A Practical Guide to Incorporating Pain Education

into Pre-Registration Curricula for Healthcare Professionals in the UK

Draft

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

1

Acknowledgements: Contributors and document development

This document has been developed and shaped by a wide range specialists and patient representatives who are passionate about pain education. The original working group, led by Professor Nick Allcock, developed the core curriculum outcomes and wrote the documents foundation. Following the IASP Interprofessional Core Curriculum Outline, the group amended the focus of the publication to be a companion document to the IASP curriculum and provide a practical guide and examples of educational practice. The original working party were:

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

2

Foreword

Draft

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

3

Content   **Page**

Introduction to this publication

Nick Allcock & Sailesh Mishra

Section 1   Core curriculum outcomes

Members of the working group

Section 2   Approaches to pain education

Members of the working group

Section 3   Case studies

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

Section 4   Final summary

References

Additional resources

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

5

Introduction:

Nick Allcock and Sailesh Mishra

1.Background

The IASP 2018 Global Year for Excellence in Pain Education aims to bridge the gap between knowledge and practice with the aim of making a difference in four key areas; public and government education, patient education, professional education and pain education research. Professional education is identified as one of the four key areas to target due to the lack of time dedicated to, and lack of competencies for pain education in undergraduate health curricula.

Pain is a burden on health and social care systems globally. In response to this many countries have produced National Pain Strategies. IASP analysed pain strategies and action plans from 19 countries to produce key recommendations, one of which is that health professionals have access to pain education.

In the UK, The Chief Medical Officer for England's report (2009) highlighted the challenges that face health and social services in providing services for the estimated 7.8 million people with chronic pain. The report identified eight recommendations, the first of which was that pain education should be included in the curricula for all healthcare professionals.

Despite this, pain remains poorly represented in many health students' undergraduate programmes. The provision of undergraduate education is variable across different healthcare professions and healthcare education providers. The British Pain Society (BPS) Education Special Interest Group's survey of undergraduate pain education identified that the generally low number of hours dedicated to pain education (average total number of hours in a course 12.0 hours, range 2.0-158.0) were predominantly delivered via lectures to groups of students from a single discipline. The variation noted within professional groups and across institutions suggested a lack of a consensus view of the appropriate pain education that should be offered (Briggs *et al.* 2011).

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

6

The *APPEAL study* (Advancing the Provision of Pain Education and Learning; Briggs et al 2015) also highlighted variations and limitations in pain education across medical schools in Europe including:

- Pain teaching is inconsistent and limited, and typically incorporated into other subjects
- There is no dedicated teaching on pain in 69% of medical schools in Europe
- Even where pain teaching is dedicated and compulsory, only 0.2% of undergraduate medical teaching is allocated to pain
- Pain teaching is not included in the curriculum at all in 17 medical schools
- Teaching and assessment methods are traditional lectures with low uptake of practical methods
- Pain topics are poorly documented in the undergraduate medical curriculum

There were however some more encouraging findings in France and Germany. In France pain education is a stipulated requirement of a medical degree and 27 out of 31 medical schools have dedicated teaching on pain and, in all but one school, that teaching is compulsory. Similarly, in Germany, recent guidelines mandate the inclusion of pain in the curriculum through standardised learning objectives and questions on national examinations; this has resulted in 14 out of 35 schools having dedicated modules on pain.

In the UK, regulators of the healthcare professions (e.g. General Medical Council, Nursing & Midwifery Council) set standards for the nature and provision of education. Universities use these frameworks to develop academic programmes that are subsequently approved at university level and by the professional regulator. The standards are focused on principles rather than content leaving it to the higher education institute to decide what pain education to include. The British Pain Society Education Special Interest Group decided to develop a core multi-professional curriculum to outline what we considered essential pre-registration knowledge and skills in pain management.

Simultaneously, a similar project was being undertaken by the IASP Education Initiatives Working Group who published the *Interprofessional pain curriculum outline* in August (IASP 2012) which is based on the four components of the IASP core curriculum. The IASP outline is aimed at academic staff supporting health science students in their first professional programme and aims to facilitate shared learning opportunities for students from more than one discipline (e.g. dentistry, medicine, nursing, occupational therapy, pharmacy, physical therapy, psychology, and/or social work). The

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

7

curriculum outline provides a list of suggested topics for interprofessional learning that can be developed further. Uniprofessional curricula are available from the IASP website at: https://www.iasp-pain.org/Education/CurriculaList.aspx?&navItemNumber=647

2. Why this document is needed ?

This curriculum set out to be interprofessional, and was created by a multiprofessional group who share a keen interest in promoting effective and innovative pain education. This document provides a British perspective on a global issue, and makes use of a wide range of case studies to help promote engaging, enjoyable and where possible interprofessional pain education.

3. Scope of this document

This document provides practical guidance that complements the IASP Interprofessional pain curriculum outline (IASP, 2012) for those interested in developing or enhancing pain education in pre-registration healthcare curricular. The objectives are to;

- raise the profile of pain education amongst UK professional bodies, educators, health regulators, and other key stakeholders .
- endorse the value of interprofessional learning in pain education
- present case studies that highlight a range of educational approaches
- provide example learning outcomes that describe the essential knowledge, skills, attitudes, and values for working effectively with people in pain

4. How to use this document

 This document is developed with the vision to provide a useful guide and reference source to many pain educators who teach pre-registration healthcare professionals in multiple specialities within their clinical and academic role. While this is by no mean an exhaustive textbook to pain education, it is aimed at providing educators with practical strategies to maximise their learning outcomes. You will find a list of additional resources in the appendices.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

8

Draft

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

9

Section 1 Core curriculum outcomes

Members of the working group

Introduction

The following outcomes are considered necessary for all healthcare practitioners in the UK and therefore should be incorporated into all pre-registration programmes. The outcomes were developed by a multidisciplinary working group of pain practitioners and educators (see Appendix 1). Potential outcomes were initially identified by a working group and then discussed and refined before wider circulation, comment and further refinement. The outcomes complement the content in the IASP *Interprofessional pain curriculum outline* (IASP 2012) and represent core multi-professional outcomes that all healthcare practitioners should achieve before professional registration. The outcomes are not considered exhaustive as individual professions may have specific outcomes that they consider important for professional practice, in which case these need to be added to the outcomes listed here.

Outcomes

1. Multidimensional nature of pain

Pain is a complex, biopsychosocial phenomenon and it is important that practitioners are able to:

1.1. recognise pain as a public health issue and that, in today's economic climate, cost/benefit ratios need to be clearly understood

1.2. understand the epidemiology of acute, chronic and cancer pain

1.3. recognise barriers to good pain management from individual, family, health organisation and societal levels

1.4. recognise the commonly used definitions of pain and be able to describe the implications of these definitions for clinical practice

1.5. describe and critique commonly proposed theories of pain

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

10

1.6. recognise that, while acute pain may be a symptom, chronic pain may be seen as a condition in its own right

1.7. describe the contribution of biological, psychological and social factors to individual variation in pain perception, behaviour and expression

1.8. understand the evolutionary significance of human pain response systems

1.9. reflect on personal attitudes, beliefs and values and identify how these may influence care.

2. Mechanisms of pain

A basic knowledge of pain physiology is important to be able to appreciate the differences in how people perceive pain and to understand the rationale for pain treatments. Practitioners therefore need to be aware of the main processes involved in pain:

2.1. be aware of the main structures involved in pain transmission, transduction, perception and modulation and recognise how they interact in the pain experience, and that these can be dynamic (plastic)

2.2. recognise the differences between nociceptive pain and neuropathic pain and the different mechanisms (peripheral and central)

2.3. understand the principles of the gate control theory, and of neuronal inhibition and excitation which have led to modern concepts of pain modulation and neuroplasticity.

3. Psychosocial issues

Psychosocial factors play an important role in how an individual experiences and responds to pain. Pain, in turn, has significant psychosocial consequences. If not appropriately managed, such factors can contribute to unnecessary suffering and lead to an increase in pain-related disability and chronicity. Therefore, the practitioner should be able to:

3.1. appreciate that there are significant individual differences in pain experience and pain responses

3.2. understand that social and psychological factors act in association with biological factors to influence an individual's pain experience and pain behaviours in both acute and chronic pain

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

11

3.3. understand that describing a pain as 'psychological', 'psychogenic', or 'psychosomatic' may be stigmatising and fails to take sufficient account of the complex biopsychosocial mechanisms that underlie all pains. The same may be true when a pain is viewed as a "medically unexplained physical symptom" (MUPS) or when a pain is assumed to be a product of 'somatisation'

3.4. know that the psychological influences on pain experience include the person's behavioural responses, thoughts and beliefs as well as emotional factors and attentional processes

3.5. understand that psychological factors can be shaped by the individual's past experiences and by social influences: e.g. via the family and the wider culture

3.6. appreciate that the clinician's communications and behaviour, and the clinical context itself, can influence psychological processes and, thereby, the person's pain experience and behaviours

3.7. understand that individuals may employ a wide range of coping strategies to avoid and reduce pain and appreciate that, while some strategies may be adaptive, others may be maladaptive

3.8. appreciate that pain can have many negative psychosocial consequences, directly or indirectly impacting upon mood, identity and self-esteem, social roles and responsibilities, hobbies and leisure activities, and occupational and financial circumstances

3.9. understand that pain-related distress and disability may be a consequence of psychosocial (risk) factors and not simply of the pain itself

3.10. understand that the psychosocial factors that contribute to the development of pain may be different from those which maintain it

3.11. understand that health professionals, in assisting people affected by pain, should consider and address not only the pain itself but also any remediable risk factors and the negative consequences of pain.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

12

4. Ethical standards in pain management

Good pain management is ethically and morally imperative and therefore it is important that practitioners can:

4.1. work together and advocate for people in pain to improve their lives, through demonstrating cultural inclusiveness, empathy, professionalism, innovation and excellence in care throughout

4.2. treat people in pain and their carers and relatives with equal respect, importance, dignity, compassion, sensitivity and kindness

4.3. provide an appropriate pain explanation avoiding the use of unhelpful terms and descriptions

4.4. in the absence of a clear diagnosis, provide useful information in a way that is respectful of the person with pain's perspective and allow the person to move towards self-management

4.5. describe the important role of the health professional in legitimising the patient's experiences and in providing social support in coping with pain

4.6. discuss the fundamental differences in the assessment and management of pain in children and in older adults and, if involved in managing pain in these groups, demonstrate the knowledge to assess and manage them appropriately

4.7. assess and manage people who are in pain and not able to convey their experiences because of physical, psychological and/or cognitive impairment

4.8. discuss the importance of evidence-based practice in the management of pain

4.9. communicate to appropriate authorities, in a professional and appropriate manner, areas where an improvement in service is warranted

4.10. describe situations and circumstances in which health professionals should refer a patient for more specialist assessment.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

5. Pain assessment

Pain cannot be adequately managed if its impact is not assessed regularly using valid and reliable tools. Acting within their sphere of competence, practitioners therefore need to be able to:

5.1. understand that, because pain is a subjective experience, the most appropriate way to assess it is through self-report

5.2. conduct a comprehensive assessment of pain using valid and reliable tools and be able to act on this assessment appropriately, based on best available evidence

5.3. understand that, in acute settings, pain should be considered as the fifth vital sign and should be measured alongside temperature, pulse blood pressure and respiration if appropriate

5.4. in patients with chronic pain, conduct a comprehensive assessment of the individual's pain-associated disability and distress, including their activities of daily living, fitness, function and mood

5.5. be aware that a range of tools exists to assess pain and its consequences which are appropriate to the nature of pain, the person with pain and the context in which they are used

5.6. identify groups where verbal reporting of pain may be restricted, including children and those with cognitive impairment or learning disabilities, and be aware of alternative forms of assessment.

6. Communication

Effective communication is essential to good pain practice and therefore practitioners need to be able to:

6.1. assess an individual's understanding of pain and their treatment options and identify myths, fears and misconceptions that may act as barriers to effective management

6.2. use a person-centred perspective to formulate appropriate treatment plans

6.3. discuss and explain the evidence underpinning commonly used pain management approaches in appropriate language to enable the individual with pain to make informed choices

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

14

6.4. recognise the roles of the members of the interprofessional team dealing with pain and be able to communicate effectively

6.5. recognise the contribution of family, carers, voluntary and support groups/agencies in supporting people with pain and be able to communicate effectively.

7.0 Principles of pain management

7.1approaches to pain management

A range of possible approaches are available to manage pain. Practitioners need to be able to:

7.1.1 negotiate, collaborate with and agree management plans with the person affected by pain and their carers/family

7.1.2 critically appraise the evidence underpinning possible pain interventions and devise appropriate comprehensive treatment plans including pharmacological, physical, psychological and complementary approaches

7.1.3 understand the concept of a placebo and its implication for practice

7.1.4 understand that early management is important to promote mental and physical wellbeing, maintain physical, psychological and social functioning

7.1.5 describe the multiple elements needed for a comprehensive treatment/ rehabilitation programme and understand the difference between a multidisciplinary team and an interdisciplinary team

7.1.6 identify and apply evidence-based guidelines to contemporary clinical practice

7.1.7 be aware of the range of available pain management services including community and secondary care-based services.

7.2 Self-management

Self-management is extremely important in both acute and chronic pain. In acute onset back pain for example, self-management improves outcomes and in chronic pain self-management enables people to maintain a better quality of life despite the pain. Therefore, the practitioner should be able to:

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

15

7.2.1 discuss where self-management is a priority and should be encouraged and supported

7.2.2 describe the key approaches to self-management in relation to pain

7.2.3 describe the role of pacing and activity management

7.2.4 signpost evidence based and appropriate schemes to ensure that people with pain receive suitable information and/or education

7.2.5 recognise the importance of delivering high quality information in terms that people with pain can understand

7.2.6 evaluate when a person is not self-managing and assess for the triggers that have brought the person in contact with a health professional again.

7.3 Non-pharmacological intervention

Non-pharmacological interventions are an important component of effective pain management. There are a wide range of physical, psychological and complementary pain interventions and the practitioner should be able to:

7.3.1 implement, evaluate and review evidence-based non-pharmaceutical interventions to manage pain relevant to their area of practice

7.3.2 be familiar with where to access support for non-pharmacological interventions

7.3.3 describe the role of psychological interventions in pain management.

7.4 Pharmacological interventions

Pain relief can be achieved using medicines, often in combination, and practitioners need to be able to:

7.4.1 know the clinical pharmacology (i.e. pharmacological effects, routes of administration, side effects and their management, cautions, contraindications and drug interactions) of analgesic medicines as relevant and applicable to the practitioner's area of practice. Medicines include paracetamol, non-steroidal anti-inflammatory drugs (NSAIDS), opioids and adjuvants such as antidepressants, antiepileptics, 5-HT$_1$ receptor agonists, corticosteroids, local anaesthetics and muscle relaxants

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

16

7.4.2 be aware that when some medicines are used in combination they have a synergistic effect and that this may improve pain relief and minimise side effects

7.4.3 understand the principles of The World Health Organization analgesic ladder (see http://www.who.int/cancer/palliative/painladder/en/) and the strengths and weaknesses inherent in this approach

7.4.4 understand that regular evaluation is essential in monitoring and optimising drug therapy in a safe and effective way

7.4.5 know that aberrant drug behaviours or problem drug use does occur but that this is relatively uncommon, and be able to recognise signs that may suggest problem drug use

7.4.6 differentiate between physical dependence, substance use disorder, misuse, tolerance, addiction and non-adherence.

Draft

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

17

Section 2 Approaches to pain education

Paul Wilkinson , Newcastle University.

All healthcare professions need to prepare their students to be fit for purpose and for practice through the development of a wide range of professional competencies. Competency in the appropriate knowledge, skills and attitudes to manage pain – and the disability associated with pain – is a challenging goal. Nevertheless, IASP and an expanding number of influential and multidisciplinary groups in healthcare and science, including the British Pain Society, give strong support to education on pain.

The IASP was the first organisation to develop core curricula for y pharmacy, psychology, physical therapy, occupational therapy, nursing, medicine, dentistry, social work, and interprofessional education, all of which have been updated in 2017 for the global year of excellence in pain education In the UK, the work of multidisciplinary and voluntary groups of health practitioners, scientists and patients' pain associations that are in line with the IASP and BPS, have recommended that pain is an integral part of all professional education. For example, reports by Chronic Pain Services in Scotland (McEwan 2004), the Chronic Pain Policy Coalition (a UK forum for patients, professionals and parliamentarians to influence policy and strategies on pain) and the Chief Medical Officer (2009) of the UK, have recommended that 'all in early professional training should be exposed to a formal input on chronic pain'. All have emphasised that competency in pain management is a goal that must be a universal requirement for registration as a healthcare practitioner. Competencies for pain education have been developed (Fishman 2013) to address fundamental concepts in pain education which serve as the basis for developing pain education curricula.

Core curriculum outcomes provided in this document along with IASP core curricula outlines and pain competencies can be used to map against health curricular to identify gaps and provide structure to where improvements are needed.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

18

Recent large-scale surveys have clearly identified inadequate education, as well as inappropriate attitudes and beliefs of staff, to be a significant contributing factor in the 'woeful inadequacies' of pain management, both internationally (Bond et al 2007) and in the curricula of healthcare professionals in the UK (Briggs et al 2011) and across Europe (*APPEAL,* Briggs et al 2015). In 2009, the CMO report highlighted that teaching at undergraduate level in particular is 'patchy and inconsistent', and called for the inclusion of training in chronic pain in the curricula of all healthcare professionals. However, the evidence available (in the UK and Canada) suggests that pain is not a significant element in the education of many healthcare professionals, being described internationally as 'not sufficient to cover the needs of the graduate entering practice' (Bond et al 2007).

In the UK, a survey of ten higher education institutions providing health profession education across eight healthcare professions found that education on pain in many current undergraduate courses comprised less than 1% of the overall curriculum (Briggs et al 2011). Table 2.1 shows the variations in time that healthcare professionals spend in their courses learning about pain.

Table 2.1 Average pain content in undergraduate curriculum (n=65) (Briggs et al 2011)

Discipline	Number of curricula examined	Hours in curriculum(median)	Minimum - Maximum
Dentistry	2	9.5	9.0-10.0
Medicine	9	13.0	6.0-50.0
Midwifery	5	6.0	4.0-39.0
Nursing (all branches)	30	10.2	2.0-36.0
Adult	12	13.0	5.7-36.0
Child	9	10.4	3.8-24.5
Learning disabilities	2	16.4	2.8-30.0
Mental health	7	3.5	2.0-23.0
Occupational therapy	5	14.0	9.0-28.0

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

Pharmacy	3	8.0	6.0-12.0
Physiotherapy	9	37.5	5.0-158.0
Veterinary science	2	27.4	8.8-43.0
Overall	65	12.0	2.0-158.0

The survey also found that teaching on pain is often delivered piecemeal as part of other topics and is rarely taught as a discrete element, with wide variations in the pain content of the curriculum between different institutions. Treatment of pain requires a multidisciplinary approach, but the evidence suggests that undergraduates learn about pain management in a fragmented manner, often in isolation from other professional groups.

The present levels of pain education are therefore wholly incapable of meeting the demands of pain care in a population which is predicted to continue to expand substantially over the next decades.

3.1 Interprofessional pain education

Learning with other professional groups, in an interprofessional education (IPE) model, is supported by the recent edition of the IASP interprofessional, undergraduate pre-registration core curriculum on pain (IASP 2012). It provides curriculum topics under each component that are common in pain management. Writing in the British Journal of Pain, Carr and Watt-Watson (2012) noted:

> 'Pain assessment and management provide an excellent model for interprofessional teaching and learning because of pain's prevalence across divergent groups and its potential complexity requiring interprofessional involvement'.

IPE keeps the patient at the centre of care (Karargyri 2012) and promotes good team collaboration and communication skills, which are key requisites for providing high quality pain care. IPE helps students to learn with, from and about each other in a classroom or clinical setting (Centre for The Advancement of Interprofessional Education 2002).

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

20

The IASP undergraduate curriculum is international in application. In the UK, the CMO's call and the recognition of pain to be included in all healthcare profession education, as well as the establishment of the Faculty of Pain in the Royal College of Anaesthetists and the Royal College of General Practitioners choice of pain as a clinical priority area for 2011-13, have all highlighted the need to improve education of pre-registration healthcare professionals about pain and its management.

3.2 Learning outcomes and expectations of our students.

Amelia Swift, Kate Thompson

Educational standards in the United Kingdom are governed by the Quality Assurance Agency (QAA), which aligns with the European Higher Education Area framework. These standards include the statement that 'programme outcomes align with the relevant descriptor in the relevant framework for higher education qualifications'. Relevant to this curriculum document is the level 6 and 7 descriptors, which relates to the award of a Bachelor's degree with Honours and Masters degrees (http://www.qaa.ac.uk/en/Publications/Documents/qualifications-frameworks.pdf.). The health student must attain a level of knowledge that allows them to:

- develop an understanding of a complex body of knowledge, some of it at the current boundaries of the discipline
- have the qualities (as employees) needed to exercise personal responsibility and make decisions in complex and unpredictable circumstances

This acts as a guide to the level of achievement we are expecting of our qualifying students and demonstrates that learning must go beyond knowledge, and teaching must go beyond content. Therefore, this document emphasises enquiry based learning strategies, and interprofessional learning.

The standards for education for all health professions, and the competencies, proficiencies, or standards expected of a registered practitioner do not give explicit guidance on pain knowledge, skills, and attitudes. However, all of these documents make it clear that the practitioner must be able to communicate effectively with their patient or client, make a holistic assessment that

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

21

incorporates biological, psychological, social and cognitive domains, and work with the patient and other professionals to ensure that evidence-based treatment is provided promptly and evaluated. In other words, all professions are expected to have a sound understanding of pain, its impact on the individual, and effective management strategies.

The lack of explicit pain content noted in many curricula (Briggs *et al* 2015) suggests pain is often taught in relation to other content and there are not always explicit pain learning outcomes. The existence of this pain curriculum makes it more likely that those with an investment in pain education will raise the profile of pain learning by using explicit learning outcomes. The QAA stipulates that learning outcomes must be assessed, and this provides one mechanism to ensure that pain learning takes place. It also makes it imperative the learning outcomes clearly relate to the skills and attributes that the health professional requires in practice, and that assessment strategies enable the authentic assessment of these outcomes. This document provides some example learning outcomes and assessment strategies that illustrate this principle.

3.3 Assessment of learning:

Our aim is to promote deep learning and develop long lasting learning with clear relevance to practice. The assessment strategy employed should reflect this. The assessment can be developed by exploring what you want the student to be able to do with the learning when they are in practice, but it might also focus on the skills that the student is acquiring in relation to lifelong learning.

An assessment strategy should include both a formative and summative element. Assessment must be accompanied by meaningful feedback within the constraints of the programme. Higher Education Institutes tend to allocate staff in terms of contact hours rather than assessment hours, and this creates a tension between the desire to develop authentic assessment and give quality feed-forward feedback, and the need to demonstrate core learning outcomes have been met using more superficial and easy to administer processes.

It has long been known that students are strategic in their learning - they learn what they know will be assessed (Gibbs 2006), and self-funding has led to an increase in students working while studying,

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

22

thus reducing the time available for self-study and assignment preparation. There has also been a move to modular courses, many of which may be 10 or 20 credits in size and reduces integration of content across a programme. It can be a challenge to create an assessment strategy that has the essential elements, these being:

● Teaching the students how the assessment works - we want to evaluate how well the student can achieve the task set, not how well they understand how the task works.
● Allowing differentiation based on aptitude, skill, and effort of the student
● Ensuring the assessment is authentic (supports the use of the knowledge or skill in the real world)
● Providing opportunity to learn through assessment (summative feed forward)
● Indicating the level of achievement (summative feedback)
● Indicating the level of competence an employer can expect of the qualifying student
● Having parity with similar assessments nationally

Each of the teaching and learning strategies in the following section will provide an example of such an assessment.

3.4 Evaluation

Evaluation can be used in a number of ways, at macro and micro level to determine the extent to which an organisation, department, programme, module, or activity is achieving its aims. The purpose varies depending upon the lens applied to the evaluation. It can be used as a tool to demonstrate the economic benefit of a specific set of learning activities, or to persuade stakeholders that the learning activity is meeting their needs. Evaluation can be used to determine whether the staff and resources are adequate for the aim of the activity, but most commonly it is used to drive continuous improvement in the design, delivery and outcomes of a teaching activity.

Evaluation should at a minimum tell us
● That assessment is well matched with aims and learning outcomes
● What message is conveyed to learners by the assessment scheme

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

- That the learning outcomes are authentic and appropriate to the future work of the student as competent employee
- That the teachers and teaching methods are effective

Although many programmes of learning include regular evaluation by questionnaire these do not usually provide sufficiently detailed perspectives on the quality of the student experience or their learning. Additionally, routine evaluation methods have notoriously low response rates, which results in an unrepresentative view. It is therefore a good idea to build formative evaluation into a learning activity using one or more of the methods suggested below. Each of these is used in one or more of the case studies.

- Evaluation of marks obtained and trends in marks relating to changes in the delivery or content of the activity.
- Engagement in terms of attendance, participation, or attrition
- Confidence level surveys
  - Each student is given a list of learning outcomes for the activity, each of which is phrased so that the student can respond to how confident he or she is about the knowledge or skill that is being addressed. The exercise can be pre and post the learning activity to demonstrate increased confidence. However, confidence or perception of learning does not always equate with increased knowledge and skill which may need testing through formative or summative assessment.
- Stop, Start, Continue student feedback
  - Students are given coloured post-it notes (Red, Amber, Green) and asked to write one statement on each to advise the teacher about something he or she should stop doing (red), start doing (amber) and continue doing (green). The students stick these to a wall in the classroom and can view each other's comments. The same process can be conducted via Padlet allowing students to vote on each other's comments.
- Peer observation

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

24

- A colleague is asked to sit on a taught session with either an open brief or a template to observe the session with a view to providing feedback on what appeared to work well and areas for improvement. The teacher can ask for a broad perspective or for the observer to focus on a specific issue.

- Diminishing lists of questions
  - The student is asked to write a list of questions before the learning activity commences. These represent what he or she wants to get out of the session and will indicate to the teacher what the students' expectations are. During the session the student crosses out questions that have been addressed, allowing the teacher to see what learning has taken place, and which expectations have not been met.

- Dynamic lists of questions
  - Like the above but this time the student remarks on how a question has changed as a consequence of the learning activity. For example, he or she might start with a question "I want to know how to assess acute postoperative pain", and at the end of the session might say "I know how to vary the assessment according to the patient's response".

- Learning logs
  - A log is a list of activities that the teacher or student engaged in, providing detail on what the activity was and how long it took. These can be used to identify what learning activities the students are engaged in outside of the direct contact time with a tutor. These are quite onerous to complete and so are generally used for short periods of time, perhaps 2 or 3 days. The log can help both the student and the teacher to evaluate the use of resources. A log can be evaluated quantitatively with students entering data in a shared excel spreadsheet for example.

- Journal or diary
  - A journal or diary is less factual than a log. The student usually writes retrospectively providing a summary of learning. These can be particularly helpful in evaluating practice-based learning activities. To be used as an evaluative tool a qualitative analysis approach is usually required.

- Buzz groups

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

25

- ○ Students are dividing into small groups to discuss a specific question. Each group can feedback a summary of their discussion live to the whole group or using electronic (and more anonymous) methods, for example a short written statement, Padlet ™, or Twitter ™ .
  - ○ Snowball - in this form of a buzz group each person writes their own statement before the group gradually increases in size. This ensures quieter group members have a chance to be heard.
- ● Interrupted lecture
  - ○ During the lecture the teacher stops the class and asks the students to write a brief note about what they were just doing (e.g. pondering the answer to a question, formulating a question, day dreaming, looking at Facebook). This can be repeated later in the session and at the end the responses gathered up for analysis.
- ● Chain notes
  - ○ The lecturer writes a question on an envelope and asks each student to respond in writing - posting their answer into the envelope. This is an excellent way to gauging learning.
- ● Brief targeted questions
  - ○ Using post-it notes, Padlet ™ or Twitter ™ students are asked to provide a brief answer to an evaluative question, for example 'write down one thing that you learned in this session', or 'Write down one question you have unanswered at the end of this session'.
- ● Word clouds
  - ○ Using a similar approach, students are asked to provide two lists of words relating to positive and negative aspects of the learning experience. The words are entered into a word cloud generator (see http://www.betterevaluation.org/en/evaluation-options/wordcloud for guidance). The most frequently used words appear larger in the cloud. Although this gives a quantitative indication of what is important to the students it gives not qualitative data, in other words - the most frequently occurring word doesn't necessarily represent the most important concern.
- ● A letter to next year's students

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- ○ Students are asked to write a letter of advice for next year's students in which they describe the best parts of the learning activity, the less good, what was difficult, what was engaging, what was not, how they should prepare etc. This activity can be done by students singly but is better if a consensus view is reached by the group and a joint letter constructed. Ideally this is a timetabled activity facilitated by the students themselves.
- Interviews or focus groups
  - ○ For more robust evaluation, and therefore most commonly used as a summative evaluation, the teacher, or an independent third party can interview students to discuss important aspects of the teaching and learning experience.
- Stakeholder perspectives
  - ○ Health professions students will often go into placement and eventually employment. It is important to consider the perspective of the employer on the suitability of the students' education programme in meeting their needs.

3.5 Practice based pain education

The Physiotherapy Pain Association (http://ppa.csp.org.uk/) and the Royal College of Nursing (https://www.rcn.org.uk/professional-development/publications/pub-004984) have produced profession specific knowledge and skills frameworks for their respective professions working with people in pain. These knowledge and skills frameworks provide levels of competency for both unregistered and registered nurses, and for physiotherapists from the graduate through to expert level.

Supporting learners to incorporate their theoretical pain knowledge and simulation experiences with personal, practical clinical experiences are essential for them to develop tacit knowledge, achieve the pain specific and professional competencies described in these frameworks. Studies of pre-registration nursing, medical and physiotherapy (REFS PENDING) students preparation for autonomous practice repeatedly report that without personal, practical , clinical experiences with particular patients, such as those in pain, their sense of preparedness for working with these populations in future is undermined (REF PENDING). This places significant responsibility upon

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27

clinical educators to support learners work with these patients, which can be particularly
challenging. To date there is limited evidence exploring these challenges   or offering advice on how
to optimise practice based learning with patients in pain. Thus while we acknowledge the
importance of practice based learning it is beyond the scope of this particular publication to address.

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

28

Section 3: Teaching Methods: Case studies

Introduction

This section describes a range of approaches used to the delivery pain education to offer some options for those thinking about how to enhance their teaching and learning. Briggs *et al.* (2011) found that lectures (n=65, 87.8%) and case studies (n=58,78.4%) dominate as learning strategies used in pain teaching, although student-led approaches such as enquiry or problem-based learning were a feature of some courses (41.9%). Technology was also used to support learning with 39.2% describing an element of electronic learning (e-learning); blended learning (the combination of traditional teaching methods with e-learning) was used by a third of respondents. This section describes some of the approaches which may be used as an alternative to lectures and didactic approaches that can promote surface learning. Pain education offers great opportunities for blended learning, interprofessional education and other techniques that allow skill rehearsal and deep learning experiences. Some of the examples below have been delivered in one discipline but could equally be used for other disciplines or as a basis for interprofessional learning. Each of the sections below will link to one or more of the core curriculum outcomes.

Section 3 comprises:

3.1 Problem-based learning
Paul Wilkinson, Maggie Whittaker, Amelia Swift

3.1.1 Case study: problem-based learning
Maggie Whittaker

3.2 Mapping pain content across a curriculum: integrative curriculum design
Amelia Swift

3.2.1 Case study: Mapping and embedding pain education within nursing programmes
Sharon Wood, Michelle Briggs

3.3 Active learning using a biopsychosocial model
Amelia Swift

3.3.1 Case study: active-learning using a biopsychosocial model
Sally Curtis, Kathleen Kendall, Laura Dennison

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

3.1 Problem-based learning

Maggie Whittaker (Physiotherapy), University of Essex; *Paul Wilkinson (Medicine):* Royal Victoria Infirmary, Newcastle; *Amelia Swift (Nursing)* University of Birmingham

Problem-based learning (PBL) is described by Savery (2006 p12) as:

> 'an instructional learner-centred approach that empowers learners to conduct research, integrate theory and practice and apply knowledge and skills to develop a viable solution to a defined problem'.

PBL engenders team working, clinical reasoning and problem-solving amongst students by presenting students with a problem to be resolved by them within a time-frame. PBL also promotes deep rather than surface learning and it is important that the assessment strategy rewards this deep learning: students adopt a approach to learning that will enable them to meet the demands of the assessment (Loyens *et al.* 2013).

Problem-based learning was developed in the 1960s and 1970s as part of the education programme for students in the medical schools of McMaster University and University of Limburg (now Maastricht). It involves small group learning through the investigation and problem solving which are imparted through scenarios based on real-life clinical situations. Such a situation could be for example: 'It is 2.00a.m. and a patient arrives in accident and emergency writhing in pain, screaming and shouting, clutching their abdomen'.

The students work in groups, ideally between seven and ten students, to explore and solve the problems arising in the scenario. The group work is facilitated by a staff member who will steer the group towards achieving the already planned learning outcomes. The facilitator's role is to

- promote effective group functioning
- monitor learner progress
- encourage active contribution from members

It is suggested that facilitator should ideally have subject expertise, social congruence (interpersonal qualities) and cognitive congruence (being able to communicate in a language the students

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31

understand; Hew and Young 2013). However, the role of subject expertise is debated with the need for this reduced by appropriate prior learning for the students such as keynote sessions and by the facilitator being skillful in the role.

The group appoints its own chair to lead the group work and a scribe to record the key features of the discussion and a summary of the group's findings (Wood 2003). The group sets its own ground rules so that everyone works to the same standard and contributes in an agreed time and manner. The PBL process usually involves at least two group meetings, with time between the meetings for the students to engage in scenario-related self-directed study. The learning activity can be broadly broken down into seven components (The Maastricht Seven-Jump process, after Gijselaers 1995) within the two meetings and is described below:

First meeting (launch)

1. Clarify terms (what is known)
2. Define the problem
3. Generate ideas surrounding the problem (hypotheses)
4. Identify what is not known (questions)
5. Draw up the learning objectives (action and allocated tasks)

Between the meetings

6. Research, collate and share information

Second meeting (feedback)

7. Synthesise the information, re-visit the hypotheses, draw up conclusions and consolidate learning.

The collected information and the group's findings can be shared with other groups appraising the same problem to provide a wide knowledge base and variety of solutions.

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32

3.2.1 Case study: using problem based learning

Maggie Whittaker

Discipline involved: Physiotherapy

Year of programme: Any but early introduction into a programme allows students to become more proficient and meet increasingly sophisticated outcomes

Learning outcomes: see below

Case Study: **Mr Dunlop's acute pain**

You are a student physiotherapist on placement in the outpatient hand clinic. Your clinical educator, who is a hand therapist in an interprofessional team, asks you to get started with the next patient who has come into the walk-in clinic, while she deal's with a patient query. She gives you these details.

'Robertson Dunlop is a 58-year-old machinist at the local tyre factory. Three days ago, he was involved in an accident at the factory. His right hand was caught in a tyre press, where he sustained severe crush injuries to his hand. He was brought into A&E and was admitted, having sustained fractures of the proximal phalanx of the second, third and fourth digits, soft tissue lacerations and partial skin degloving of the extensor surface of the hand. Overnight he went to theatre and had the wounds cleaned and the partially ruptured tendons repaired. He was discharged the following day with advice, antibiotics, anti-inflammatory medication (ibuprofen) and simple analgesics (Paracetamol). He was given instructions to attend the walk-in clinic here today.'

Observation

You see Mr Dunlop sitting at a table in the hand clinic. His right arm in a sling and his hand is in a cock-up splint and dressings are in situ. He is looking dishevelled. When you go up to him you notice that the sling, splint and dressings are soiled and there is an unpleasant smell. He looks distracted, uncomfortable and grey. He is grimacing slightly and holds his right arm close to him. He tells you that his right hand and arm are very painful and are getting worse. He does not feel 'that good'!

● Find out the meaning of all the words, phrases and terminology new to you

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33

- What do you think has happened to Mr Dunlop (biologically, psychologically and socially)?

- What is going on now?

- What other information would you like and why?

- What do you need to do (and why)?

- What do you need to assess and why?

    o Must do!

    o Should do!

    o Could do!

- What are the immediate problems, immediate goals and action and why?

- What are the likely longer-term problems, goals and action and why?

- What may he be at risk of developing later?

PBL activity

The students work in groups of not more than ten and are given a copy of the scenario without the intended learning outcomes. The group's facilitator has a copy containing the learning outcomes, which are revealed to the students after they have discussed, explored and identified what is happening in the scenario, the issues, what they know already and what they do not know.

The 'unknowns' become the learning tasks for the intervening period between the launch and the feedback session, which is one week. The unknowns could include pathology, neurobiology and neuropathology, the psychological and the social impact of pain, pain management and treatments. During the intervening period several resources are provided for the students, either to guide their learning or to impart basic knowledge to act as a foundation for their learning.

Resources supporting the activity

Quiz and glossary

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34

Before the lectures the students are given a pain quiz to complete and bring to the lectures; this acts as a glossary. The quiz encourages the students to find out about the words and phrases used in relation to the learning outcomes of the scenario.

The lectures

The students have interactive lectures to provide them with a basis for their own self-directed learning. The session gets the students to experience and think about pain in a simple yet controlled example, i.e. using a clothes-peg on a finger. Health and safety and informed consent protocols are followed. The students leave the clothes peg on their finger for no longer than five minutes and then discuss with their neighbours what they experienced. They then map the sensation and experiences through directed labelling of a pictorial representation of the nociceptive pathways. Spot quizzes are given during the lecture on the preceding slides to check the students' intake of information and monitor the effectiveness of its delivery.

The persistent / chronic pain lecture includes a talk by an individual who has chronic pain. The session examines the development of long term pain and the role of pain management programmes from an interprofessional as well as a physiotherapy input perspective. There is greater emphasis on the role of the physiotherapist and the students 'role play' within the session.

Skills acquisition

Practical skills acquisition is facilitated through practical skills sessions which include manual therapy, exercise and the use of electrotherapy agents.

Learning Outcomes

Ta*ble 3.2 Learning outcomes for the case study:*

Learning outcome	Assessment strategy	
	Formative	Summative
Discuss 'what is pain?' and why pain is experienced	A	F

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35

Recognise the importance of dealing effectively with acute pain and understanding its cause	B	E
Appreciate and discuss the potential risk of the development of chronic pain and/or complex regional pain syndrome (CRPS) and its effects	C	E
Identify the relevant anatomy of the forearm and hand	D	E
Understand the biological effects of trauma including the neurophysiology and neuroanatomy of acute (recent and/or intense) pain	B, C and D	F
Understand the causes of pain, including infection	C and D	F
Discuss the inflammatory response and healing process of soft tissues and bone	C and D	F
Discuss the potential relevance of long standing pathologies on the healing process	C and D	F
Discuss the potential relevance of social/lifestyle habits to acute pathology and the effects on the healing process	B, C and E	F
Appreciate the psychological and the social effects of pain and injury	B	F
Recognise how age, gender, family, culture, spirituality and the environment contribute to the pain experience and their consideration in assessment and management	B, C and E	F
Know what information is required for a subjective examination, possible immediate objective assessment, problems, objectives and management	D	E

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

36

Be able to assess acute pain, including the use of pain measures	D	E
Discuss the management/removal of the causes of acute pain	B	F
Discuss and justify the relevance of the various methods (pharmacological and non-pharmacological) and/or management of acute pain	B	F
Identify and critically appraise source material relevant to this scenario	B	
Be aware of what (should) happen when there is a work-based accident and the possible effects and action.	D	

Assessment strategy

A: Group create a Padlet ™ or Wiki ™ so that individual responses can be expanded upon - allow voting to develop a consensus.

B: in class group reflection based on experiences in practice.

C: retrieval of source material and development of a group presentation.

D: Quiz or multiple-choice questions (MCQ) using audience response equipment or online.

E: simulation session and/or observed structured clinical examination (OSCE) in which assessment and management are demonstrated using skills demonstration with talking aloud to demonstrate an appreciation of the rationale. Students can be assessed individually, or if this is an interprofessional activity they would be assessed as individuals and as part of a team.

F: written assignment providing an evidence-based discussion of pain mechanism and management for a different case, perhaps of their own choosing.

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37

Evaluation:

- Pre and post quizzes/MCQ to evaluate if learning is effective
- Qualitative evaluation of assignment content to explore student understanding and application of concepts as opposed to providing a written summary of the resources used.
- Peer observation to analyse student participation in a group reflection
- Start, Stop, Continue to identify effective teaching and learning strategies and areas for improvement.

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38

3.2 Mapping pain content across a curriculum: integrative curriculum design

Amelia Swift, University of Birmingham

Background

A curriculum is a complete programme of study usually developed by a team of subject-experts belonging to, or affiliated with the profession for which the programme is intended. Many factors influence the final curriculum including the health professions educational standards, institutional and departments educational and business strategies, resources and facilities available, local and global socioeconomic and political climate, the student characteristics, pedagogical considerations, quality assurance processes, benchmarks, and not least the beliefs, values and philosophy of the educators.

The basic building blocks for most curricula are a list of desirable attributes that the institution use to define graduates and will include intellectual abilities, personal qualities and specialist skills and knowledge. The most common design strategy for curricula at present is outcomes-based informed by the Quality Assurance Agency for Higher Education and cross-national alignment of standards with the Europe in the Bologna Process (Tam 2014).

An outcomes-based curriculum with institutional and professionally-led goals can be structured in many ways, but integration across the curriculum is desirable. Integration is a way of unifying related subject matter. Without integration, the anatomical structures for pain perception may be in one module, the neurobiology in another, and the action of drugs in a third. Integration would align the sessions and introduce materials in a way that the student is able to appreciate the relationship between them. Undergraduate curricula for the health professions lends itself to this approach but it requires a high level of cooperation and planning between and within disciplines to work effectively. Poor planning and preparation can lead to heightened stress in students and staff and create challenges in developing a unified assessment strategy (Ahmad *et al.* 2017). Learning is longitudinal and so it is necessary to have clear development in learning outcomes but limit repetition (Ellman *et al.* 2016), one of the problems that has been associated with other spiral curriculum designs (where concepts such as pain are addressed over time but the complexity increases with each session (David and Harden 2003).

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39

3.2.1 Case study : Mapping and embedding pain education within nursing programmes

Sharon Wood (Nursing) University of Leeds, Michelle Briggs (Nursing) University of Manchester

Discipline/s involved: Nursing

Year of Programme: 3

Learning outcomes: The learning outcomes are for students to be able to: to be inserted

Background

This section describes a level 6 (Bachelor's degree) (QAA 2008) pain assessment and management module designed as a compulsory component of the pre-registration BSc (Hons) Nursing (Adult) Programme at the University of Leeds. The module was 22 hours in duration, initially optional but in 2007, became compulsory for the Diploma in Nursing programme, representing a major commitment to pain education for nurses. In 2012, the module was upgraded to Level 6 (degree level) and the findings of the British Pain Society's *Survey of undergraduate pain curricula for healthcare professionals in the UK* (Briggs et al 2011) were essential in presenting evidence to support the incorporation of the module into the new degree and gaining validation for the programme.

Knowledge and experience of delivering these pain modules prompted the desire to consider a strategic view of pain education delivery across the three years by mapping the IASP's *Curriculum Outline on Pain for Nursing* (IASP 2014) and the Nursing & Midwifery Council's *Essential Skills Clusters*, and *Competencies for Entry to the Register* (NMC 2010) documents to the new degree programme curriculum. Through this process, we were able to identify where, at what level and which topics of pain education were being considered within different modules. We were then able to influence the content and delivery of these to ensure that knowledge, skills and attitudes of pain

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

40

management progressed in a logical manner and were built upon each year. These mapping activities contributed positively to the module and programme validation process.

Pain education content within the module and programme curriculum has since been mapped against the *IASP's Interprofessional Pain Curriculum Outline* (2012) and the core curriculum outcomes in this document. Most of the curriculum content was met within the three years of the programme through a variety of teaching and learning strategies, including: taught sessions, simulated practice, self-directed learning and online activities. Some of the curriculum outcomes were met in modules, without being specifically focused on pain, for example: interprofessional learning, theory and practice, health care ethics and law, research for healthcare professionals and dissertation modules. It would not have been achievable to include all the curriculum content within a 22-hour pain module. The BPS core curriculum outcomes on self-management were not fully met although essences of this are considered in a long-term conditions module.

The module was successfully delivered to first 180 students in 2013. The 11-week module consisted of two hour taught sessions once a week, culminating in a three-part portfolio summative assessment. Student numbers were significantly higher than for previous modules and this required additional staff and adaptation of the timetable and learning resources that had been delivered successfully in previous modules. The module content (taught, self-directed and online activities) were delivered or/and developed academic staff from nursing and pharmacy, clinical nurse specialists in pain and service users.

Assessment of learning

Students develop a three-part portfolio consisting of:

- a written reflective account of barriers and facilitators to pain assessment
- the selection of a pain assessment tool for a specified scenario
- an online MCQ on nociception and pharmacology.

Effective assessment of pain was viewed as integral to the provision of high quality pain management and a decision to focus on this for pre-registration nursing was considered essential.

Evaluation

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

41

- Brief written answer to the question "How can we improve the assessment of this module?"
- Diminishing list of questions before and during lecture sessions
- Mapping written reflection against learning outcomes
- MCQ scores.

3.3 Active learning using the biopsychosocial model

Amelia Swift, University of Birmingham

Background

Active learning strategies aim to fully involve the student in the learning activity - encouraging each of them to make use of new information, to consider how it sits with their preconceptions and beliefs, to challenge, and to process the information rather than just hear it. Active learning encourages deep learning, which is characterised by understanding rather than memorisation (Biggs and Tang 2011).

Learners arrive at the session with prior knowledge of pain, whether this is based on their own experience or that of a friend or relative, or from previous learning. Having some knowledge before the learning activities start has been shown to improve the acquisition of new knowledge (Thompson and Zamboanga 2004). Those having no prior knowledge, or misconceptions are at a disadvantage - dealing with the challenge of trying to assimilate information that may contradict what they already know (Kowalski and Kujawski Taylor 2009). Thus it is good practice to provide some learning materials before the class (i.e. the flipped classroom; a blended learning approach that the uses classroom time to deepen prior knowledge). This is particularly helpful to familiarise learners with new vocabulary and even test the acquisition of this using a quiz; this has been shown to improve marks further down the line (Seery and Donnelly 2012).

Active learning during the session encourages engagement from students, helps to develop a positive learning environment, stimulates comprehension, remembering and evaluation of information, and ensures immediate application. One of the challenges in the use of active learning is that students may feel they learn more when passive learning strategies such as the lecture are used - and they may feel cheated of content (Tsang and Harris 2016). There is plenty of evidence to

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42

the contrary but it is important to manage expectations and provide evidence that effective learning is taking place in order to help students gain the most from this approach.

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43

3.3.1 Case study: using interaction and active learning

Sally Curtis (Physiology), Kathleen Kendall (Sociology), Laura Dennison (Psychology):

University of Southampton,

Discipline/s involved: Medicine

Year of Programme: Foundation / Year 1

Learning outcomes: For students to be able to:

1. Distinguish between sensory input and sensory perception
2. Describe biopsychosocial factors that can contribute to the pain experience
3. Outline the impact of biopsychosocial factors on an individual's perception and expression of pain.

Section 1: Part 1- Cold pressor test

Using the cold pressor test in the lecture theatre, two volunteers (or lecturing staff) compete to last the longest but before the test begins, students vote for who they think will 'win' and guess the pain ratings the lecturers write down during the test. Audience-response units provides instant feedback to the group on the variability of their judgements (see Table 3.3.1). In the test, volunteers place an

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44

arm, up to the elbow, in a bucket of iced water and holding this position for as long as possible before removing the arm before it becomes too painful.

The exercise allows a discussion about the students own and each other's expectations or prejudices relating to gender, age, psychological factors (e.g. stoicism, machismo, pain meaning, secondary gain) and coping strategies (e.g distraction). Pain tolerance and pain threshold can also be explored.

Part 2- Perception

All student.s are shown an ambiguous figure visual illusion (e.g. Figure 3.3.1). Prior to its display, half of the cohort is privately told that they will see a picture of a trained seal circus act; the other half are privately prompted to expect to see a picture of two people going to a costume ball. After exposure to the figure, students identify features of the image by holding up a piece of coloured card (e.g. 'hold up your card if you saw a man', 'hold up your card if you saw a ball'). This provides the students with a different mode of response and opportunity for interaction which clearly demonstrate that, despite the same visual input, the two groups as well as individual students perceive the illusion differently. The activity concludes with the lecturers revealing that different perceptions were dependent on expectations. This leads to a formal introduction of the biopsychosocial model of pain and a discussion of how sensory perception is an active process including biological, psychological and social components. These activities are summarised in Table 3.3.1.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

45
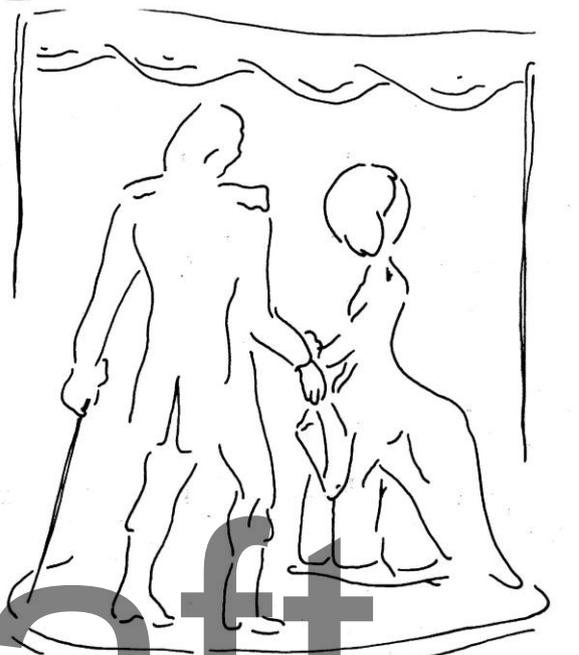
Table 3.3.1: Section 1 learning activities

Section	Activities	Rationale
Section 1 Establishing the biopsychosocial model of pain (approximately 30 minutes)	Cold pressor test with two staff members	To use memorable and interactive demonstrations to encourage thinking about bio, psycho and social experiences of pain
	Students vote on who they thought would last longest on the cold-pressor test and why	To elicit and discuss expectations and prejudices regarding pain thresholds and tolerance (e.g. gender differences)
	Students assess assess the pain felt by staff. This is later compared to staff ratings	To raise issues around how we judge pain of others and how pain is subjective
	Lecturers reflect on the experience and strategies to try to cope with the pain	To explore social context and meaning and coping strategies
	Students shown an ambiguous figure illusion. Half were secretly told they would see one scene within it, the other half were prompted to expect a different scene. After exposure, students indicated features they had seen in the image. Despite the same visual input students had perceived the illusion differently	To demonstrate that pain is not simply a passive experience of sensation To introduce the idea of pain perception as an active process with bio, psycho and social components To introduce 'top down factors' (e.g. expectations) operating alongside 'bottom up factors' from the sensory organs
	Formal introduction of the biopsychosocial model	To provide a theoretical framework that the students can easily apply to this topic. To promote the importance of consideration of psychosocial elements of health and disease

Section 2:

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

The second section contains individual presentations explaining the underpinning theory of the biopsychosocial model, which were developed through the collaboration of a physiologist (bio), a psychologist (psycho) and a sociologist (social). Videos, and the student responses that these evoke, are used to illustrate cultural differences of pain expression and pain control. Throughout this section the academic material is linked to the earlier practical demonstrations. These activities are summarised in Table 3.3.2.

Table 3.3.2: Section 2 learning activities

Section	Activities	Rationale
Section 2 Exploring factors involved in the biopsychosocial model (approximately 45 minutes)	Presentations on components of the biopsychosocial model in more depth through the collaboration of a physiologist (bio), psychologist (psycho) and sociologist (social) Opportunities for students to comment and ask questions	Integrating the teaching of physiology and the social sciences. To use students' ad hoc questions as an opportunity to make links between biological, psychological and social factors in the pain experience (e.g. endogenous pain modulation)
	Brief description of nociception as a sensory input (includes pathways to motor, sensory and affective areas of the brain)	To summarise key biological factors involved in pain perception
	Psychological factors that can affect pain perception including mood, emotion, context, expectations, learning, unhelpful thinking patterns, attention and coping strategies. Illustrated with clinical research examples and personal experience of a lecturer	Introduction to psychological factors and their evidence base Appreciation of psychology as a scientific discipline with clinically relevant applications
	Exploration of sociological factors using videos of religious and social rituals involving pain. A video of tooth cauterisation without pain relief was also shown. Student response units were used to promote reflection on and discussion about the videos	To promote discussion of control and expectation, both personally and culturally in respect of pain, with exploration of different social norms in different cultures

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Section 3: This section is based on experiential learning. Students are asked to place plasters on their arms and rate the anticipated pain of their removal and then asked to rate the anticipated pain of the plaster being removed by the person next to them. Student response units can be used to demonstrate the range of responses from the group, showing any clear trends. The aim of this exercise is to reinforce the importance of control in managing pain. Then a passage is read aloud where a burns victim emotively described the approaches used for undressing and redressing their wounds. This demonstrates the importance of control of the pain experience from the patient perspective. These activities are summarised in Table 3.4.3.

Table 3.4.3 Section 3 learning activities

Section	Activities	Rationale
Section 3 Experiential learning (approx 30 minutes)	Students were asked to place a plaster on their arm and rate the anticipated pain of their removal. Then they rated the anticipated pain of the plaster being removed by the person next to them.	To demonstrate the impact of having control over pain on pain-related experiences such as anxiety To demonstrate the subjectivity of pain and variations in pain-related distress
	A passage was read where a burns victim emotively described approaches used for undressing and redressing their wounds	To highlight suffering experienced by people in pain To illustrate necessity of communicating with the patient to determine preferences for coping with painful procedures

Assessment of learning:

This type of session can feed into many assessment strategies.
Formative assessment:
- An online quiz to encourage the students to recall salient aspects of the biopsychosocial experience of pain.
- In-session online MCQ assessing related knowledge.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

48

- Multi-professional debate discussing the impact of the biopsychosocial aspects of the pain experience and how the presentation of pain in patients may differ as a result

Summative assessment:

A discursive or analytical written assignment exploring one or more of the following:

- The contributing factors to a patients' pain experience
- How the pain experience may differ in presentation between individuals and cultures
- Creation of a patient information leaflet describing the biopsychosocial model of pain

Evaluation:

- Stop, Start and Continue regarding the session (students are asked what elements should be stopped, started and continue doing)
- Pre and post session confidence survey relating to knowledge
- Qualitative evaluation of participation in the debate (engagement and quality of discussion)
- Usage data for online materials

Further resources:

Taipusam Festival: shows the role of pain in religious devotion
http://video.nationalgeographic.com/video/malaysia-thaipusam-pp

Body cutters: shows the sub culture of extreme body modification, metal implants and suspensions and explains how the body can adapt through fight or flight responses in the short term
http://channel.nationalgeographic.com/taboo/episodes/body-cutters/?_ga=2.135210741.598248568.1517989189-591805141.1514886915

3.4 The core curriculum and acute pain services

Paul Wilkinson (Medicine) and Sailesh Mishra (Medicine), Newcastle University

Introduction

Acute pain services are run by interprofessional teams including specialist pain nurses, doctors and pharmacists dedicated to the highest standards of acute pain management in hospitals. In *Guidance on provision of services*, the Royal College of Anaesthetists (2009) states:-

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

49

'The safe and effective management of acute pain associated with surgery, non-surgical interventions and some medical conditions is a basic requirement of any professional health service. Good practice should ensure provision of an evidence-based, high quality, adequately resourced acute pain service dedicated to the safe and effective delivery of pain relief **and continuing training of non-specialist staff**'

This directive firmly places education of non-specialist staff at the forefront of all hospital based acute-pain services. The publication of IASP's *Interprofessional Pain Curriculum Outline* (IASP 2012), and this companion document, provides a crucial building block for high quality non-specialist education. Taken in conjunction with evidence-based resources such as *Acute pain management: Scientific evidence (*Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine 2015), the key tools are in place to drive change. A pivotal issue is to consider how to lift the curriculum off paper and put this 'into action' and thus make the curriculum work in hospital practice.

This article briefly considers key issues in managing and applying educational interventions in a hospital setting. It considers how education initiatives may target obstacles to effective pain management. Finally, an example is given of how the curriculum can be operationalized based on a system used in Newcastle-Upon-Tyne and developed further in conjunction with the University of Cardiff.

Key issues in managing and applying educational interventions in a hospital setting

In applying any educational intervention, it is crucial to understand the context in which it is being delivered. Important strategic aspects relate to the following:

1. Understanding the target of educational intervention

   One useful classification outlines how opportunities for educational intervention may be undertaken at three levels:
   - Downstream influences – focusing on individual phenomena (e.g. personal education, motivation, and practice habits)
   - Mainstream influences – population and organisational factors (e.g. unit or institutional changes)

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50

- Upstream influences – societal-level changes (e.g. public policies, cultural values and norms).

Each of these socio ecological levels provides educational opportunities (Jordan-Marsh et al 2004).

2. Recognising the interprofessional nature of pain management

   Pain management is interprofessional and involves medical, physical, psychological, cognitive and social components. Educational programmes may require the overlapping skills of a team that includes doctor, nurse, pharmacist, physiotherapist and often psychologist.

3. Recognising the importance of the knowledge and understanding in patients as distinct from carers

   Patient attitudes and beliefs have been shown to modify pain perceptions and analgesic requirements. The education of the carer allows optimal preparation of patients for surgery and the management of unhelpful beliefs.

4. Understanding the importance of prior knowledge of carers as a building block for future learning

   This is considered elsewhere in detail in this publication, but overemphasis on pain linked to medical conditions and the lack of training in considering pain as a disease is well recognised from the national survey undertaken by the British Pain Society Pain Education Special Interest Group; Briggs et al 2011).

5. Acknowledging the delicate balance between educational provision and clinical support

   Ward carers should be encouraged to gain improved self-efficacy through education. While direct clinical support is helpful, over reliance on pain teams may lead to deskilling of direct carers.

6. Operationalising the curriculum to bring about educational change and clinical improvement

   This is the key challenge now being considered.

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51

3.4.1 Case study: NEWCASTLE approach: facilitating organisational change through pain education

By designing educational responses to address barriers to effective pain management in practice, a platform for change evolves naturally and the core curriculum provides a framework for this. We wanted to create a banner to underpin undergraduate teaching locally, facilitate care in our hospitals but, most importantly, to shape education towards identified organisational weaknesses. The Newcastle approach is an example of how this can be done. It can be either applied directly or modified for local use elsewhere.

In summary, NEWCASTLE stands for:

- **Nos.** Be aware of the NOs (the 'don'ts' of pain assessment)   **N**os
- **Examine** and assess   **E**xamine
- Use **WHO** ladder   **W**HO
- **Continue** to assess at appropriate times and make appropriate responses   **C**ontinue
- Know **Adjuncts**   **A**djuncts
- Remember **Side-effects**   **S**ide effects
- Remember to **Titrate**   **T**itrate
- **Liaise** with the acute pain service   **L**iaise
- **Evaluate** ward performance and continue to improve   **E**valuate

Educational resources support this approach and contains a) educational slides b) text to provide either lecture based or online teaching that can be used with case studies. These resources can be used as part of undergraduate, online, mandatory education or as part of an induction programme. It also provides a system by which educational improvements can be evaluated.

Assessment:

We ran this NEWCASTLE model of teaching approach to the Foundation Year 1 MBBS doctors following their qualification and before their full GMC registration when they attended the time-protected teaching session dedicated to pain management . The group size varied from 20-30 candidates in each session and we have collected feedback data over 7 years between 2010-2017. This showed an improved understanding of the assessment and management of acute pain in complex clinical

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52

situations. The newly qualified doctors also felt more confident about their ability to prescribe and deliver effective pain management.

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

53

3.5 Case based learning

Amelia Swift (Nursing), University of Birmingham

Case based learning, closely related to problem based learning, is a strategy that engages students in discussion of scenarios that are taken from real-life or closely represent real-life. Herried *et al.* (2016) suggest that good cases:

1. Tell a story.
2. Focus on an interest-arousing issue.
3. Are set in the past five years
4. Create empathy with the central characters.
5. Include quotations-there is no better way to understand a situation and to gain empathy for the characters
6. Are relevant to the reader.
7. Must have pedagogic utility.
8. Provoke conflict
9. Force decisions.
10. Have generality.
11. Are short.

The presented cases often include additional materials, for example drug and vital sign charts, laboratory results and research papers.

Case based strategies encourage students to

● Link theory to practice
● Analyse data and draw conclusions
● Work together, communicate, debate, discuss, and collaborate
● Conclude

The Maastricht 'Seven Jump' process (Wood 2003 p 329) illustrates a typical case based learning design.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

54

1. Identify and clarify unfamiliar terms presented in the scenario; scribe lists those that remain unexplained after discussion

2. Define the problem or problems to be discussed: students may have different views on the issues but all should be considered; scribe records a list of agreed problems

3. 'Brainstorming' session to discuss the problems, suggesting possible alternative explanations on basis of prior knowledge: students draw on each other's knowledge and identify areas of incomplete knowledge; scribe records all discussions

4. Review steps 2 and 3 and arrange explanations into tentative solutions: scribe organises the explanations and restructures if necessary

5. Formulate the learning objective: group reaches a consensus on the learning objectives, tutor ensures learning objectives are focused, achievable, comprehensive and appropriate

6. Private study - all students gather information related to each learning objective

7. Group share results of private study (students identify their learning resources and share their results); tutor checks learning and may assess the group.

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55

3.5.1 Case study: using case based learning

Marcia Schofield (Medicine), Cardiff University

This section outlines a full day's workshop including lectures on the principles and practice of acute pain management, with an introduction to chronic pain followed by case-based learning. The workshop consists of a case, with history of opioid-tolerant patient and students are required to:

- design appropriate investigations
- fill in all relevant requests (blank request forms provided for everything from blood tests and x-ray to MRI, ECGs and nuclear medicine)
- write an evidence-based drug chart (including controlled drugs) with appropriate long and short-acting medication and breakthrough
- and finally to write a correct and appropriate take home medication.

Case study:

A patient with chronic pancreatitis, well known to the emergency department staff, presents at 2030 hrs with severe abdominal pain. He has not seen the duty GP and arrives by ambulance, which he has called. He has had morphine 10mg IV in the ambulance and his pain score on admission is 9/10.

His usual medication is:

Morphine	modified	release	10mg	BD
Oral immediate release morphine 10mg prn (usually takes 5-6 doses per day)				
Paracetamol				PRN
Pancrelipase				capsule
Insulin				
Lactulose				
Senna				

Observations		on		arrival:
Heart	rate		110	SR
Blood		pressure		135/85
Temperature				36.9°C
Clammy/sweaty				
No	added		heart	sounds
Lung		fields		clear
Abdomen	tender	globally	with no	organomegaly

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Catheterised – urine draining freely, no residual, output 5ml/min

Questions

- How would you manage this patient initially?
- Outline a treatment plan and fill in the appropriate documentation
- Fill in the appropriate blood test and/or radiology requests. Be sure to justify your choice of investigations
- Fill in the appropriate instructions to nursing staff
- Fill in the attached drug card
- What further management would you suggest?

Assessment of learning

- Participation - each member of the group scores the other members work using a Likert scale to evaluate key attributes e.g. task completion to deadline, and contribution to group work. Marks can be allocated to this aspect of the process to support student engagement and reward the learning process not just the outcome.
- Group presentation: the group creates and presents a poster, powerpoint, wiki or blog addressing the key learning outcomes. Each member of the group is assigned a component to create and present. Clear guidelines keep the presentation short and focused.
- Written report including completed documentation and rationale for decisions made supported by evidence.

Evaluation

Each student writes three positive and three negative words or a piece of free text to describe their experience of this learning strategy. The resulting words are entered into a word cloud generator (see http://www.betterevaluation.org/en/evaluation-options/wordcloud for guidance). The resulting cloud organises the words used based on frequency.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

57

3.6 Involving patients in pain education

Sally Curtis, University of Southampton

Discipline involved: any professional group

Year of programme: Foundation years

Learning outcomes:

At the end of the session the students will be able to:

- Appreciate the complexity of living with chronic pain
- DIscuss the impact of pain on a person psychologically, physically, and socially.
- Have developed skills in listening to a complex and multifaceted history.

Involving patients (also known as service users, expert patients or patient educators) in pain education can be a valuable and powerful experience for students. It can help them to develop communication skills as well as professional attitudes, such as empathy and clinical reasoning, while contextualising their learning. Patient involvement is especially useful in chronic pain education; the causes and consequences of chronic pain can challenge student beliefs and the patient experience can provide an invaluable resource for helping student to understand its impact.

People with chronic pain can be knowledgeable about their condition and able to provide insights into the pain experience that are difficult to achieve through other modes of education. The nature of an individual's pain experience and expression can depend on many biopsychosocial factors including: the physical impact of the condition, social isolation, the loss of employment, changing relationships and distress. Involving patients in pain education can help students to appreciate how these factors can impact on the individual and their response to treatment and management of their condition. A biopsychosocial approach to pain education should improve students' awareness of problems associated with pain and positively influence the way they interact with and treat future patients (Ali & Thomson 2009). Using the patient experience, alongside the biopsychosocial approach, reinforces and consolidates the underpinning theory.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

58

There are many different ways in which patients can be involved in education. A few examples are presented below. Students can be asked to consider how people may respond to a series of questions such as:

- How have the sensations of pain you have experienced changed over time?
- What makes your pain better and what makes it worse?
- How does your pain affect your family and friends?
- How has living with chronic pain affected your life?
- What key message would you like to give to future healthcare professionals?

Videos of individuals or groups of patients discussing these questions can then be shown for comparison with the students' thoughts. Patients can be involved in designing videos of simulated practitioner-patient consultations. These can be used to emphasise examples of good and bad practice e.g. in history taking, body language, empathy. These mock consultations can also be used to demonstrate the difficulties and frustrations in dealing with chronic pain from both the patient and practitioner perspective.

One of the most powerful teaching methods is to have patients in the classroom delivering an account of their pain experience in person. This is often very effective at consolidating information at the end of a symposium or teaching session and is excellent for reinforcing the biopsychosocial nature of the pain experience. It is good to have two or more patients with different types of pain who explain to students the cause of their pain, the effect it has had on their lives and the difficulties of managing their pain. This can be followed by a facilitated question and answer session with patients and practitioners which allows students the opportunity to explore many of the aspects of pain and pain management. Having a variety of healthcare professionals involved reinforces the multidisciplinary nature of pain management and also the patient expectations of the different professionals.

When patients are directly involved in teaching it is important, due to the sensitive and personal nature, that they are fully prepared. It is essential that expectations are clearly explained and that they are comfortable with their involvement. It is also key to the patient that they receive feedback on the session (student and lecturer) and time should be taken following a session to talk through

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

59

their experience. Consideration also needs to be given to paying expenses and providing a fee for the session.

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

60

3.6.1 Involving patients in pain education: a reflection

Ian Semmons (Action on Pain)

People with chronic pain can bring a remarkable insight into the impact that pain can have, not only for the individual but also their family, relatives, friends and carers. The key ingredient is that chronic pain has an individual footprint on the person it affects and their family. How that footprint impacts can be decided by many factors within that individual's life, for example, the environment they live in, the support or lack of support they receive from their family, their own determination to limit the influence that chronic pain has on their life, their frustration and potential feelings of isolation.

It is critical is to invite people who have a positive approach to dealing with their pain. There is much to be learnt from somebody who experiences the highs and lows that living with chronic pain brings. They will be able to outline how they have 'moved forward', overcome the hurdles that have confronted them during their journey. Their experiences and expertise in dealing with their pain brings a uniqueness that can only be fully understood by the person with chronic pain. Yet the knowledge they impart can strengthen the ability of a healthcare professional to treat and support a person affected by chronic pain. Above all they highlight that chronic pain can be challenged to such an extent that it may become only a minor player in the day to day life of a person affected by it.

Assessment of learning:

This type of session can feed into a number of different assessment strategies.

Formative assessment:

- A quiz delivered virtually to encourage the students to recall salient aspects of the patient's history.
- In-session online MCQ assessing related knowledge.
- Multi-professional debate discussing each profession's role in the assessment and management process.

Summative assessment:

A discursive or analytical assignment or OSCE exploring one or more of the following:

- Evidence based assessment of the patient's pain
- Evidence based appraisal of the pain management strategies

Evaluation:

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

61

- Observation of student engagement with the session
- Feedback from the patient(s) regarding the students' engagement, empathy, respectfulness, communication skills and problem solving skills.
- Sharing student feedback with the patient-educators so they can appreciate the impact they have had.

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

62

3.6.2 A patient educator perspective: the Pain Toolkit Workshop

Pete Moore

Discipline involved: any professional group

Year of programme: Foundation years

Learning outcomes

- Describe what pain self-management is and how it can support the patient
- How to activate patients to self-manage and promote self- management to them in time-based appointments
- How to promote, action planning, problem solving, dealing with setbacks and self-monitoring

Background

What, patients teaching healthcare professionals about self-managing pain? That's not something you read or hear everyday, is it? Yes it's true I actually run interactive half-day Pain Toolkit workshops for healthcare professionals, to learn some extra skills and to teach their patients simple pain self-management skills. I have been presenting and running workshops fulltime now for about 20 years.

Why do I run them? Well when I've been promoting the pain self-management message over the years, doctors and healthcare professionals have always said they would like to promote pain self-management to their patients, but they were unsure when to start to have the conversion with their patients and how to do it in a timed based appointments.

Like patients, they were struggling, so I thought it would be useful to develop a workshop especially for them.

I soon discovered there was another couple of reasons why they struggled.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

63

- All healthcare professionals it seems are taught in the medical model and pain self-management is something they have to learn on the job.
- Pain self-management is keeping patients in the driving seat. The medical model puts us in the NHS passenger seat. Do you know of anyone learnt to drive sitting in the passenger seat?
- Until pre-registration education includes pain self-management within their curriculum, healthcare professionals are going to struggle.

All my workshops are interactive and of course we have a little fun as well. Participants can get a free Pain Toolkit Healthcare professional handbook if they email for it. Self-management is about taking action and by asking participants to email me, is demonstrating self-management in action on their part. Other learning resources to make learning pain self-management interesting and fun

Pain Toolkit on-line Game

https://www.paintoolkit.org/news/article/pain-toolkit-on-line-game

Pain Tips on-line Game

http://paintips.focusgames.com/

Pain Toolkit Quiz for Healthcare Professionals and Patients

http://quiz.paintoolkit.org/

Pain Toolkit Podcast

https://www.paintoolkit.org/resources/podcasts

For further info about pain self-management and the Pain Toolkit Workshops, please email pete.moore@paintoolkit.org

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

64

3.7 Using simulated patients to teach challenging pain consultations

Paul Kinnersley, Elizabeth Metcalf

Background

The use of simulated patients has greatly advanced the teaching of consultation skills in healthcare settings and is now common practice. In parallel with the development of the simulators themselves, work has been done to develop methods of consultation analysis (consultation frameworks) which are essential to comment on or provide feedback to clinicians about their performance. There are a range of approaches but one of the more straightforward is a 'skills based' approach (Silverman et al 2008). This is based upon the five key assumptions shown in Table 3.7.1.

Table 3.7.1 Assumptions to support a 'skills based' approach

All qualified clinicians can communicate with patients skilfully
Poor performance relates to poor use of skills rather than to personality traits
Poor performance can be improved by identification and practising of skills with feedback
There are specific skills for consultation tasks – for example 'building the relationship'
All clinicians can benefit from opportunities to review their consultation skills

Using simulated patients for consultation skills training

Simulated patients were first used in America in the 1970s. The advantages over using real patients were rapidly appreciated (see Table 3.7.2) and their use spread such that now they are widely used for both undergraduate and postgraduate training and assessment of consultation skills. The only significant disadvantage is that most simulated patients will require payment, though this is often modest. Many simulated patients are actors but formal training as an actor is not necessary and sometimes can be a disadvantage. The main requirements are that the person is committed to helping healthcare clinicians improve their performance and that they can take on the role provided

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

65

and flesh it out appropriately. Simulated patients can be recruited formally from drama colleges and acting agencies, or more informally through personal contacts.

Consultation with the simulated patient may be interrupted to give feedback on communication skills demonstrated, and where required the consultation may be restarted, either from the beginning, or from the point reached prior to feedback. Such interruption with real patients would risk interference with the doctor-patient relationship and the development of rapport.

If simulated patients are used for formal assessments they need to be able to portray their role consistently. In the case of formal assessment, consideration should be given in advance to exam material confidentiality, prior to information being given to the simulated patient. This may take the form of a signed confidentiality agreement with the simulator. The skills required of the simulated patient will depend on the nature of the scenario; the more emotionally laden the role the more likely that some training as an actor is needed.

When considering the development of communication skills in the context of pain, simulated patients allow the learner to practise their skills without causing delay or further distress to real patients, which could occur if a genuine consultation was used for teaching purposes. Formal training is also required if the simulated patient is going to be asked to feedback. Feedback from actors is always highly valued by course participants. However skilfully the facilitator gives feedback it is the 'patient's' view that often carries most weight for clinicians. However, because of this, care must be taken with the feedback. If the actor is perceived as being overly critical particularly of a inexperienced trainee, the comments may be resented and little learnt.

To ensure that the feedback is as effective, the same skills based objective approach should be taken such that the actors comment on the behaviours exhibited by the clinician rather than, for example, their personal traits. For example, if the clinician is failing to make the patient feel that they are being considered holistically by adopting a very 'clinical' approach to questioning, the actor might say that the clinician made them feel that their worries were ignored and that the clinician didn't seem to care about them. Using an alternative, skills based approach, the actor might instead give feedback to the clinician to say that 'whilst you asked me a lot of questions about my presenting symptoms, had you also enquired about how the symptoms were affecting me and my own

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

66

concerns, I would have felt you were taking a fuller account of the impact of my symptoms and therefore developed a stronger rapport'.

Particularly for emotionally laden scenarios, it is important that the actor takes an emotionally neutral stance or comes out of role before giving feedback. The clinician does not want to have to struggle with an angry patient and then get feedback from the same, still angry patient.

Table 3.7.2 Advantages of using simulated patients

Rehearsal	Consultation can be stopped and started allowing learners the opportunity to experiment and reflect, before trying again
Improvisation	A consultation with a simulated patient can be flexibly modified to add in additional material or to respond to a clinician's specific approach. A simulated patient is able to enact a distressing role without concerns about harm to a real patient The scenarios can be videoed without complex consent procedures
Standardisation	A simulated scenario can provide a reproducible role for different learners on different days
Customisation	Detail of the content of a consultation can be tailored to meet the needs of the learner
Availability	Simulated patients are usually very reliable and have no concerns about their own health
Time efficiency	Skills can be focused upon and rehearsed
Feedback	Feedback can be given to the learner
Facilitation, instruction and evaluation	Learners can be trained to lead teaching in specific circumstances

Writing scenarios

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

67

The content of the scenario depends upon the content of the teaching session, the consultation task and also on the experience of the simulated patient (see example scenario). The medical details need to be clear and usually it is necessary to provide some personal background to the case. Detailing the patient's worries and concerns about their illness is generally more important than other details such as family structure or previous medical history (unless relevant to this consultation). It can also be helpful to provide them with a specific opening line since many consultations will start with an opening from the clinician such as 'How can I help you today?' As simulators get more experienced they improve their ability spontaneously to create clinical scenarios.

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68

3.7.1 Case study using simulated patients

Paul Kinnersley, Elizabeth Metcalf

John Williams, 54 year old teacher, has taken early retirement due to stress at work and chronic back pain after motorcycle accident when he injured his back aged 52.

Opening line: 'I just need some stronger tablets for my back doctor, the last ones you gave me are useless'

Response: 'You are coming to the pain clinic today for a review of your case'

Background to case: 'Until two years ago you were a successful school teacher. However, your school then had a new head teacher who seemed to take an instant dislike to you. He blocked your attempts at promotion and was dismissive in public of your efforts. When riding your motorbike home on a wet November evening that same year, you were involved in a crash with a car which resulted in you injuring your back. At the hospital you were told that nothing was broken but you were in severe pain and when you were discharged home the pain didn't settle. You had physiotherapy and various types of painkiller, but nothing has helped and after nine months absence from work the school authorities advised you to take early retirement. You were reluctant to agree to this but in the end it felt that you had no choice'.

'As you were experiencing a lot of pain your GP referred you to a pain clinic at the local hospital about six months ago. You attended the clinic for the first time three months ago when you had a talk with a doctor who then examined you and who started you on Tramadol two x 50mg tablets four times a day'.

Emotions demonstrated: frustration, withdrawn affect

Running the session

Many clinicians have reservations about using role play or working with actors, particularly in front of their peer colleagues. It is important therefore at the start of the session to ensure that participants recognise that they are in a safe environment. Focussing on skills is essential since it moves the focus

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

69

from the learner's personality to their behaviour. The other essential requirement is skilful provision of feedback. Various methods have been developed and *Agenda Led, Outcome Based Assessment* (ALOBA) described by Silverman et al (1998) is now widely used (see Figure 3.7.1)

Figure 3.7.1 Agenda led, outcome based analysis (ALOBA) (Silverman et al 1998)

AGENDA LED OUTCOME BASED ANALYSIS
Copyright SM Kurtz, JD Silverman, J Draper: Teaching and Learning Communication Skills in Medicine 2nd

Learner reflects
&
acknowledges area they need help with

Tasks/ goals that need
to be achieved are identified

Task assumes a learning exercise
for learner & facilitator

Facilitator praises
Achievement
& introduces theories

Learner & facilitator suggest
skills to achieve outcome

Rehearsal of skills
used to achieve outcome

Facilitator summarises
skills to achieve outcome

Stages of ALOBA

ALOBA discussion should begin with the learner identifying their knowledge gaps and learning needs. The facilitator should acknowledge these and agree with the learner a proposed strategy to address them. This process makes the learner central to making suggestions as to how they might overcome their areas of difficulty. Feedback should then be given on their performance, using a skills based non-judgemental approach, offering alternatives, rather than prescriptive advice.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

70

Video recording is frequently used in conjunction with simulated patient consultation. This allows the learner the opportunity to see for themselves their own strengths and weaknesses and provides an excellent platform from which to direct feedback. Furthermore, the use of video allows the learner to observe their own non-verbal communication skills, and thus encourages reflection upon this vital element to a satisfactory consultation.

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3.8 Interprofessional pain education

Emma Briggs (nursing), King's College London

Discipline involved: interprofessional

Year of programme: 2nd

Learning outcomes

- Discuss the impact of pain on the individual, their family and society
- Explain the underlying pain mechanisms
- Plan a holistic assessment for people experiencing pain
- Identify the main pharmacological strategies and the mechanism of action, cautions and contraindications
- Discuss the role of non-pharmacological approaches to pain management
- Plan pain management strategies that promote independence

Background

King's College London launched an Interprofessional Pain Education (IPPE) in 2012 for second year undergraduates from dentistry, medicine, midwifery, nursing, pharmacy, and physiotherapy. Annually, around 1300 students undertake the IPPE unit which is designed to enhance pain management knowledge and skills, to challenge existing assumptions, improve interprofessional collaboration and understanding of roles as well as to contribute to the suite of interprofessional learning available. This overview provides an insight into the learning unit and reflects on drivers for change, key challenges and future directions.

Overview of the unit

The King's IPPE consists of an e-learning module and interprofessional workshops where students work collaboratively online and in the classroom, to devise a pain management plan for a particular

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

72

case study and discuss the role of interprofessional and specialist teams in providing effective pain management.

Eight virtual, animated patients are available online and the students are allocated to a patient with one of the following pain conditions: postoperative pain, post-herpetic neuralgia, trigeminal neuralgia, persistent headaches, tooth abscess, osteoarthritis, postpartum pain and back pain from metastatic cancer. The patients are of a range of ages and ethnic backgrounds; they vary in their response to pain and present in a range of healthcare settings. Online, the students design a pain assessment strategy and in the workshop, they work in their interprofessional teams to explore the nature and impact of pain, and to agree an assessment strategy and pharmacological and non-pharmacological interventions. An informal presentation to the larger group (around 25-30) ensures that the students gain an insight into the management of a range people with painful conditions.

Driving curriculum change

A steering group was established that included representation from all the disciplines involved including local champions and pain educators that could influence change in their departments and curricula. A key objective was to address the deficiencies in undergraduate education previously identified (Briggs et al 2011) and respond to the policy initiatives and political drivers to improve pain education (Donaldson 2009, Chronic Pain Coalition 2012) and interprofessional collaboration (CAIPE & Department of Health 2007). These were key arguments in writing an application for the annual KCL College Teaching Awards and this funding (£16,449) provided essential, dedicated time for e-learning content development (including the virtual characters), video recording, user group consultation, administration, project management and dissemination. This formal award was an important stage, reassuring us that we had convinced the wider (non-pain), academic community at a university level of the importance of the topic. This also helped us to engage with department colleagues responsible for curriculum design.

Stakeholder engagement and good communication were also important in the success of the project, along with building interprofessional networks across local clinical and academic settings. Feedback from student and user's groups guided the design of the learning unit, influencing some

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

73

important decisions before and after the project was piloted. An example of this was student feedback around the use of social networking sites. Students felt that networking online for learning should be a separate system from the online social spaces they typically used.

Workshop facilitators can attend a training session before the workshop and a briefing immediately before the workshop to answer any last-minute questions and pick up materials. They often worked in pairs with complementary skills such as an academic without a pain background and clinician from a local pain service.

Assessment of learning

Formative assessment

An MCQ consisting of 15 questions and students are required to pass 80% and attend a workshop to be eligible for a certificate.

Summative assessment

Summative assessments are undertaken in the

Evaluation

Student evaluation -online evaluation of e-learning and feedback

Student evaluation -workshop evaluation - identification of two benefits and two challenges to interprofessional collaboration around pain

Facilitator feedback - online feedback on experience and peer observation is used to promote staff development. Facilitators from local NHS trusts are provided with a certificate highlighting that they are an invited facilitator for the university.

Overcoming the challenges

Logistics was the first and foremost challenge and we focused our initial attention to ensure classroom availability and space in the timetable for each discipline which involved 14 programmes of study. This meant that, for some professions IPPE sat outside a module as an added extra for

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

74

students but this is being addressed as curricula are being re-designed. The workshops currently run across four days with around 37 groups and therefore early recruitment of facilitators is important. Administrative support for interprofessional learning is crucial for organising classrooms, student groups, facilitators and communicating with all parties.

Careful planning is needed to allocate students to appropriate case studies to ensure a meaningful learning experience. For instance, mental health nursing students were not placed in groups with the postoperative or hospice-based scenario. Despite this, students sometimes had to be gently challenged to relate the impact of the painful condition (such as arthritis) and their perceived field of practice.

Overall, the IPPE has been very successful, and we continue to work on embedding it into curricula in individual programmes, developing assessment strategies and resources for students. We believe that the positive impact of interprofessional learning has been worth the effort involved in overcoming the challenges and barriers that may unintentionally encourage uni-disciplinary pain education. We hope that this insight encourages and supports others to develop interprofessional learning around pain.

Steering group and content developers

Ms Teresa Arias (Midwifery)

Dr Emma Briggs (Nursing – project lead)

Mrs Jayne Frisby (IPE lead lecturer)

Ms Teresa Aris (Midwifery)

Dr Anna Battaglia (Life sciences & Medicine)

Dr Duncan Critchley (Physiotherapy)

Ms Laurella Noble (IPE co-ordinator)

Professor Tara Renton (Dentistry)

Mrs Rita Shah (Pharmacy)

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

75

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

3.9 Essential Pain Management

Sailesh Mishra (Medicine), Helen Makins (Medicine), Mike O'Connor (Medicine)

Discipline involved: medicine

Year of programme: any

Learning outcomes: To be inserted

Background

Essential Pain Management (EPM) is a global initiative that aims to work with local health workers to improve knowledge in pain management, implement a simple framework for managing pain and to address and resolve local multifactorial barriers that impede delivery of effective pain management. The initiators developed a simple framework of delivering pain education within the locally available resources.

The founders of EPM, Roger Goucke and Wayne Morris (Australian & New Zealand College of Anaesthetists), delivered the first course in Papua New Guinea in 2010. They were joined by Linda Huggins and went on to develop EPM-Lite, a scaled down version aimed more specifically to the needs of the undergraduate (pre-registration) students. EPM started making its way into the UK and in 2013 the EPM-UK working group had its first meeting looking at introducing EPM into Africa. Soon it was realised that EPM offered an opportunity to deliver undergraduate pain education to medical students at UK universities and a pilot project was run in Bristol in 2014. Since then it has expanded across the UK to many other Universities. In 2017, EPM-Lite was rebranded as EPM-UK and updated. EPM-UK model has also been piloted in a pre-registration nursing curriculum (Northumbria University) and post-registration healthcare professionals in practice (Royal Victoria Infirmary, Newcastle).

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

77

EPM approach

EPM provides a simple approach; a half day workshop using a freely available presentation slide deck that lays out key concepts of classifying pain based on time period, type and mechanism. It follows a framework of Recognise, Assess and Treat (RAT). This helps as a constant reminder for the students who are then encouraged to work in small group workshops to discuss practical pain management in different situations. Discussion then moves to identify the barriers to effective pain management using case-based examples and group brainstorming and collation of ideas on a flip chart.

Example*: You are the new foundation doctor in the surgical ward at night shift and asked to review a 48-year-old female, ex IV drug abuser, who is reporting severe pain following emergency laparotomy and bowel resection 2 days ago. How will you manage her pain?*

The students learn about the nociceptive pathways with a combination of PowerPoint slides and flipchart drawing and are encouraged to think of the different analgesics available, plotting them against the pain pathway. The same is undertaken for non-pharmacological strategies to ensure a rounded approach to management. The second half of the session then uses several case examples to reinforce the learning points and use a Recognise, Assess and Treat (RAT) framework to solve a series of clinical scenarios.

Who can teach EPM?

Anyone involved in education and delivery of pain management can teach EPM. There are instructor courses organised via the EPM Network there is an instructor's manual online. The key to success of EPM lies in having a dedicated team of keen enthusiastic educators who are can deliver the concepts in small group setting using RAT approach.

Evaluation

The workshop is concludes by evaluating the knowledge base with a set of true or false questionnaires and collecting feedback using 3 simple questions; what I liked, what I learned and what could be improved.

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78

Interactive Workshop
Plotting Pain pathway with site of action of drugs
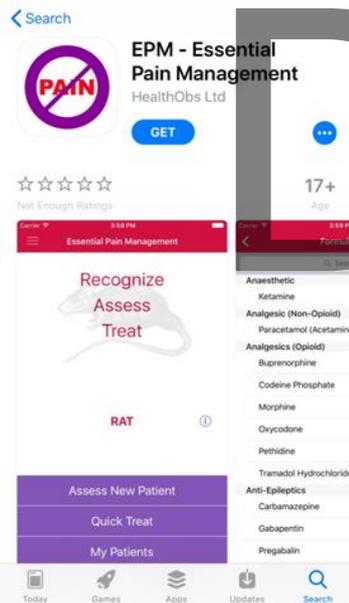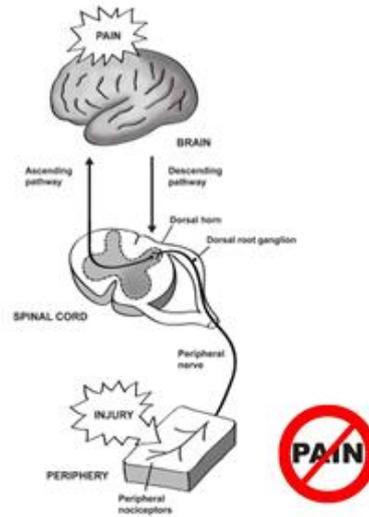
EPM App available free on Apple app store

Resources:

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More about EPM UK:

https://www.rcoa.ac.uk/faculty-of-pain-medicine/essential-pain-management/epm-uk

Course Materials and References:

https://www.rcoa.ac.uk/faculty-of-pain-medicine/essential-pain-management/epm-uk/references

Essential Pain Management website:

http://fpm.anzca.edu.au/fellows/essential-pain-management

Facebook page : https://www.facebook.com/EssentialPainManagement/

Youtube Video : https://youtu.be/aeSpJtUdt6U

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

3.10 Twitter ™ and social media in pain education

Amelia Swift (Nursing), University of Birmingham, Kate Thompson (Nursing), Leeds Beckett University, Alison Twycross, London South Bank University, (Nursing)

Discipline involved: All

Year of Programme: Ideally this should be introduced early in the programme and used regularly. Students will take time to acquire the skills required to make the most of this strategy and encouragement and support are required to begin with.

Learning outcome:

Using these strategies will enable students to:

- Self-assess knowledge levels
- Develop confidence in debate and inquiry
- Identify and communicate the salient points of an argument

Background

Twitter ™ was set up in 2006, the brainchild of Jack Dorsey, whose aim was to encourage group communication. Its use quickly began to spread to share thoughts and opinions at tech conferences and then beyond. The ways in which it is used have evolved, driven by the needs of its users, most notably an increase from a 140 character limit to a current limit of 280 characters. It's use as an educational tool was mentioned in a published paper first in 2008. There are many ways that Twitter ™ can be used for education:

a)   Twitter ™ chats

One or more hosts prescribe a time at which tweeters will come together virtually to discuss a pre-selected topic. A hashtag (#) is used for all tweets related to the chat. The hashtag acts as an index and allows tweeters to collate a stream of tweets. Tweeters enter the discussion responding to one another or tweeting the whole group. Participants can be active or passive (known as lurking). An educational Twitter ™ chat can be used as a part of enquiry based learning, for example by posing the question to a group of students 'Why do we fail to assess pain?'

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

b)	Subscribing to a hashtag (#)

Students can be encouraged to find and share hashtags (e.g. #chronicpain) that collate discussions on relevant topics. A student-selected collation of the most pertinent and interesting tweets from that stream can be collated by the students into a shared area for dissemination using platforms such as Storify or Padlet.

c)	Competition

Students can be encouraged to participate in competitions using Twitter. The 140 (or 280) character limit encourages focus. An example of this can be the creation of pain Haiku (a short poem), for example:

Lightning punching down
Fast, blinding, loud – blood pain
A prayer or tears
(David Meade 2014).

(More information about pain Haikus can be found at:
http://www.haikupoemsandpoets.com/poems/pain_haiku_poems)

d)	Dissemination of educational resources

Lecturers and students can post links to relevant videos, blogs, news articles, websites and more. This works best when it is topic focused. Analytical tools within Twitter allow you to determine which resources generated the most 'click-throughs', which allows you to refine your dissemination strategy over time. This could be linked to the use of a hashtag.

e)	Classroom tag

Using a unique classroom tag allows students to ask questions to the lecturer or each other. This can encourage a greater confidence in asking questions because the student can remain anonymous (depending on their choice or username). This strategy can also be used as a communication

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

82

mechanism, for example letting students know about new resources available on the virtual learning environment.

f)   Mini-reviews or summaries

The lecturer can ask the students to review or summarise a journal paper, book or blog using the 140 or 280-character limit. This encourages the identification of the key message. Using a hashtag allows the students and lecturer to appreciate the different messages that can be found within a resource depending on the perspective of the reader.

g)   Development of empathy

Asking students to find patient stories, organisations, and hashtags on Twitter will expose them to the information that these groups share and provide insight into the experience of those living with pain.

h)   Project collaboration

Students can work together to create join assignments, design research projects or develop poetry.

i)   Survey

Polls can be presented on Twitter and enable the collation of feedback or opinion. This can be used during a face to face session to encourage active participation in learning and/or the application of knowledge to a practice based scenario. For example, having a poll on which is the most appropriate pain assessment tool to use with a child of a given age. An advantage of using Twitter in this context is that it does not require the purchase of expensive voting pads.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

83

3.9.1: Case Study, using a Twitter chat to stimulate disseminate best practice in pain education

Alison Twycross, Amelia Swift

Professor Alison Twycross (@alitwy) is the editor of Evidence Based Nursing (EBN), has been using Twitter Chats for several years and was one of the first journal editors to do so. The pain-related chats have led to ongoing work and collaboration as well as growth in the personal networks of the participants. The first Pain Education SIG chat took place in the evening during the British Pain Society's Annual Scientific Meeting in Birmingham, which enabled it to be advertised to delegates during the day at the conference. This was hosted from a hotel room, demonstrating the fact that Twitter chats can be held anywhere there is a good wifi connection.

Initial Twitter chats run jointly by the Pain Education SIG and EBN have resulted in examples of best educational practice being shared; for example, the use of patient stories to embed knowledge into practice. Several useful resources were also shared with participants. Other EBN Twitter chats have also been used to gather the views of a range of participants and this has then been used to lobby key policy makers. An example of two Twitter Chats by the BPS Pain Education SIG and EBN can be seen at:

 Do we need to rethink how we educate healthcare professionals about pain management? (May 2017) https://storify.com/alitwy/do-we-need-to-rethinkhow-we-educate-healthcare-pro#publicize

 Why is it so difficult to transfer knowledge taught in the University to the clinical practice setting? (September 2017) https://storify.com/MeliSwift/why-is-it-so-difficult-to-transfer-knowledge-taugh

Evaluation

Brand24 analytics show that the Evidence Based Nursing Journal Twitter chats have a potential reach of 64,596 accounts, generated 473 interactions*, were shared 189 times, and attracted 284 likes. We can also see the most influential participants, which is based on several metrics. This is very healthy for a relatively young chat, and further analysis will enable us to build the following.

- Participation – who is participating and who isn't

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

84

- Quality – what information is being shared and do you believe the activity is meeting its aims?
- Influence – who is following or participating in your activities and what is their potential to contribute or influence
- Feedback from students – sought via Twitter of course.

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

85

4.1 Final Summary

In this document we have highlighted the current status of pain education in pre-registration health care curricular in the UK, and found it to often be lacking, inconsistent or unidentifiable.

Publication of the IASP's undergraduate curricula, the CMO's (2009) call and the recognition of pain to be included in all healthcare profession education, the establishment of the Faculty of Pain Medicine in the Royal College of Anaesthetists and the Royal College of General Practitioners choice of pain as a clinical priority area for 2011-13, have all highlighted the need to improve the pain education of all pre-registration healthcare professionals in order to prepare the future workforce to meet contemporary health and social care needs. In this, IASP Global Year of Excellence in Pain Education it is anticipated that the publication and dissemination of this document will raise awareness of this issue. By sharing practical case studies alongside their educational theory we hope to inspire educators during the planning and delivery of their curricular to embed engaging, enjoyable, interactive, meaningful and wherever possible interprofessional learning into their students experiences, so that the future health workforce can be best prepared to meet societies contemporary health and social care needs. Thus, we hope to have presented the problem and contributed to the solution.

Thank you.

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

86

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

88

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Additional resources

- Faculty of Pain Medicine e-pain www.rcoa.ac.uk/faculty-of-pain-medicine/e-pain
- Pain Community Centre http://www.paincommunitycentre.org/
- International Association for the Study of Pain (IASP) http://www.iasp-pain.org/
- British Pain Society www.britishpainsociety.org/
- Health talk online http://healthtalkonline.org/peoples-experiences/chronic-health-issues/chronic-pain/topics
- How pain works http://science.howstuffworks.com/environmental/life/human-biology/pain.htm
- The Pain Clinic http://www.painclinic.org/presentationsandarticles.htm
- Neuroscience for kids http://faculty.washington.edu/chudler/introb.html
- Physiotherapy Pain Association http://aocp.csp.org.uk/sites/physiotherapy-pain-associations-new-website

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

- Canadian Pain Journal Publications

  http://www.pulsus.com/journals/home.jsp?sCurrPg=Home&HCtype=Physician

- Association for Contextual Behavioural Science

  http://www.contextualpsychology.org/the_six_core_processes_of_act

- Pain Concern http://www.painconcern.org.uk/

- Action on Pain http://www.action-on-pain.co.uk/

- Pain Relief Foundation http://www.painrelieffoundation.org.uk/

- American Pain Society http://www.americanpainsociety.org/

- Pain psychology http://webspace.ship.edu/cgboer/pain.html

- General perceived self-efficacy http://userpage.fu-berlin.de/~health/world14.htm

- Chronic Pain Policy Coalition http://www.policyconnect.org.uk/cppc/

- Supporting self management in practice toolkit http://www.nes.scot.nhs.uk/education-and-

  training/by-theme-initiative/self-management/supporting-self-management.aspx

- Pain Australia: http://www.painaustralia.org.au/

- Chronicpainscotland.org http://chronicpainscotland.org/

- EFIC - http://www.europeanpainfederation.eu/

- The Pain toolkit http://www.paintoolkit.org/

- Pain UK   https://painuk.org/

(All above links verified working by Sailesh Mishra on 12/07/2017)

Interprofessional pain education

- IASP pain curricula: https://www.iasp-

  pain.org/Education/CurriculumDetail.aspx?ItemNumber=2057

Interprofessional education networks

- European Interprofessional Network http://www.eipen.eu/

- Centre for the Advancement of Interprofessional Education www.caipe.org.uk

A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK

- National Center for Interprofessional Practice and Education (USA) www.nexusipe.org

Additional material is available on the British Pain Society Web Pages

End of Document

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A Practical Guide to Incorporating Pain Education into Pre-Registration Curricula for Healthcare Professionals in the UK