). **Documentation and record keeping** (n=16). **Others: Other physiotherapy professional skills: Advising**, instructing and educating (e.g. MDT, social care team, GPs, patients, relatives, carers (n=11), **Evaluation** -including recognition and reflection - of own clinical effectiveness and quality of practice (n=8), **Interpersonal** skills with all (eg motivator, negotiator, reassure, encourage involve patient/representative, approachable(n=10), IT/Digital skills (n=7), Ability to collect/collate **statistics**/data (n=5), **Organisational** (time/caseload management, prioritise, delegate, flexibility, initiative, self motivate (n=16), **Physical ability** and frequent moderate/strenuous physical activity, maximum physical support (n=10), **Reasoning** skills (n=10) and critical appraisal (n=3), proactive (n=1), **Research and audit** skills (n=5), Use validated outcome measures (n=1), **Specific skills**: Manual therapy techniques, physical skills (n=8), Hydrotherapy (n=1), Oncology and palliative skills (n=1), **Skill development**, clinical and professional (n=6) **Supervision** skills/develop supervision skills and training by assisting with student supervision (n=10) and assistants, technicians (n=11) and junior staff (n=1), **Team** skills as a member/worker (e.g. physio, MDT, primary care, social care agencies/teams), effective liaison, building relationships, co-ordinating care (n=15). **Generic: Driving** skills (n=5) or driver/access to other forms of travel (n=1).

Table 5. Behaviours for Band 5 Physiotherapists

| Behaviours | **Physiotherapy practice**: *Assessments* (n=17), *Collaborate*, participate, advise, educate, network, liaise and communicate and work with teams/partners, agencies, MDT, signposting, representing and promoting physiotherapy and attending meetings and referring and/or picking up referrals, writing reports (n=16), *Communicate* with others: verbal, non verbal, written, inclusively, with awareness and respect for cultural, linguistic, medical, emotional, psychological and physical factors, distressing news) and use tools/resources where/as appropriate (n=13), *Conduct classes*/groups (n=7), *Consent*: assess capacity and/or gain informed consent (n=8), Formulate, deliver, modify, co-ordinate progress, modify and evaluate evidence-based *individualised treatments/*modalities/ management approaches including providing diagnoses and prognoses and recommendations/referrals and making clinical decisions and interpreting findings and setting goals, discharge plans, referrals (n=17); with mention of with/in partnership patients / carers / relatives and other health professionals and continually re-assess patients to evaluate progress and alter treatment programmes accordingly (n=2), *Manage caseload* and plan care, time management (n=17), Manage patients, and engage them, being sensitive to their needs in challenging conditions and adaptive (n=5), *Manual handling*, carry out safe and effective manual handling and carry out risk assessments as required (n=2), (Be) physically active and use physical effort and physical dexterity, deal with faints/falls (n=11), *Promotion* of the physiotherapy service to all users (n=1), *Support* patients/representative/ carers/relatives throughout the episode of care(n=6), Support/manage/train/*supervise* assistants, OTs students, work experience (n=16), *Triage* and prioritise (direct access) (n=1), *Work* - in 7 day rota, on-call , out of hours, weekend flexible (n=11), respond to unplanned events eg staff shortage/cover colleagues(n=2) and any other duties (n=2), cover other areas of the physiotherapy service when required (n=3), non clinical task as required (n=1), home visits and range of locations (n=3), delivering care as locally and conveniently as possible or appropriate location (n=2), opening and closing of clinics (n=1), maintain an environment that is conducive to the delivery and maintenance of high standard of patient care (n=1). Work unsupervised/lone working (n=9). Work within competence (n=2).

 Professional behaviours: *Adhere* to departmental, employers and professional policies, standards and codes of practice (n=15), Attend statutory and mandatory *training* (n=8), Behave with values and beliefs of the organisation (n=7), *Document* care, treatment records, reports, accurately and in line with departmental, employer, professional and legal standards (n=18), *Equipment*: use equipment safely and competently (n=10), moving/managing/maintaining stock (n=4), *Instruct*, train, advise others (relatives, carers, MDT, colleagues) (n=12), *Report* - bullying and harassment or breaches of policy (n=3), gifts/hospitality to managers (n=1), Respond to/*cope with complaints*, |

Behaviours (continued)	verbal/physical abuse, challenging/distressing behaviour (n=6), ***Risk***: Assess/Manage/Report/Record clinical risk or incidents, including Health and Safety (n=13), ***Safeguard*** children and vulnerable adults (n=9), ***Smoking***: must not smoke/use designated smoking areas (n=7), Support and promote a positive approach to ***diversity and equality*** of opportunity (n=2), Wear identity badge, look out and report for suspicious behaviour (n=1), Welsh, use and/or promote the language (n=2). **Self care and development:** Care for self and/or others (n=6), Carry out and record continuous professional development activities and identify needs, critically appraise, maintain/develop skills, reflection, knowledge and experience and learning activities (n=15). Take part in in-service training, and staff and service development activities (n=15). Participate in staff appraisals (n=14), Seek support, for eg from senior staff, when required (n=10). **Service Improvement:** Computer: Collate statistics and collect/input data (n=8), use intranet (n=1) and computer and computer systems (n=1), Improvement: take part in audit, research and quality activities including new pathways, departmental developments, improvements, clinical governance, reports (n=15), to undertake and present a relevant evidence based project in each rotation (n=2), use validated outcomes (n=1), Promote ***patient and public involvement*** in activities designed to inform service improvement (n=1).

Table 6. Attributes for Band 5 Physiotherapists

ATTRIBUTES	**Frequently included attributes:** Autonomous practitioner (n=12), independent worker (n=2). DBS (n=4) and CRB (n=2), able/has a duty to work with/safeguard children and vulnerable adults (n=4). Experienced (e.g. clinical, audit, research, specific areas of practice (n=15). Flexible e.g. approach, working, hours, service needs (n=7) HCPC registered/eligibility (n=17), diploma/degree physio (n=13), MCSP (n=8). Professional (n=10), Legally Accountable (n=10), Responsible Practitioner (work, caseload, equipment etc) (n=13) and records (n=9), information governance (n=1) safeguarding (n=3), for health and safety, risk (n=7), confidentiality (n=2), regulations (n=1), Trust/Healthboard policies (n=6), infection control (n=4), mandatory training (n=3), to work within level of competence (n=2), responsible for practice education. Responsible for engaging and recording for personal development (n=8) and identifying learning needs (n=2). **Attributes mentioned one-three times:** Able to manage stress (n=1), Able to work legally in UK (n=3), Alert (n=1), Approachable (n=1), Aspirational (n=1), Awareness that one's role and effectiveness affects patients outcome (n=1), Calm (n=1), Caring (n=1), Caring around individual needs (n=1), Committed to qual/improve/research (n=1) Competent (n=1), Communicator (good) (n=2), Confidence with complex/sensitive caseload (n=1), Considerate (n=1), Conscientious (n=1), Dedicated (n=1), Diplomatic (n=1), Emotional Resilience (n=1) Empathetic (n=1), Enthusiastic (n=1), Good team member (n=2), Health clearance (n=1), Inspiring to empower and improve (n=1), Keen (n=1), Kind (n=1), Listener (n=2), Loyal (n=1), Maturity (n=1), Member Paediatric Special Interest group (n=1), Motivated (n=1), Proactive learner (n=1), Reliable (n=3), Respectful; the individuality, values, cultural and religious diversity of patients (n=2), treating others with kindness, humanity and compassion (n=2), Receptive and receptive to new thinking (n=1), Resilient to stress (n=1), Responsive to needs of the community (n=1), Responsible for encouraging adherence to have flu vaccine (n=1), Safe practitioner (n=1) Sole responsibility as lone worker (n=1), Statutory duty of care to themselves and other (n=2), Supportive (n=1), Tactful (n=1), Thoughtful (n=1), Trust Values (n=1), Welsh speaker (n=2), Willing to participate in training (n=1) and to honour working and on-call commitments (n=1) and to work in diverse areas (n=1).

Table 7. Additional information identified during data analyses

ADDITIONAL INFORMATION	**Benefits:** independent/private providers – private medical and dental insurance (n=1), financial awards for joining, finding a job, referring a friend £250-£1000 (n=1), £100 towards HCPC fees (n=1), flexible hours (n=1) and employer assistance programme (n=1). One NHS Trust included city weighting additional money, ticket ballots for sports and arts events, sporting facilities, trust clubs and child care support. **Experience** beyond newly qualified band 5's (n=7): including experience of assistance in student supervision, previous work as a B5 rotational physiotherapist/physiotherapy assistant, already completed 'Flying Start' programme, a specialist/experienced Band 5, recent post-qualifying experience, demonstrable advance in clinical skills from post graduate courses identified in CPD diary. **Pre-registration work experience** in a relevant area. e.g. Nursing home (n=1). **Experience of specific physiotherapy treatments** (n=5): including pulmonary rehabilitation or respiratory, quality issues and audit, wide range of student of musculoskeletal, neuro rehabilitation, care of the elderly, rheumatology, COPD, MSK, Obstetrics and Gynaecology and previous band 5 experience in specified rotations. Lifesaving qualifications (n=1). **Equality, Diversity and Inclusivity:** employee to be physically active and use physical effort and physical dexterity, deal with faints/falls (n=11). One RD included: The employer is committed to ensuring that no job applicant or employee receives less favourable treatment of any EDI grounds. To this end, the organisation has an Equality Policy and it is for each employee to contribute to its success. Driving skills +/- car owner (n=5) or driver/access to other forms of travel (n=1). Ability to travel daily for meetings across a range of sites across a large geographical area (n=1). **Infrequently mentioned:** Exposure to adverse weather, terrain, and unknown/undesirable working environments/locations, animals, tobacco, cleaning of spillages (n=2), risk of exposure to infection, bodily fluids and infestation (n=1), cleaning (n=1), If a student, must be in the final 6 months of course (n=1), Significant caseload (n=1), Gifts/hospitality/gain to be discussed with manager (n=2), May not dismiss or suspend staff under the disciplinary procedures (n=1), may not take annual leave without prior agreement of the manager (n=1), RD not a definitive document (n=1); The post holder may, with their agreement, which should not reasonably be withheld, be required to undertake other duties as required (n=1), Welsh language level 1 (n=1) and comply with the requirements of their organisation's Welsh Language Scheme and take every opportunity to promote the Welsh language (n=2), HCPC preferred (n=1), Band 3 roles

	available for graduates whilst awaiting HCPC registration (n=1), COVID 19 considerations, checks and PPE (n=1), post holder is an ambassador indicating the quality of the service (n=1), Trust's expectation is that all patient-facing staff have an annual flu vaccination and a responsibility to encourage adherence with policy amongst colleagues, visitors and patients, challenging those who do not comply (n=1), may not engage in any outside employment without consent, disqualified from an appointment as a chair/Non-Executive Director of another NHS Trust whilst employed by this Trust (n=1). Need to declare all situations where you/close relative/associate has a controlling interest in a business/activity which may compete for any NHS contracts to supply goods or services to the Trust (n=1).

Appendix IV. Stakeholders attending Webinars and Fora

Please note: some people reported more than one role, team members attended but their stakeholder characteristics are not included.

Main Webinar 1 Practice Based Learning (n=61 registered 48 attended)

Clinicians	n=28
HEI	n=24
Practice Educators/Supervisors	n=11
Researchers	n=6
Students	n=6
Members of a CSP network	n=4
Managers	n=3
CSP employees	n=2
Other	n=2
PPI	n=1

Webinar 2   Digital Skills and Learning (n=31 registered n=19 attended)

HEI	n=13
Clinicians	n=12
CSP network	n=4
Students	n=3
CSP employees	n= 3
Clin Ed/Supervisors	n=3
Researchers	n=1
PPI	n=1

Forum 1 (25 registered, 18 attended (including one group of 4 clinicians/practice educators so not all data captured)

Clinicians	n=4
Practice Educators	n=2
HEI	n=1
Patient/member of the public	n=1
Student	n=1
Private/independent sector clinician	n=1
PT in an 'arms length' organisation	n=1

Forum 2 (24 registered, 19 attended)

HEI	n=5
Clinicians	n=3
Practice Educators	n=3
Managers	n=3
Researchers	n=2
Member of a CSP network	n=2
Patient/member of the public	n=1
Physiotherapy Support worker	n=1
Other roles (NHS Education, Strategic AHP role)	n=2

Appendix V. Additional Demographic Data for the respondents for the Data Capture form.

The following figures shows the additional demographic results for the respondents for the Data Capture form (Figure 2 and Figure 3)
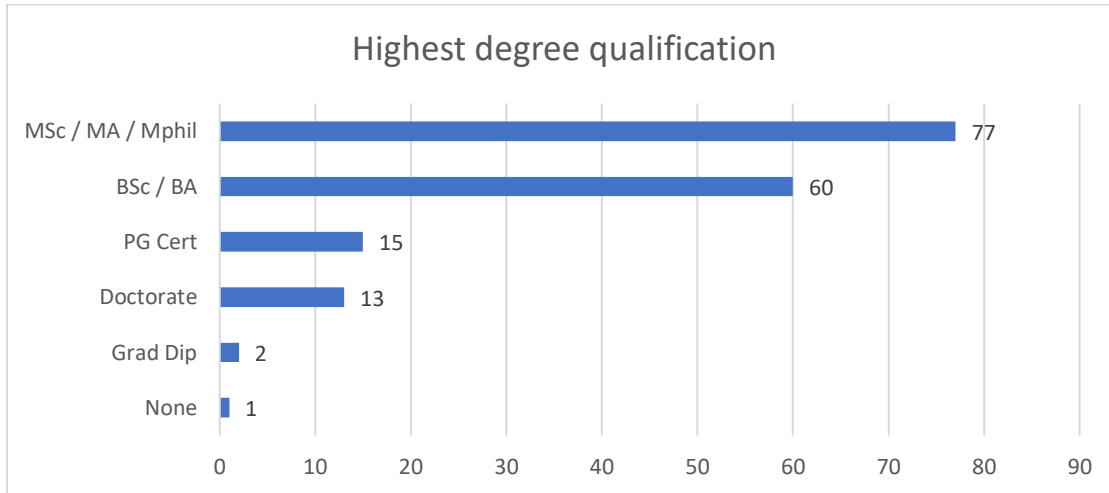

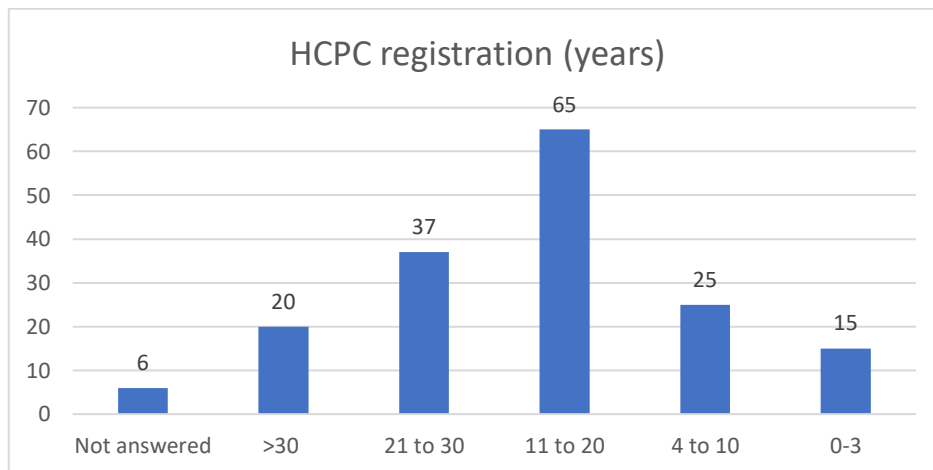Figure 2. Highest degree qualification of the respondents (n= 168)

Figure 3. Years of HCPC registration (n=168)

Other Background Information from Respondents:

CSP steward

FCP (First Contact Practitioner)

MMACP (Member of the Musculoskeletal Association of Chartered Physiotherapists)

I'm a CSP education rep.

Physio in leadership role

Physiotherapist working in arm's length body NHSE (not currently practising)

Physiotherapy leader in policy role

Military Physiotherapist

Military

Clinical Support Fellow

Service User/Lived Experience

GP

Health Psychologist

Clinical Scientist in Vestibular Audiology

Healthcare scientist

post-grad student

CPEP

Education commissioners

I run a company/educational platform which focusses on offering education to Student and Qualified Physiotherapists. I am currently taking a break from direct clinical work

ICS AHP CPEP lead

Senior AHP leader

Multidisciplinary Healthcare Clinic Owner

Professional lead

Recently Practice Development post

redundant educator previously employed in HEI

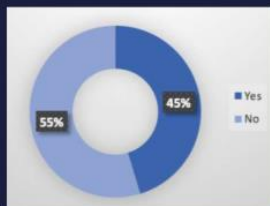Retired HEI senior lecturer

Student placement expansion facilitator

Total responses: 27

KNOWBEST student social media questions

Question 1

Do you feel confident you will qualify ready and prepared for clinical practice ?
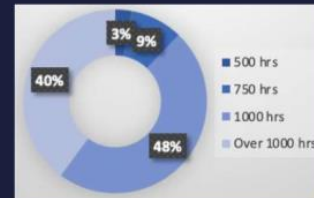
- 45% Yes
- 55% No

n=181

Question 2

Currently students complete 1000 hours of practice based learning before qualifying. How many hours do you think should be included?
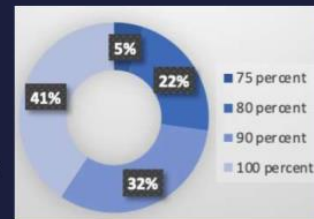
n=238

- 3%
- 9% 500 hrs
- 40% 750 hrs
- 48% 1000 hrs
- Over 1000 hrs

Question 3
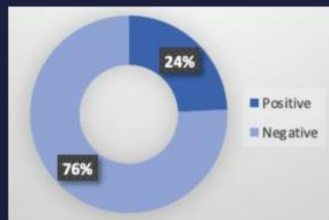
What percentage of hours do you think should be spent doing in-person clinical hours (rather than simulation/virtual placements etc)?

n=239

- 5%
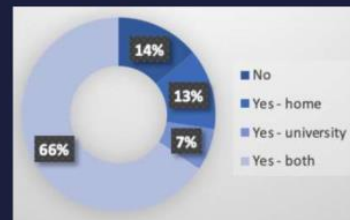- 22% 75 percent
- 41% 80 percent
- 32% 90 percent
- 100 percent

Question 4

Has the pandemic had a positive or negative impact on your readiness to work as a physiotherapist?

- 24% Positive
- 76% Negative

n=231

Question 7

Do you have enough access to technology (e.g. devices, broadband width etc) to support your learning?

- 14% No
- 13% Yes - home
- 7% Yes - university
- 66% Yes - both

n=157

Question 8

When you are on clinical placement have you had enough access to technology to support your learning?

n=132

- 38% Yes
- 62% No

KNOWBEST student social media questions - Long Answers

Question 5
What impact, if any, do you think COVID-19 has had on your education?   n=58

Lack of face to face contact has lead to less engagement (with online lectures all the time), less time to practise hands on skills and techniques, higher stress which is impacting mental health and reduced clinical face to face hours mean less practise of clinical skills
Students feel less confident when going out on placement due to loss of practise time
Some students still haven't seen a single patient and they are in third year, some have complete lack of practise due to placements being cancelled
Quality of teaching online is reduced and doesn't deliver what is needed for a healthcare course
Lack of staff and support on placement means more stress and less opportunities for students

Question 6
Have you identified any benefits or new skills learnt over the last two years during the pandemic?   n=33

Increased leadership skills, due to placement model being changed
Every environment has been more challenging to work in (resilience!!!)
increased opportunities to think outside the box, if you can't access a paitent how else would you deliver PT etc
Better use of technology +++
To be kind!
Telephone assessment skills are greatly improved
More ability to reflect within themselves, and learnt to adapt to technology
Different communication skills such as assessment over the phone
Working in high pressured environments
Infection control emphasis
Adapting to new situations and making the most of bad situations

Question 9
Universities have moved to flexible and online blended learning during COVID- 19. What learning do you think 'works well' online and what needs to be in person?   n=32

Practical skills need to be face to face
Group work can be difficult online
Education of clinical reasoning and professional values works online
Theory based works online but can also be hard to ask questions in big groups/classes
Lectures are mostly okay, but technology enhanced placements are dull and uninspiring
Being in classroom facilitates natural discussion, online takes this away (critical thinking etc)
Blended learning needs to be the approach

Question 10
Tell us one thing that you think would improve pre-registration learning   n=25

Some uni teachings start as if all students have completed sports therapy
More teaching on clinical reasoning
More awareness for the lesser known rotations/options of physio - these don't have to be on placement but teaching about them from the start would be good
Revision sessions provided for those less confident with practical skills/handling etc
Less focus on diagnosis and more on treating what we see
Clinical supervision 1:1
Bringing people into uni that have certain diseases/diagnosis so we can speak to them
Team based learning, better response to student feedback (university)
More support from staff when studying the MSc
No judgement on 'silly' questions when students from less related field eg psych ask questions
Learning multiple approaches to MSK treatment (Maitland/Mckenzie/Cyriax?)

With thanks to Maddie Jackson for providing this infographic of our data.

Appendix VII. Knowledge and skills for digital learning and remote health care required by physiotherapists when they qualify for practice.

[Summarised from discussions with Chris Tack, Anthony Gilbert and Heather Gray]

Knowledge

Use of electronic health records in practice. Key areas of knowledge include:
- Understanding data types (structured vs unstructured) relating to patient records
- Patient specific clinical coding (e.g. Electronic Health Record)
- How the designing of digital health systems can improve efficiency of clinical workflows/pathways
- The importance of data quality to aid effective population level reporting and analytics
- Data performance measurement tools

Digitally-enabled practice and digital therapeutics. Key areas of knowledge include:
- Recognising good or bad online healthcare information
- Role and benefits, limitations and challenges of telemedicine (e.g. remote consultation or virtual care)
- How to support people finding remote care challenging (technological, personal preference)
- Role of the Organisation of the Review and Care of Health-Related Applications (ORCHA)
- Knowledge regarding safeguarding for remote care and treatment of vulnerable children and adults
- Equality, Diversity and Inequality. Knowledge about inequalities in access, e.g. some software systems require expensive/recent phones/laptops. How remote care may remove barriers to care and improve access to care in some cases (e.g. remove travel costs). Where appropriate, provide patient choice before they attend for assessment /treatment.

Decision Support. Key areas of knowledge include:
- Awareness of the use of decision support systems in digital tools to guide practice
- Awareness of algorithms used to alert staff (e.g. Clinical/nonclinical risks, Resource allocation)
- Awareness of machine learning/ AI systems within decision support tools
- Professional clinical responsibility associated with decision support technology

Skills

Key abilities to have include:
- Being able to determine when remote/virtual appointments are appropriate and when appointments/treatments need to be in-person. This may need to be a hybrid appropriate i.e. first appointment in person
- Being aware of own biases and how they impact upon remote care
- Being confident to work with remote supervision
- Being able to demonstrate an empathetic screen presence and to use camera effectively to aid communication
- Being able to assess risk and safety (for example, during an objective assessment)
- Recording structured and unstructured data
- Using digital tools to record data (e.g. voice recognition dictation, touch screen interfaces or wireless medical devices)
- Using the electronic health record to improve health system performance
- Setting up access to patient data for self and others
- Teaching others on how to use digital healthcare systems (e.g. NHS app, online appointments)
- Recording treatment episodes in line with personalised care plans

Digitally-enabled practice and digital therapeutics. Key abilities to have include:
- Using online booking systems (e.g. Managing appointment (i.e. booking, rescheduling cancelling)
- Directing patients to approved online healthcare information
- Using, prescribing and recommending mobile health applications (mhealth) including NHS App
- Capturing data during patient contact (e.g. PROMs, wearable devices, remote monitoring)
- Using the NICE Evidence Standards Framework for digital technologies
- Using online communication platforms (e.g. video conferencing, e-learning webinars).

References

1. Daudt HM and et al., *Enhancing the scoping study methodology: a large, inter-professional team's experience with Arksey and O'Malley's framework.* BMC Med Res Methodol, 2013. **13**(48).
2. Arksey H and O'Malley L, *Scoping Studies: Towards a Methodological Framework.* International Journal of Social Research Methodology: Theory & Practice, 2005. **8**(1): p. 19-32.