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Division of Pharmacy and Optometry, The University of Manchester, Oxford Road, Manchester, M13 9PT, UK

Identifying the facilitators and barriers for scientific writing among pharmacy students in the College of Pharmacy, Umm Al-Qura University – A qualitative study

M. Ali, A. Al-Mehmadi, A. Al-Sehly, F. Al-Khuzai, M. Nahari, M.j Al-Muwallad

College of Pharmacy, Umm Al-Qura University, Saudi Arabia

Background: Scientific writing in the English language is essential for students of health-related degrees including pharmacy students in this modern era of research (Miedzinski *et al.,* 2001). It not only helps students excel in their degree programmes in universities but also provides a platform for future research publications (Kaliyadan *et al*., 2015). Students find the scientific writing very challenging in countries where English is not the first language, and the pharmacy programmes are delivered in English. The aim of this study was to explore facilitators and barriers for scientific writing among pharmacy students in the College of Pharmacy, Umm Al-Qura University.

Method: In this exploratory study, we used in-depth face-to-face semi-structured interviews in the Arabic language with 4th and 5th year students of the College because research papers and related scientific writing is introduced in the 4th and 5th years in the College. An interview guide was prepared and piloted in the Arabic language. The interview guide included questions focused on gaining an insight into facilitators and barriers for scientific writing from the perspective of students. All 80 4th year students and 76 5th year students were invited via the Student Club platform (in-class and Twitter account) to participate in the study. Eighteen participants (4th year 46%; 5th year 54%) agreed to be interviewed and signed the consent form. The interviews were conducted in the College of Pharmacy. All interviews were audio recorded and transcribed verbatim later. The study was approved by the ethics committee of the College.

Results: Mean interview time was 18 minutes. Two researchers analysed the qualitative data independently using thematic analysis and agreed on the coding and themes later. A third researcher verified the coding and themes on randomly selected transcripts. Early interim analysis has shown facilitator themes around 'having rich vocabulary', 'increased writing activities', 'individual guidance' and barrier themes such as 'lack of vocabulary', 'time constraint', 'lack of ideas', 'lack of guidance' *etc*.

More detailed data including sub-themes and relation between the themes will be available by the conference (final data analysis is underway).

Conclusion: Early analysis shows that efforts are needed from the College to develop the culture of scientific writing among students while they are in the College as part of the curriculum. Individual guidance by mentors must be an integral part of strategy encouraging scientific writing among students of bilingual countries.

One of the limitations of the study was that male (n=62%) and female (38%) participants were interviewed by one male and one female interviewers respectively due to cultural reasons, rather than one single interviewer and this may have introduced interviewer bias.

References

Kaliyadan, F., Thalamkandathil, N., Parupalli, S.R., Amin, T.T., Balaha, M.H. & Al Bu Ali, W.H. (2015). English language proficiency and academic performance: A study of a medical preparatory year programme in Saudi Arabia. *Avicenna Journal of Medicine*, **5**, 140-144.

Miedzinski, L.J., Davis, P., Al-Shurafa, H. & Morrison, J.C. (2001). A Canadian faculty of medicine and dentistry's survey of career development needs. *Medical Education*, **35**, 890-900.

Language and context in calculations: third year pharmacy students' experiences of clinical calculations

A. Astles, E. Bremner, E. Crombie

University of Central Lancashire, UK

Background: The requirement for pharmacists to accurately perform pharmaceutical calculations is self-evident. However, it has been reported that healthcare students have difficulties learning appropriate techniques to undertake calculations (Mayler *et al*., 2011). At the University of Central Lancashire, teaching staff anecdotally reported that students appeared to struggle with calculations when posed in a clinical context. This study aimed to identify if the construct of the clinical scenario made the calculation more difficult for students to perform.

Aims: This study aimed to identify if the construct of the clinical scenario made the calculation more difficult for students to perform.

Method: A paper containing ten calculations constructed within a clinical scenario was produced. The maths component of each scenario was then extracted to produce a duplicate set of ten questions. Students were presented with the two sets of questions during a tutorial activity. All students who attended the tutorials during the week took part in the activity, a total of 103 students. Six tutorials took place, maths calculations were presented first in three tutorials, clinical first in the remaining three. Calculators were allowed.

Results: One mark was allocated per question, giving a mark out of ten for each set. The mean scores for each set of questions were calculated. For those questions constructed within the clinical scenario, the average score was 7.42 (SD 2.2) compared to 8.91 (SD 0.9) for the questions presented as pure maths problems, which was significant (paired t-test $p<0.05$). Approximately half of students had similar scores for their maths and clinical questions. The remainder, despite having similar maths scores to the first group, had significantly lower scores for the clinical questions. This suggests that for some students, their ability to solve clinical problems is compromised despite adequate maths skills.

Conclusion: The data indicate that third year University of Central Lancashire pharmacy students have the maths ability to undertake calculations, but some struggle when the same problem is presented in a clinical context. In light of these findings, the staff team are reviewing teaching of these concepts and examining in detail those questions students found challenging. In addition, resources are being made available to help students understand the clinical context, such as practical demonstrations and videos of infusions, pumps and injection processes.

Reference

Meyler, L., Ramtoola, Z. & Barlow, J. (2011). Evaluation of the ability of pharmacy and medicine students to calculate drug dosage. *Pharmacy Education*, **11**(1), 186–189.

Aims:

· To evaluate the accuracy and speed of using Adaptive Comparative Judgement (ACJ) for marking short essays by staff and students (peer-marking);

· To determine whether learning was enhanced by peer-marking.

Method: The final year M.Pharm Global Health unit (51 students) addresses all the major causes of premature death worldwide. In a mock examination, students (n=50) were asked to describe small interventions they could make in their future careers to reduce the death rate by one of these causes. Themes included HIV/AIDS, cancer, suicide, and road traffic accidents. Students (n=50) used ACJ to mark the work with the instructor determining grade boundaries. In the summative examination, the same procedure was used with academic staff marking the work. Students also completed a short questionnaire about their experience with the marking tool, whereas staff gave open-ended feedback.

Results: Staff and students were similarly consistent in their marking (accuracy 0.94). Students generally found the marking easier than using Turnitin Grademark, were convinced that marking was fair, felt they learned from the marking process, and suggested two or three exercises per semester was most appropriate. Staff liked the marking interface and supported the use of ACJ for carefully selected assignments. The total time taken to mark the assignment was estimated as more than conventional marking by a factor of about three.

Conclusion: Comparative judgement can be used to mark open-ended assignments fairly but is not a time-saver. Questionnaire results indicate that students learn from reviewing their peers' work.

References

Pollitt, A. (2012). The method of adaptive comparative judgement. *Assessment in Education: Principles, Policy & Practice*, **19**, 281-300.

Steedle, J.T. & Ferrara, S. (2016). Evaluating Comparative Judgment as an Approach to Essay Scoring. *Applied Measurement in Education*, **29**, 211-223.

Five go marking an exam question: the use of adaptive comparative judgement to remove subjective bias

Jill Barber (jill.barber@manchester.ac.uk)

The University of Manchester, UK

Background: Comparative judgement can be used to manage subjectivity in assessment. The assessor repeatedly compares two answers and chooses a winner (Pollitt, 2012; Steedle & Ferrara, 2016). Scripts are computer-sorted in order of merit; boundaries are determined by separate review. The bias caused by the presence of "hawks" and "doves" in shared marking is removed.

Pharmacy and medicine students' views on an inter-professional simulated prescribing and dispensing activity

J. Barry[1], C. Cooke[2], S. Haughey[1], G. Gormley[2]

[1]*School of Pharmacy &* [2]*School of Medicine, Dentistry and Biomedical Sciences, Queen's University Belfast (QUB), UK*

Background: Close collaboration between GPs and pharmacists is required to minimise relatively common medication and dispensing errors (FIP, 2015). In December 2015, an investment of GBP2.6 million enabled recruitment of pharmacists to work in GP practices in Northern Ireland. Despite the need to work collaboratively, medical and pharmacy training is often unilateral (Dornan *et al.*, 2009). An innovative inter-professional education (IPE) activity for 4th year medical and 3rd year pharmacy students was developed, aiming to develop the knowledge of their roles in prescribing, dispensing and patient education. Inter-professional student teams had to clinically assess, diagnose, prescribe, and dispense medication(s) for a simulated patient (in a simulated general practice and pharmacy setting).

Method: Four focus groups of six-eight medical and pharmacy students explored their attitudes towards the IPE activity. Three of the focus groups were completed immediately after the activity, the other one week later. Questions posed aimed to explore the impact of the simulated learning activity on students' attitudes towards IPE and ascertain student perceptions on the value of this simulated learning activity and how well it supported their core teaching and mentorship skills. The interviews were audio-recorded, transcribed and analysed iteratively using template analysis. Ethical approval for this study was obtained.

Results: Analysis of the data yielded four main themes of participant's experiences: 1) IPE simulation activity: unlocking new learning experiences; 2) Patient centred practice: a shared understanding; 3) Professional skills: explored and shared; and 4) Professional roles: a journey of discovery, respect and stereotypes.

For many medical students, this was their first opportunity to appreciate the dispensing process and the continuous focus on patient safety came as a surprise. Pharmacy students praised the holistic approach medical students applied to their consultations.

> *"...it's opened my eyes to how patient-centred the dispensing and counselling really is." (*Female, Med FG2*)*

> *"Something I thought was good was with our patient they weren't just asking about drug therapy. They gave other options. Our medical student suggested yoga and that sort of thing, lifestyle things that could help, something other than drugs." (*Female, Pharm FG2*)*

Conclusion: Students broadened their knowledge of each other's expertise in skills and clinical roles while working together, and valued the opportunity to strengthen co-operations with their future colleagues with the shared goal of improving patient care.

References

FIP [International Pharmaceutical Federation]. (2015). Inter-professional Education in a Pharmacy Context: Global Report. The Hague: International Pharmaceutical Federation (online). Available at: https://www.ucl.ac.uk/pharmacy/documents/fip-global-report-2015. Accessed 18th April, 2017.

Dornan, T., Ashcroft, D., Heathfield, H. Lewis, P., Miles, J., Taylor, D., Tully, M. & Wass, V. (2009). An in-depth investigation into causes of prescribing errors by foundation trainees in relation to their medical education: EQUIP study. Manchester: General Medical Council (online). Available at: http://www.gmc-uk.org/FINAL_Report_prevalence_and_causes_of_prescribing_errors.pdf_28935150.pdf. Accessed 18th April, 2017.

Using a private social media platform with pharmacy students

K. Brown, J. Letchford, A. Bolhuis

University of Bath, UK

Background: Although mainstream social media has found application for teaching and learning, a significant barrier was identified for pharmacy education (Brown & Addison, 2015). Students are concerned about the impact on their digital identity and are reticent to engage. The project aimed to overcome this barrier by implementing a private social media platform.

Method: The overall methodology was to determine if a safe community space could be established for pharmacy students and staff to engage outside of the classroom. The app was co-designed with students, coded and trialled in March 2016 with a 2nd year programme unit comprising 135 students and two academics.

Results: The app enabled a vibrant community with over 60% of the student group participating, with most students posting anonymously. Students were able to post questions, and academics used surveys and competitions to interact with the cohort.

Initially, the questions posted by students were answered by academics. As time progressed, these questions were increasingly answered by other students.

Following the trial, quantitative evaluation was conducted using an on-line questionnaire, including both Likert items and free-text questions. The results revealed that students thought that the app facilitated a community of students and academics working together, and that the app was useful to support their learning. It also revealed that academics' involvement is a key ingredient.

Feedback from academics revealed that this was a convenient way to engage, involving minimal workload.

Conclusion: By providing a safe and private space for students, it is possible to overcome the barriers previously identified, and to use social media successfully with pharmacy students. The private nature of the app means that there is no impact on students' digital identity. The need for privacy was further emphasised by the fact that most students chose to post anonymously to avoid judgement by their peers.

References

Brown, A. & Addison, B. (2015). The role of social media in undergraduate pharmacy education. *Social Media for Learning in Higher Education Conference 2015* (online). Available at: https://blogs.shu.ac.uk/socmedhe/files/2015/12/aly_brown_SP1. mp3.

The views of pharmacy students on how they will change their interaction with the multi-disciplinary team (MDT) after participating in an e-prescribing simulation with medical students

N. Brown[1]*, K. Wilson[2], J. Tyrrell[2]

[1]*Division of Pharmacy and Optometry & [2]Division of Medical Education, The University of Manchester, UK*

Corresponding author: Nicola.s.brown@manchester.ac.uk

Background: A full cohort (131) of final year pharmacy students simulated electronic clinical checking with medical students between September to December 2016. Clinical and legal problems were discussed between professions. A safe and appropriate final decision was required under time pressures.

Aim: To establish the views of pharmacy students on how they will change their interaction with the multi-disciplinary team (MDT) after participating in an e-prescribing simulation with medical students.

Method: An on-line questionnaire was distributed at the end of the workshop. The questionnaire extracted themes from established evaluation tools in inter-professional literature which matched the workshop inter-professional learning outcomes. Further open questions addressed expected challenges - prioritising tasks and limitations. Each theme had a statement and a five-point Likert scale. An open question addressing expected changes to student inter-professional approach was thematically analysed using two layers of coding.

Results: Response rate was 51 (39%). Students were comfortable talking to another healthcare student (4.3) and felt problems with patient safety were well discussed (4.1).

Key themes from what students will change in engaging with the multi-professional team, included:

Skill mix appreciation:

"Discuss more with other professionals. Use their knowledge with ours for best patient outcomes".

"Be more aware of my limitations and make better use of other professionals' expertise"

Communication Skills:

"I understand the language needed to use to efficiently communicate my point between different professionals."

Confidence building:

"I will feel more comfortable consulting doctors with any queries."

Conclusion: Clinically-checking role-play and discussion with the prescriber has embedded the importance of the pharmacist role in ensuring patient safety. Open comments suggest some students will proactively open discussions with the MDT recognising different skills the MDT brings to patient care. The simulation has given some students the confidence in their knowledge and communication to engage with these discussions in the future.

Reference

King, G., Orchard, C., Khalili, H. & Avery, L. (2016). Refinement of the Inter-professional Socialization and Valuing Scale (ISVS-21) and Development of 9-Item Equivalent Versions. *Journal of Continuing Education in the Health Professions*, **36**(3), 171-177.

Inclusivity & wellbeing: A pharmacy student ambassador project (15-17)

M. Cofie*, F. Khan, W. Marlow, N. Dossa, S. Tsegah, C. Prescott, K. J. Williams, S. Freeman.

The University of Manchester, UK

Corresp. author: magdalene.cofie@student.manchester.ac.uk

Background: The Higher Education Funding Council for England (HEFCE) highlighted differential outcomes and mental wellbeing as priority areas to improve student experience (Mountford-Zimdars *et al*., 2015). To address this the Manchester Pharmacy School (MPS) prioritised engagement with three university campaigns: 'We Get It' to promote equality, diversity and inclusion (EDI); 'We Belong' to promote global inclusivity, and 'Manchester 6 Ways to Wellbeing'. This evidence based project stemmed from the University of Birmingham's Black Student Ambassador scheme.

Aim: To pilot a student ambassador programme safely challenging negative stereotypes, increasing sense of belonging, and supporting engagement with the six ways to wellbeing.

Method: Using a co-production method 4th year M.Pharm project students worked with staff as partners to

appoint 25 volunteer Inclusivity & Wellbeing ambassadors from all student years. The ambassadors received training in EDI, unconscious bias and being an active bystander (Fenton & Mott, 2015). The ambassadors organised student led events and workshops to publicise the campaigns, encouraging pharmacy student involvement.

Results: Activities included 'We Get It' events, resulting in 503 (15-16) and 332 (16-17) students and staff signing a University-wide pledge to stand up to sexual harassment. In 2016/17, 175 1st year M.Pharm students participated in a workshop titled 'Where to draw the line', in which the majority of students signed the pledge. In 15-16 the ambassadors hosted an open event on International Women's Day with ~100 participants, which included inspiring talks from senior female pharmacists and E&D activists. Pre- (250 responses)/post- (83 responses) evaluation of the 15-16 events showed an increase in student awareness of EDI issues from 52% to 94% and the perception of commitment by MPS to equality from 84% to 96%. Pre- (140 responses)/post- (130 responses) evaluation of the 16-17 questionnaires to 1st year M.Pharm students showed a dramatic increase in the awareness of the 'Manchester 6 Ways to Wellbeing' programme with only 3.6% of students aware before and 59.2% aware after the events.

Conclusion: This two year pilot has had a positive impact on pharmacy students and their learning environment. Limitations have included the low response post-evaluation for the 15-16 data and the 16-17 data only collected from 1st year M.Pharm students. The ambassador programme is now embedded in MPS and will run in future academic years. This project has led to the University leading a successful HEFCE bid to expand a 'Diversity and Inclusion Student Ambassador Programme' across the University of Manchester and also three partner institutions.

References

Fenton, R.A. & Mott, H.L. (2015). The Intervention Initiative: Student feedback February 2015. Project Report. Public Health England & University of the West of England, Bristol, UK. (online). Available at: http://eprints.uwe.ac.uk/28164

Mountford-Zimdars, A., Sabri D., Moore J., Sanders J., Jones S. & Higham L. (2015). Causes of differences in student outcomes. Report to HEFCE by King's College London, ARC Network & The University of Manchester (online). Available at: http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/Causes,of,differences,in,student,outcomes/HEFCE2015_diffout.pdf.

Evaluation of the mini-CEX by 4th year pharmacy undergraduates

A. Conway, P. Dhaliwal, V. Savickas

University of Brighton, School of Pharmacy and Biomolecular Sciences and Pharmacy Department, Brighton and Sussex University Hospitals NHS Trust, UK

Background: The mini-Clinical Evaluation Exercise (mini-CEX) was implemented into the 4th year M.Pharm during their hospital placement. Studies indicated the mini-CEX is valid, reliable, acceptable, and feasible workplace-based assessment tool. However none of these studies were undertaken with pharmacy students. This study's aim was to evaluate the mini-CEX within final year pharmacy undergraduates.

Method: Students completed two mini-CEXs as part of their placement. Details of the mini-CEX were presented to students during a pre-placement workshop and on the placement first day. An on-line post-graduate video demonstrating the mini-CEX was available. Placement assessors attended a workshop on conducting a mini-CEX and providing feedback. A valid and reliable questionnaire derived from literature sources was piloted and distributed to students at four points during the year following university lectures scheduled after placements. The questionnaire used a Likert-type scale and was split into themes including: satisfaction, preparation, assessor performance, feedback, and validity. Responses were analysed using Excel 2013® with the response rate for each question calculated. School of Pharmacy Ethics was granted.

Results: Questionnaire response rate was 64.8% (70/108). Mean satisfaction score with the mini-CEX was 7.25/10. Students felt pre-placement preparation was lacking with 51.4% stating they received clear instructions on how to perform a mini-CEX and 28.6 % felt the training video was useful in preparing for the mini- CEX.

Fifty-four point three percent of students felt the mini-CEX provided an accurate measure of their pharmaceutical knowledge; 46.6% an accurate measure of their pharmaceutical skills. Eighty-five point seven percent of students felt satisfied with feedback provided by the assessors; 74.3% felt the assessors were adequately trained in providing valuable feedback and 80% felt the feedback provided on the 1st mini-CEX helped them develop for the 2nd mini-CEX.

Conclusion: Students were satisfied with the mini-CEX, particularly with feedback received from assessors. Further student preparation for the mini-CEX is needed with a specific video tailored for them. Validity of the mini-CEX was a concern as students did not feel it accurately represented their pharmaceutical knowledge and skills

References

Alves de Lima, A.E., Conde, D., Aldunate, L., van der Vleuten, C.P. (2010). Teachers' experiences of the role and function of the mini clinical evaluation exercise in post-graduate training. *International Journal of Medical Education*, **1**, 68-73.

Wilkinson, J.R., Crossley, J.G., Wragg, A., Mills, P., Cowan, G. & Wade, W. (2008). Implementing workplace-based assessment across the medical specialties in the United Kingdom. *Medical Education*, **42**, 364-73.

Can the Use of Active Learning Strategies Improve Student Outcomes and Perceptions Within International Branch Campuses?

D. Corbett*, L. Hanna, M. Hall, D. Rooney.

Queen's University Belfast UK

*Corresponding author: d.corbett@qub.ac.uk

Background: Recently, several UK universities have developed International Branch Campuses (IBCs) - campuses or colleges located within the students' country of origin, but which deliver the UK institution's degree courses (Becker, 2015). IBCs possess their own educational difficulties from several perspectives, including issues with the English language (EL) and previous educational experiences/cultures, which may prevent students fully meeting course objectives. This work aimed to investigate whether the use of active learning strategies at an IBC improved students' academic performance in comparison to traditional teaching, and to ascertain the students' views on this teaching.

Method: Two cohorts of students undertaking a pharmaceutical sciences degree at an IBC were taught the same material across three Level 1, 1st semester modules using one of two strategies:

- Cohort 1 (Year 1 of study, n=52) were taught using traditional "chalk and talk" methodologies

- Cohort 2 (Year 2 of study, n=76) were taught using a range of active learning strategies (Hung, 2015), including a 'flipped classroom" approach.

Assessment methods were the same for both cohorts, taking the form of end of module examinations, which contained combinations of multiple choice, short answer, and long answer questions. Outcomes relating to academic performance were determined via comparison of student pass rates within each cohort. Students in Cohort 1 were then taught using active learning strategies across all Level 1, second semester modules, after which self-administered questionnaires (n=20 questions) were employed to ascertain the opinions of these students who had experienced both forms of teaching (following ethical approval and piloting). Teaching staff met on several occasions for reflective discussions.

Results: Comparison of examination performance indicated that students were significantly more likely to perform well in examinations when active methods were used ($p<0.0001$): Cohort 1 exhibited a pass rate of 66% for modules that were taught traditionally, whilst Cohort 2 (active) produced a pass rate of 91% for the same modules. From the evaluation questionnaire (response rate 88.2%), 77% of students from Cohort 1 indicated that active techniques assisted their understanding more than the traditional approaches they experienced. Staff also considered that active teaching provided greater learning opportunities than traditional methods, however it was also more time consuming.

Conclusion: Active learning strategies such as flipped classroom have a place in the teaching of students at IBCs. However, further novel approaches are required, which take account of various issues, including staff resource and capacity, to allow these students to perform similarly to their counterparts in the UK.

References

Becker, R. (2010). International branch campuses: new trends and directions. *International Higher Education on-line*, **58**. Available at: http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/Number58/p3_Becker.htm. Accessed 15th April, 2017.

Hung, H. (2015). Flipping the classroom for English language learners to foster active learning. *Computer Assisted Language Learning*, **28**(1), 81–96.

Delivering pharmacology laboratory sessions using Technology Enhanced Learning (TEL)

R.C. Gopalan, B.R. Tuladhar, D. Brown, D. Wood, T.M. Palmer

University of Bradford, UK

Background: A well designed TEL-environment promotes learners' engagement in the process of manipulating information and critical thinking (Goodyear & Retalis, 2010). Here we present a pilot study describing the design of a laboratory session intended to support the knowledge of cardiovascular pharmacology of a Year 2 cohort of 100 M.Pharm students through TEL. The aim was to evaluate the effectiveness of the design and delivery of the laboratory session, which used the Pharmacology Editor of the Human Patient Simulator software; müse and LabTutor, to improve student learning, engagement, and experience.

Method: Students were required to identify five anonymised drugs based on their effects on the cardiovascular system (CVS) incorporating the Pharmacology Editor component of the müse software system and LabTutor, a data acquisition system enabling students to visualise variations in heart rate and blood pressure. Fifty-six students voluntarily completed an eight-question, five-point Likert scale questionnaire approved by the Ethics Committee of the University of Bradford (Ref: Ethics Checklist: EC2394). The students

were provided with the questionnaire at the beginning of the laboratory session for anonymised completion and return at the end of the session. Data were then analysed using Microsoft Excel®.

Results: The majority of the students (75%) found the experimental design easy to understand while 57% felt that these sessions would prepare them well for their role as pharmacists. The lower affirmative response for the latter question was due to the fact that around 32% of the students were undecided, which could be attributed to their being in the early stage of the programme. Over 75% of the cohort agreed that the session enhanced their understanding of drug action in the CVS through research-based learning

Conclusions: Our data indicate these sessions improved student engagement and understanding of core concepts of drug action in the CVS.

References

Goodyear, P. & Retalis, S. (2010). Technology enhanced learning: Design patterns and pattern languages. Rotterdam: Sense Publishers

Motivating pharmacy students to appreciate and recognise how pharmacists make a valuable contribution to both primary and secondary healthcare

L. Hanna & M. Hall

Queen's University Belfast (QUB), UK

Background: The aim was to enable pharmacy students to recognise ways that pharmacists contribute to primary and secondary healthcare (Nazar *et al.*, 2015; Walsh *et al.*, 2016). To achieve this, an activity similar to a conference was prepared, with students developing posters outlining particular roles and giving an oral presentation to an audience of staff and peers.

Method: Level 4 M.Pharm students (n=130) at Queen's University Belfast (QUB) were divided into sixteen groups with each group randomly allocated a particular topic. These included the role of the pharmacist in: medicines optimisation; e-health; antibiotic stewardship, and pharmacovigilance. Students were provided with guidance required to complete the task *i.e.* (a) topic information, groups and reputable resources; (b) poster preparation; (c) deadline for submission; (d) the poster presentation session; and (e) assessment. A GBP500 prize was offered to the group with the top mark. At the session, posters were displayed and an oral presentation was delivered by two nominated members of each group. Academic staff acted as the 'judging panel'. They assessed posters and presentations independently and met together to reach a final consensus. Rubrics were developed and used for the assessment. This learning method (encouraging and enhancing independent learning following some initial guidance) was evaluated by

considering grades obtained and feedback from the module review (completed by the students) and staff involved.

Results: All groups successfully completed the task; marks ranged from 57.3% to 75.5% (mean 69.0%). The module review was largely positive but a few students mentioned that some group members did not take it seriously. Staff considered the activity to be authentic and valuable.

Conclusion: It appears that this is an effective way for future pharmacists to learn about how pharmacists contribute to healthcare and improve patient outcomes. The monetary incentive may have contributed to the success by improving student motivation. Future changes could include the allocation of an individual and group mark and involvement from external experts/ stakeholders.

References

Nazar, H., Nazar, Z., Portlock, J., Todd, A. & Slight, S.P. (2015). A systematic review of the role of community pharmacies in improving the transition from secondary to primary care. *British Journal of Clinical Pharmacology*, **80**(5), 936-948.

Walsh, K.A., O'Riordan, D., Kearney, P.M., Timmons, S. & Byrne, S. (2016). Improving the appropriateness of prescribing in older patients: a systematic review and meta-analysis of pharmacists' interventions in secondary care. *Age and Ageing*, **45**(2), 201-209.

Student evaluation of 3rd year Masters of Pharmacy (M.Pharm) community pharmacy placements

S. Jacobs & V. Silkstone

Division of Pharmacy and Optometry, The University of Manchester, UK

Corresponding author: sally.jacobs@manchester.ac.uk

Background: The General Pharmaceutical Council educational standards (GPhC, 2011) require that the M.Pharm curriculum includes practical experience of working with patients, carers and healthcare professionals. For many years, the Manchester University M.Pharm has offered hospital placements where students apply their learning to real-life scenarios (Hanning *et al.*, 2002). A series of community pharmacy placements is now being rolled out. In the 3rd year, this involves a two-day observational placement with a range of tasks aligned to the intended learning outcomes of the taught units. This paper reports an evaluation of students' satisfaction with their placement and changes in perceived confidence and ability in relation to learning outcomes.

Method: Students attended a range of independent and multiple pharmacies. Online self-completion questionnaires, administered before and after placement, included seven items on satisfaction with the pharmacy and ten items on perceived confidence/ability in relation to learning outcomes, all on five-point Likert scales.

Overall scores (/35) were calculated for placement satisfaction and perceived confidence/ability (/50) before and after placement. Change in confidence/ability was calculated for each learning outcome and an overall score determined (Cronbach's α all ≥0.7). Data analysis, using SPSS v.22, included ANOVA, correlation and *t*-tests.

Results: One hundred and forty-three students (94.7%) completed both pre- and post-placement questionnaires. The mean (SD) placement satisfaction score was 29.6 (4.4), range 10 to 35, and did not relate to pharmacy type (*e.g.* independent, multiple). The mean (SD) change in confidence/ability score was 3.8 (4.5), range -8 to 16. Change in confidence/ability score did not relate to pharmacy type but did relate to experience, being higher in those with no previous work experience (7.6 vs 3.4, *t*=3.5, *p*=0.001). There was a significant correlation (*r*=0.23, *p*=0.005) between placement satisfaction and change in confidence/ability scores.

Conclusion: Although limited to a single year group in one academic year, the findings suggest that students were generally satisfied with their allocated placement pharmacy and demonstrated increases in confidence and ability across a range of learning outcomes, irrespective of the type of pharmacy they visited. Regular evaluation can identify placements offering a better experience for students which can help to ensure that learning outcomes are maximised.

References

General Pharmaceutical Council [GPhC]. (2011). Future Pharmacists Standards for the Initial Education and Training of Pharmacists. London: General Pharmaceutical Council.

Hanning, L., Price, G., Scanlan, J., Silverthorne, J., Cantrill, J., Hey, R., Freeborn, S. & Cooke, J. (2002). A new approach to clinical pharmacy practice teaching in the four-year degree course. *Pharmaceutical Journal*, **269**, 163-165.

A preliminary survey of the penetration, application and confidence in mobile health apps in Malaysia

F. Shipton, C. Chen, M. Y-Q Chai, Y-F Tan, T-J Khoo

The University of Nottingham Malaysia Campus, School of Pharmacy, Selangor, Malaysia

Background: Healthcare related applications (apps) for smartphones provide the general population and healthcare professionals with a convenient source of information and advice. Some of these apps have been designed specifically for healthcare professionals, while others are aimed at the general public. This study aims to examine how readily accepted these apps are, and their usage within Malaysia.

Method: A survey was handed out to members of the general public and healthcare professionals in Peninsular Malaysia. A sample size of 175 was estimated as sufficient. Participants were asked 33 questions.

Results: One hundred and seventy-five participants completed the survey, of which 16% (n=28/175) were healthcare workers and 54% (n=94/175) were students. Only 4% (n=7/175) of the participants did not own a smartphone. Most of the participants had between 1-5 health related apps on their phone, only 7% (n=18/175) having more than this, of which 67% (n=12/18) were students or healthcare professionals. Out of the health related apps that participants possessed, a significant number had apps relating to drug information and diet. Healthcare professionals used apps that provided drug information, while students tended to use the calculators and diet and exercise related apps.

Conclusion: This study has found that there is a large number of people using health apps, some of this use is casual, while others use these apps for study or to assist in work. Some doubt about the reliability of apps and security of data was observed. Many students expressed a desire for health apps that can be used in preparation for travelling, for example app that covers the spread of influenza and other outbreaks. Students and healthcare professionals expressed interest in apps that connect them with their doctor/pharmacist, their organisation, list nearby clinics/pharmacies, and finally reminders for medical appointments. Apps that allow users to link to their organisation can provide users with better communication, hence enhance the efficiency of a workplace and improve employee performance, satisfaction, and work relationships.

References

Bibault, J.E., Leroy, T., Blanchard, P., Biau, J., Cervellera, M., Diaz, O., Faivre, J.C., Fumagalli, I., Lescut, N., Martin, V., Pichon, B., Riou, O., Thureau, S. & Giraud, P. (2014). Mobile technology and social media in the clinical practice of young radiation oncologists: Results of a comprehensive nationwide cross-sectional study. *International Journal Radiation Oncology, Biology, Physics*, **90**(1), 231–237.

Dasari, K.B., White, S.M. & Pateman, J. (2011). Survey of iPhone usage among anaesthetists in England. *Anaesthesia*, **66**, 620-631.

Katz-Sidlow, R.J., Ludwig, A., Miller, S. & Sidlow, R. (2012). Smartphone use during inpatient attending rounds: Prevalence, patterns and potential for distraction. *Journal of Hospital Medicine*, **7**(8), 595–599.

Payne, K.F.B., Wharrad, H., Watts, K. (2012). Smartphone and medical related App use among medical students and junior doctors in the United Kingdom (UK): a regional survey. *BMC Medical Informatics and Decision Making*, **12**, 121.

Evaluation of SAGE and THYME® foundation level training within the M.Pharm at Aston University

N. Lewis (lewisn1@aston.ac.uk)

Aston University & St Mary's Hospice, Birmingham, UK

Background: Foundation level SAGE and THYME® training on responding to concerns/distress was piloted in the 3rd year of the M.Pharm degree at Aston University. The training was delivered face to face by trainers from St Mary's Hospice and involved discussion of the SAGE and THYME mnemonic and role-play to train students how to listen and respond to patients/carers who are distressed or concerned. This study aimed to evaluate the inclusion of SAGE and THYME® training in the degree.

Method: All students participating were asked to complete a two part paper questionnaire, pre- and post-training, containing open and closed questions and ten point confidence scales. Data from the questionnaires was then analysed using Microsoft Excel®.

Results: The training session was attended by 134 students, and 130 questionnaires were completed (97% response rate). A small number (11.5%, n=15/130) of students had not encountered persons in distress. Other students had encountered persons in emotional distress in multiple settings with home/everyday life (54%, n=70/130) and part-time work (50%, n=65/130) being the most prevalent. The majority of students ranked their confidence levels higher after the training for both approaching a distressed person (92%, n=119/130) and talking about emotions (82%, n=107/130). Overall students looked forward to the session (82%, n=107/130) and enjoyed it (98%, n=128/130). Students stated it would benefit future practice (99%, n=129/130) and identified multiple settings to apply it; with the most popular settings being pre-registration training (93%, n=121/130), and summer placements (85%, n=111/130).

Conclusion: The training was an enjoyable, beneficial activity that increased the confidence of students in both approaching a distressed person and talking about emotions. Many students come into contact with distressed persons in a variety of environments, so this training could be applied in many situations.

Students' views of healthcare policy and professional advocacy in the Manchester M.Pharm course

P.J. Lewis, L. Le Quang & A. Al-Attbi

The University of Manchester, UK

Background: The 'Now or Never report' highlighted pharmacy's lack of engagement in health policy and debate (Smith *et al.*, 2013). It is important, therefore, to produce pharmacy graduates who can engender change and who are actively involved in professional advocacy.

In the United States (US), professional advocacy is increasingly covered as part of the undergraduate pharmacy curricula (Deloatch *et al.*, 2012). Within the University of Manchester's pharmacy course, NHS policy is briefly covered in Year 3 but whether this should be broadened to better develop professional advocacy skills is unknown.

Aim: To explore students' views on developing the course to provide greater professional advocacy training.

Method: A paper-based 23 item questionnaire was devised from the literature and completed by undergraduate students at the end of scheduled lectures. A mixture of multiple-choice and Likert scale questions were included. Data was entered into SPSS® and univariate analysis conducted. Ethical approval was given by the University of Manchester Research Ethics Committee.

Results: Thirty-eight per cent (239/623) of students participated in the survey. Just under half (47%) of respondents kept up to date with changes in healthcare policy but most (95%) believed that having knowledge of healthcare policy was important. Over half of respondents (62%) wanted to learn about the organisation of the NHS earlier in the M.Pharm course and 59% wanted greater understanding of policy. More guest speakers with professional leadership roles were sought by 64% of respondents and two thirds (67%) of respondents agreed that there should be an elective healthcare policy and advocacy course. Student responses were comparable across years.

Conclusion: The findings indicate a desire for greater knowledge and skills in policy and professional advocacy. Potential avenues for the development of the course should be explored so that we might produce graduates who are well prepared to influence change.

References

Deloatch, K.H., Gannett, P.M., Hageman, T.M., Law, A.V., Smith, C. Trang, D. & Reynolds, J.R. (2012). Student Engagement in Professional Political Advocacy in Colleges/ Schools of Pharmacy. *Currents in Pharmacy Teaching and Learning*, **4**(3), 207-2011.

Smith, J., Picton, C. & Dayan, M. (2013). Now or Never: Shaping pharmacy for the future. *The Royal Pharmaceutical Society.*

Using academic simulation to teach clinical practice skills to final year undergraduate pharmacy students

S.J. Martin[*], N. Brown, J. Silverthorne, D. Steinke

Division of Pharmacy and Optometry, University of Manchester, UK

[*]*Corresponding author: Sandra.martin@manchester.ac.uk*

Background: Simulation has been shown to be effective in teaching pharmacy practice skills (Kane-Gill & Smithburger, 2011) and the Year 4 pharmacy undergraduate unit "The Patient: Preparing for Clinical Practice" uses academic simulation teaching as one part of a combined approach to teach these skills. The aim of this research was to trial and assess this method for teaching clinical practice skills to final year undergraduate students.

Method: Students were divided into small groups. The "hypoglycaemia" case was pre-programmed into the SimMan™. During the 30 minute teaching, students spent 20 minutes working as a team to check the patient's medical and drug history, interpret basic clinical signs and symptoms, and reach a working diagnosis. The simulation was paused whilst the students discussed their findings with the facilitator and selected appropriate treatment from a range of management options. The simulation was re-started, treatment administered, and the response of the patient is observed. This was followed by a post-simulation debrief in which the key learning was discussed with the facilitator.

Results: Facilitator feedback described that students demonstrated the ability to use questioning and clinical reasoning skills. From the evaluation questionnaires students reported a high degree of satisfaction with SimMan™ sessions because they could interact with the simulator and they could see the results of actions quickly. "*A lot of different skills covered in a short amount of time*" and "*..great application of knowledge, tied so many concepts together good team work and communication practice*".

Conclusion: These sessions were formative to prepare students for an OSCE and for their pre-registration year. However using this case-based academic simulation allowed students the opportunity to apply clinical knowledge, agree a management plan, administer treatment, and monitor the impact of this treatment in a safe environment. Academic simulation using a high fidelity mannequin complements the traditional approach of small group case-based learning for teaching clinical practice skills.

References

Kane-Gill, S.L., and Smithburger, P.L, 2011. Transitioning Knowledge Gained From Simulation to Pharmacy Practice. *American Journal of Pharmaceutical Education*, **75**(10), Article 210, 1-7.

A study exploring the challenges faced by newly qualified hospital pharmacists within the West Midlands

L. McComb, N. Lewis, K. Wilson

Aston University, Birmingham, UK

Background: The study aimed to identify what skill areas present challenges to newly appointed basic grade hospital pharmacists. The research was specific to the West Midlands (WM) region, following concerns of the West Midlands Clinical Pharmacy Network (WMCPN) with regards to the difficulties experienced in recruitment and retention of basic grade pharmacists.

Method: Data were obtained from both newly qualified pharmacists starting at a WM Trust within the past five years, and from senior pharmacists/managers with the use of two electronic self-completion surveys (using Bristol Online Survey software). These were distributed via email and advertised at Royal Pharmaceutical Society meetings and via social media platforms. A range of techniques were utilised for data analysis as the data received varied from ordinal to descriptive.

Results: The survey of senior pharmacists/management received 18 respondents. A total of 30 respondents participated in the survey of recently appointed pharmacists. The small sample size was recognised as a limitation of the study. The most significant challenge and skill weakness reported by both basic grade pharmacists (93.4%, n=28), senior pharmacists/management (66.7%, n=12) was answering specialist clinical questions. A second issue from a senior pharmacists'/management perspective was time management (55%, n=10). A relationship between pre-registration sector and challenge experienced was established. Pharmacists from a community background experienced a significant difference ($p<0.005$) in challenge experienced for a number of skills in comparison to hospital pre-registration pharmacists, *e.g.* interpretation of biochemistry, following guidelines, and roles of the wider team.

Conclusion: It is recommended that Trusts should implement training for newly qualified pharmacists focused on: answering specialist clinical questions and time management. Those from a community background require supplementary training on a number of skills. Trusts should adapt their existing training programmes to the sector of pre-registration training undertaken by their new recruits.

Evaluation of a "flipped" classroom model within a pharmacy professional practice class: A comparison across three consecutive cohorts

P. Naik, S. Balashanker, A. Emtage, M.J. Boyd

University of Nottingham, UK

Background: The "flipped" classroom model promotes student responsibility for learning and increased one-on-one interaction with the instructor (Bergmann & Sams, 2012) allowing classroom time to be maximised for more complex activities. This model was first implemented during the Professional Practice (dispensing) classes of the M.Pharm programme at the University of Nottingham in September 2014.

Aims: To investigate student performance across three consecutive cohorts at the Malaysia campus, one before and two after the implementation of the "flipped" classroom model.

Method: Students' performance for one particular practical each during the 2nd and 1st year of the programme was retrospectively analysed. Average exercises completed per student, percentage who completed a complex exercise requiring role-play, and percentage making a particular serious error were monitored. Data were analysed using descriptive statistics. Ethical approval was secured from the Science & Engineering Research Ethics Committee of the university.

Results: Average exercises completed during the 2nd year practical significantly ($p<0.01$) increased from 5.44 (±1.31) prior to implementation to 6.47 (±1.95) and 6.23 (±2.15) during the 1st and 2nd year of implementation respectively. Percentage who completed complex exercises increased from 67.0% to 79.6% and 77.7% respectively.

Average exercises completed during the 1st year practical significantly decreased ($p<0.01$) from 7.57 (±0.79) prior to implementation to 5.86 (±1.74) and 6.62 (±1.63) during the 1st and 2nd year of implementation respectively. Percentage of students making a serious error dropped from 39.3% to 19.7% and 28.4% respectively.

Conclusion: The increase in complex exercises completed suggests this model allows students to cover more material at greater depth. The fewer serious errors made suggests that prior preparation allows students to progress faster. The reduction in total output among 1st year students, however, could be because when simpler exercises are involved, students' ability to manage time effectively in class is adversely affected with prior knowledge of the class exercises. Further studies to assess students' performance in later years of the programme will be valuable to fully appreciate the outcome of this model.

Reference

Bergmann, J. & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day. *United States of America: International Society for Technology in Education/ ISTE*, 17-37.

Perceptions of undergraduate healthcare students and academic facilitators on an inter-professional healthcare leadership workshop

H. Parmar*, J. Hall, J. Cleator, R. Craven, B. Skelly, K. Uus, E. Uppal

The University of Manchester, UK

Corresponding author: harsha.parmar@manchester.ac.uk

Background: Healthcare leadership has received increasing emphasis following publication of the Berwick Report and Carter Review. To address undergraduate leadership requirements of the General Pharmaceutical Council (GPhC), a Year 3 unit was designed using team-based learning (TBL). The first workshop considered leadership style and self-awareness and was inter-professional (pharmacy, dentistry, dental hygiene, audiology, nursing and midwifery undergraduate participants (UGPs)). This study explores perceptions of UGPs and facilitators on this workshop.

Method: Pre-workshop, UGPs completed a resilience questionnaire (identified personal strengths/weaknesses), and pre-reading on leadership models (assessed during workshop, via readiness assurance tests (RATs)). Group activities focussed on self-awareness and workplace-based leadership scenarios. Post-workshop, UGPs fed back their views using a 'stop-change-continue' post-it-note approach, and facilitators were asked to state how they felt it contributed to participant's future practice; both were thematically analysed.

Results: Seven hundred and seventy-six UGPs and 18 facilitators attended the workshop and 387/776 UGP comments were received. UGPs felt it was beneficial to attend a multidisciplinary workshop on a common topic where they could learn with and about each other before entering the workplace. Nursing UGPs and their facilitators felt this could be achieved without the RATs, and replaced with more practice-focussed discussions; pharmacy UGPs preferred the TBL structure. Dentistry UGPs felt reflection on personal leadership style should be completed individually, whereas both nursing and pharmacy UGPs felt it beneficial to discuss this inter-professionally. Facilitator questionnaire completion was 11/18. Most felt the TBL approach focussed learning; the workshop was successful in increasing awareness of professional roles, engaging inter-professional discussion on leadership, and completion of the resilience report led to meaningful discussions.

Conclusion: UGPs and facilitators in this study felt the greatest benefit was the opportunity to learn with and about each other's role, and engage in discussions about leadership prior to entering the workplace. Some UGPs and facilitators felt that 'testing' of knowledge could be replaced by increased practice-focussed discussions.

References

GPhC. (2011). Standards for the Initial Education and Training of Pharmacists (online). Available at: http://www. pharacyregulation.org/sites/default/files/GPhC_Future_Pharma cists.pdf. Accessed 27th February, 2017.

Project Ponder - using clicker technology to encourage in-class engagement

R.J. Pearson (r.j.pearson@keele.ac.uk)

School of Pharmacy, Keele University, UK

Keywords: Clickers, Peer Instruction, Problem-based Learning

Background: 'Project Ponder' was created to help pharmacy students think more deeply about their chemistry knowledge through the promotion of peer instruction and debate. This work used the author's past experiences of clicker technology alongside some key literature concepts (Lasry *et al*. 2008; 2013) to provide a better problem-based learning tool.

Aim: To improve the student learning experience and assessment performance using clicker technology in combination with peer instruction.

Method: Phase 1 of Project Ponder involved 127 1st year pharmacy students receiving a clicker handset. Multiple-choice questions were then integrated into problem class sessions. All responses were anonymously recorded, with re-polling and peer discussion included where necessary.

Phase 2 used the same student cohort as they progressed into Year 2. Using a team-based clicker model, more sophisticated clicker handsets were introduced to allow short answer questions to be considered alongside multiple-choice questions

Project success was measured based on anonymous cohort feedback and exam performance, across both years, when compared against the previous cohort where Project Ponder was not embedded. Whilst it could be argued that any significant variations may merely relate to differences between cohorts, this suggestion is considered unlikely since the same student recruitment criteria and interview process was applied throughout.

Results: Following Phase 1, 94% of students agreed that clicker technology improved their learning experience and 97% responded positively to inserting the project more widely on their course. Similar feedback followed Phase 2, whilst student failure rates and overall exam performance both improved by at least 4% for each phase.

Conclusion: The data strongly reinforce the notion that clicker technology alongside peer instruction can improve the student learning experience. Positive feedback was also received via free-text survey options. Such findings underpin the inclusion of this learning approach more widely within the pharmacy curriculum.

References

Lasry, N., Mazur, E. & Watkins, J. (2008). Peer instruction: from Harvard to the two-year college. *American Journal of Physics*, **76**,(11), 1066-1069.

Lasry, N., Watkins, J., Mazur, E. & Ibrahim, A. (2013). Response times to conceptual questions. *American Journal of Physics*, **81**(9), 703-706.

Higher levels of self-reported stress in pharmacy undergraduate students compared to medicine and biochemistry students

A. Ross, A. Sewell, Y. Mbaki, D. Merrick

University of Nottingham, UK

Background: High levels of stress in students can have detrimental effects on their wellbeing and academic performance. Research suggests that pharmacy students experience higher levels of stress and adopt a range of strategies to cope. This study aimed to make comparisons between University of Nottingham pharmacy students in different year groups, assessed against medicine and biochemistry students, in regard to their lifestyle factors and stress levels.

Method: A wellbeing questionnaire, including an adapted Perceived Stress Scale (Cohen *et al.,* 1983) and the FANTASTIC Lifestyles assessment (Wilson & Ciliska, 1984), was distributed to all students in the 1st three years studying pharmacy, medicine and biochemistry at the beginning and end of the Autumn semester in 2016.

Results: Data showed self-reported stress levels were comparably low and similar in all student cohorts at the beginning of the Autumn semester. At the Autumn semester, self-reported stress was higher in pharmacy students in comparison to medicine and biochemistry students in all year groups studied. Self-reported stress was significantly higher in 2nd year pharmacy students than other pharmacy year groups (p=0.003) and higher than all other student cohorts. Although reporting a higher average level of stress, 2nd year pharmacy students participated in more physical exercise but had a higher caffeine intake (p=0.05), hypothesised to be a coping strategy aligned to the intensity of the course assessments at that time.

Conclusion: Some lifestyle trends, although complex in their relationship with stress, were noted in all student populations of a particular year and therefore may suggest that common targeted interventions to promote a healthy work-life balance may be beneficial. At the University of Nottingham this data is currently being utilised to plan an additional wellbeing course to promote positive lifestyles changes and increased wellbeing in medicine. Promoting wellbeing for healthcare professionals may have a huge impact on patient care by preventing burnout and potential error.

References

Cohen, S., Kamarck, T. & Mermelstein, R., (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, **24**(4), 385–96.

Wilson, D.M.C. & Ciliska, D., (1984). Lifestyle Assessment. *Canadian Family Physician*, **30**, 1527.

Habitus and the trainee pharmacist

J. Silverthorne*, H. Gunter

The University of Manchester, UK

Corresponding author: jennifer.silverthorne@manchester.ac.uk

Background: The pre-registration year is important in the development of pharmacist professional identity and practice. Bourdieu's conceptual tools provide a theoretical framework for understanding complex ways in which individuals engage with practice. *Habitus* (Bourdieu, 1977) is an individual's subjective system of social expectations and norms, developed through life experience and revealed through practice.

Aims: To investigate the professional identity and practice of pharmacy graduates in the pre-registration year; specifically, how is trainee identity revealed through practice?

Methods: University ethical approval was obtained. Four community pharmacy pre-registration trainees working in north-west England were recruited, having volunteered during their final year of the M.Pharm degree at one institution. A case study methodology using interviews, observations and documents was used to explore practice and self-perceptions. Data were analysed thematically to develop individual portraits which were then subjected to a cross-portrait analysis using Bourdieu's conceptual tools.

Results: A distinct trainee identity was expressed, revealed through novice, supervised practice. All participants then experienced acute stress upon qualification as pharmacists when engaging in unsupervised, autonomous practice. Three trainees implicitly conceptualised their training environment as a safety net, which protected them from feeling the pharmacist's responsibility. This practice included deferring decision-making and assuming the role of a technician. Using *Habitus* to explore identity and practice uncovered an identity misaligned with the autonomous role of pharmacist. The M.Pharm with its learning structures designed to allow safe simulated practice led to the construction of the conceptual safety net which ultimately contributed to the period of acute stress.

Conclusions: Whilst not generalisable, this study's findings provide educators with a valuable insight into trainee identity whereby *Habitus* enables in understanding the influence of professional identity on practice. There are opportunities to modify the M.Pharm and its relationship with pre-registration training to develop pharmacist identity and practice from an early stage.

References

Bourdieu, P. (1977). Outline of a Theory of Practice. Cambridge: Cambridge University Press

Pharmacy Leadership and Management: Student perspectives of team-working in a simulated pharmacy business module

V.Solanki, M.J. Boyd, K. Sonnex, S. Brydges, C. Anderson

School of Pharmacy, University of Nottingham, UK

Background: The Pharmacy Leadership and Management (PLM) module provides an experiential learning simulation drawing on leadership and management skills coupled with clinical problem solving. Designed to reflect a wide range of the skills detailed in the Initial Education and Training of Pharmacists from the General Pharmaceutical Council (GPhC, 2011), teams of six students run their own primary care based pharmacy business competing against each other over a total of 12 days. Simulated patients and academics deliver approximately 180 acute scenarios over the module to each team, comprising face-to-face, telephone and email queries.

Method: An online multi-topic questionnaire (81 items, open and closed questions) was sent to all students registered for the module (n=221) as part of the normal module evaluation process. Consent was sought to use the feedback for research.

Two reminders were sent. Analysis consisted of frequency counts and percentages.

Results: Consented responses were received from 143 students (65% response rate). Eighty-six percent (113/132) of students reported that their team got on well together with 84% (110/131) reporting that they became a better team as the module progressed. Four fifths of students (106/131) suggested that they had coached a team-member to improve. However only 65% (86/132) felt they coached effectively, with 60% (79/132) wanting more guidance on coaching. Eleven students did not complete this section and one completed some questions on this topic. Thematic analysis of students comments revealed that they wanted further instruction on feedback and coaching skills including demonstrations, with some suggesting that this should also be introduced earlier in the M.Pharm.

Conclusion: The PLM simulation provides an opportunity for students to develop their teamwork and peer-development skills. Many students reported that they had coached a colleague effectively, but there is still a clear need for additional capability training.

References

GPhC. (2011). Pharmacy Regulation. Future pharmacists Standards for the initial education and training of pharmacists (online). Available at: https://www.pharmacyregulation.org/sites/default/files/GPhC_Future_Pharmacists.pdf. Accessed 28th February, 2017.

Introducing a Transition Tutorial: The Views of Academic Advisors

V. Tavares

Division of Pharmacy and Optometry, University of Manchester, UK

Background: It has been recognised that pharmacy students may be insufficiently prepared for the demands of higher education (Hanna *et al*., 2014) and it is recommended that students should be supported throughout this transition (Harvey *et al*., 2006). Academic advisor tutorials provide an opportunity to deliver this support.

Aims: To seek academic advisors' views of delivering a transition tutorial

Method: An existing student transition questionnaire was adapted for use in a pharmacy school. One hundred and seventy-five 1st year pharmacy students were invited to complete the questionnaire prior to an academic advisor tutorial in week seven of semester one. Academic advisors (n=30) were instructed to use the completed questionnaire with the students during a one-to-one tutorial. Academic advisors were invited to provide feedback of their experiences via an online survey.

Results: Fourteen out of thirty academic advisors completed the survey. Twelve respondents carried out one-to-one tutorials. One respondent carried out a group tutorial and one was unavailable. Twelve respondents stated that all or most of the students had completed the questionnaire. One respondent reported none.

Academic concerns reported	Personal and social concerns reported	Resources to which students were signposted
Time management n=7	Feeling anxious or nervous n=7	First year handbook n=5
Using blackboard and online resources n=4	Feeling lonely or homesick n= 6	University sport n=4
Progress n=3	Feeling sad or depressed n= 5	Library/learning resources n= 4
Attendance n=2	Having difficulty making friends n=4	Crucial guide n=3
		University counselling n=3
		Disability advice and support services n=2

Twelve respondents agreed that the questionnaire helped them structure the tutorial, one disagreed. Twelve respondents agreed that using the questionnaire facilitated discussion of concerns that otherwise would not have been raised, two rated this as neutral.

Conclusion: The academic advisors who participated in the survey generally reported a positive experience. Although a limited response rate, it could be suggested that using a transition questionnaire in a one-to-one tutorial may help academic advisors to identify students who are struggling with the demands of a 1st year M.Pharm programme, and better enable them to provide support during their transition to higher education. Further work could be carried out to explore the students' experiences of using the transition questionnaire.

References

Hanna, L., Hall, M., Smyth, P. & Daly, S. (2014). "I miss being spoon-fed". A comparison of transition from school to university education from the perspective of undergraduate pharmacy students. *Pharmacy Education*, **14**(1), 37-43.

Harvey, L., Drew, S. & Smith, M. (2006). The first year experience: a review of literature for the Higher Education Academy. Available at: http://www.improvingthestudent experience.com/library/UG_documents/first_year_experience_ full_report_Harvey_et_al.pdf.

A Study of the use of team-based learning to deliver a Consultation Skills module

S. Tweddell

University of Bradford, UK

Background: In 2012 Bradford School of Pharmacy introduced team-based learning (TBL) to deliver a final year Consultation Skills module to M.Pharm students to motivate them to prepare for classes and engage them in higher level critical thinking during class. TBL is a form of collaborative learning that uses a special sequence of individual work, group work and immediate feedback to create a motivational framework in which students increasingly hold each other accountable for coming to class prepared and contributing to discussion. It is grounded in constructivist educational theory with students engaging with one another to solve authentic problems (Hrynchak & Batty, 2012)

Method: Whilst teaching the module, student feedback was collected from 75 students (85%) relating to their accountability, preference for, and satisfaction with TBL using the Team-Based Learning Student Assessment Instrument (TBL-SAI) (Mennenga, 2012). The end of module assessment results for two cohorts of students studying TBL was compared with those from two cohorts of pre-TBL students. Finally a student-led focus group of 12 students recruited from the cohort was conducted to determine student's opinions on TBL. The results were transcribed and analysed using thematic analysis to identify common themes.

Results: Results from the TBL-SAI instrument showed student preference for and satisfaction with TBL as a method for the delivery of teaching. Additionally, the results also showed that students developed accountability to their team; a key pedagogical principle of TBL. A comparison of their assessment marks showed an increase of 13% in the cohorts learning using TBL (n=192) compared with those being taught pre-TBL (n=173). Results from the focus groups were positive with students enjoying the active learning, interactions,

and challenging activities. Suggestions to improve included managing timings and better facilitation.

Conclusion: TBL was well received by Stage 4 M.Pharm students and it looks a promising pedagogy for delivering M.Pharm modules.

References

Mennenga, H.A. (2012). Development and psychometric testing of the team-based learning student assessment instrument. *Nurse Educator*, **37**(4), 168-172.

Hrynchak, P. & Batty, H. (2012). The educational theory basis of team-based learning. *Medical Teacher*, **34**(10), 796-801.

An evaluation of a novel collaborative wellbeing programme for M.Pharm students

N. Ward[1], M. Evans[2]

[1]*Leicester School of Pharmacy & [2]Student and Academic Services, De Montford University (DMU), UK*

Background: A bespoke wellbeing programme for M.Pharm students at De Montford University (DMU) was developed in 2015/16 in collaboration with the student counselling and wellbeing team in response to high observed levels of stress and anxiety (Evans & Ward, *in press*). This consisted of an introductory lecture, one timetabled workshop and online self-help resources available to all M.Pharm students. As the links between perceived wellbeing and academic performance are known (Trucchia *et al.*, 2013), we were keen to equip our students with strategies to identify and manage their sources of stress to improve their personal wellbeing and maximise their performance and resilience. The evaluation aimed to determine the overall student perspective of these workshops, and whether they should be continued beyond the initial pilot.

Method: Workshop participants were asked to anonymously complete evaluation forms which asked whether they would recommend the workshops to their friends, plus open questions regarding most and least useful parts of the workshops and key learning to take away. Responses were analysed utilising a qualitative thematic analysis approach.

Results: Two hundred and thirteen students attended the workshops, with 98% stating they would recommend the workshops to their friends. All attendees submitted completed evaluation forms. The attendance by year group is shown in Figure 1.

Students commented that the sessions were interactive and engaging and valued the opportunity to share experiences with their peers, "*knowing everyone feels the same way*". They valued that the sessions were applied to their course and situations they would experience as M.Pharm students, with one student stating that they learnt "*…to try to re-think situations I see as stressful- I often jump to conclusions about interviews and OSCEs..*".

One student highlighted that it is "*…important to take care of yourself as a future healthcare professional in order to deliver the best possible service to patients…*".

Conclusion: As a result of the positive feedback, the wellbeing programme has continued. The redesigned workshops focus on identified areas of concern for students: OSCEs, professionalism and work-life balance. Evaluation and further development of this programme is ongoing.

Figure 1: Percentage of each year group that attended the M.Pharm wellbeing workshops
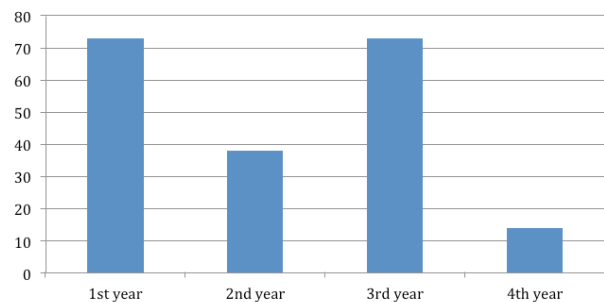
References

Evans, M. & Ward, N. (*in press*). Building resilience and improving wellbeing in pharmacy students: a collaborative approach. *University and College Counselling Journal.*

Trucchia, S.M., Lucchese, M.S., Enders, J.E. & Fernandez, A.R. (2013). Relationship between academic performance, psychological wellbeing and coping strategies in medical students. *Revista Facultad de Ciencias Medicas: UNC*, **70**, 144-52

Qualitative evaluation of student perception of a new 'speed-dating' format for the teaching of a clinical topic (skin conditions)

J. Waterfield (JWaterfield@dmu.ac.uk)

De Montfort University (DMU), UK

Background: An innovative delivery of a clinical topic using a flipped classroom approach involved all final year students in active patient-centred role-play, peer assessment and feedback.

Aims: To explore the potential pedagogic advantages of using students as partners (HEA, 2014) compared to a traditional tutor-led teaching model. The research aimed to investigate student perception of this new method of learning and personal reflection on student understanding of this clinical topic.

Method: The three stages of delivery included: 1) directed student-centred preparation of ten common skin conditions; 2) a diagnostic formative assessment; and 3) an interactive 'speed-dating' seminar where students worked through a time-limited, paired set of 20 clinical

skin scenarios. All 110 students in the final year of the M.Pharm course were invited to take part in a voluntary semi-structured, 30 minute research interview. A total of 11 students responded to the invitation, representing 10% of the cohort. The interviews were audio-recorded, transcribed and evaluated against the research questions using a qualitative framework analysis method. The study was approved by the Faculty Research Ethics Committee, De Montfort University.

Results: Students described the role-play interaction with colleagues as resulting in:

"A fresher way of thinking"…"Application really does help, it ingrains it more"

"With the skin scenarios I felt it stuck more" …"Picking up on the pitfalls of others is a beautiful way of learning"

The main criticism of this activity was the uncertainty surrounding the preparation for the activity.

"We don't know where the boundaries are.....we don't know how much to know"

Conclusion: Students perceived that student-led assessment and discussion of applied clinical scenarios with other students in a 'speed dating' format enhanced personal knowledge. Development of preparatory, independent learning is the major challenge associated with this method and future work will focus on enhanced tutor input to facilitate this process.

References

Flint, A. & Harrington, K. (2014). Framework for partnership in learning and teaching in higher education. York: Higher Education Academy (online). Available at: https://www.he academy.ac.uk/sites/default/files/resources/hea_framework_for_partnership_in_learning_and_teaching.pdf. Accessed 27th February, 2017.

Method: The Pharmacy Special Studies module offered a very broad range of opportunities across laboratory research, systematic and scoping review, product development, and care-orientated topics including audit, and analysis of clinical cases, organised in nine separate "strands". Students from the sandwich (n=99) and continuous (n=89) courses were offered the same selection of learning experiences.

Assessment was by oral presentation and discussion (slides or poster) and written report. The Level 7 marking schemes used were designed so that the highest marks were only available to reward student demonstration of the higher-level critical, analytical and interpretative skills.

Results: Student performance across all nine strands of the module was comparable. When module results were split according to cohort, a strong divergence was observed. Sandwich student results displayed an approximately bell-shaped distribution with a mean mark 73.2% (SD 8.1). In contrast, the continuous student results had a lower mean 67.3% (SD 8.5, $p<10-5$); moreover, the distribution of these marks was distorted with a 'cliff edge' in the low 70s and a long tail.

Conclusion: This analysis shows that students who had completed six months pre-registration training achieved, on average, higher grades. Moreover, they demonstrated improved higher-level skills of interpretation and critical analysis compared with the continuous group. Although this is a one-year "snapshot" observation it appears to show that following six months pre-registration training, students are better able to critically evaluate and interpret data and draw evidence-based conclusions. Such a result could provide evidence for the benefits of intercalated placements and indicate the optimal location of professional training within the academic course. Any impact on pre-registration training itself remains to be determined.

Does an intercalated clinical placement make a difference to learning gain?

R.T. Wheelhouse

School of Pharmacy, University of Bradford, UK

Background: Anecdotally, it has long been felt by academic staff that students on the Bradford five-year sandwich degree programme (intercalated pre-registration training) performed differently on return to university from those on the continuous four-year programme. Direct comparisons between cohorts have been difficult to undertake as the two groups were taught separately in their final stage. In 2016-17, a cohort of returning sandwich students was taught alongside a comparable group of continuous students in a final stage module. This study compares the results from these two student cohorts.

Teaching for learning – educators' views on producing student learning

S. Willis, A. Mawdsley

University of Manchester, Division of Pharmacy and Optometry, UK

Background: Pharmacy students' views of teaching for learning include the need for content to be relevant to the pharmacy context, and for their instructors to be engaging (Spark *et al.*, 2017). The study described here aimed to explore educators' views of how they 'produce' learning (Barr & Tagg, 1995) at one undergraduate pharmacy education provider.

Method: Following ethical approval, educators at one institution were invited to take part in a semi-structured interview (n=35). Participants were sampled for maximum variation in disciplinary background, teaching

experience and whether a qualified pharmacist. Interviews were audio recorded, transcribed verbatim and coded independently by the authors. Using constant comparison, a thematic approach was adopted to analysis.

Results: Thirteen educators consented to take part (five=female; eight=pharmacists). Educators' narratives of teaching for learning drew on replicating what they perceived had been effective in producing learning for them as a student. Participants identified story-telling (involving anecdotes based on their own experiences) as effective in providing pharmacy context to content. Educators' described needing to establish credibility as teachers through referencing their career successes, research output, grade, or practice background. These were important for engaging students in and promoted learning; "good" teaching was also viewed as underpinned by effective presentation skills. While participants reported the need for a learner-centred approach for learning to happen, descriptions of their teaching adopted teacher-centred language - they talked of "imparting" knowledge or "delivering" learning in lectures.

Conclusion: Educators' approaches to teaching for learning were constrained by the programme's structure of lecture-based teaching, and were influenced by their own learning experiences, which appeared to have shaped conceptions of how to make learning happen. Although participants identified the need to offer students opportunities to apply and navigate knowledge to produce learning, there was a dissonance between pedagogic intentions and how they described what they do when they teach.

References

Barr, R.B. & Tagg, J. (1995). From teaching to learning—A new paradigm for undergraduate education. *Change: The Magazine of Higher Learning*, **27**(6), 12-26.

Spark, M.J., Tawil, R., O'Brien, B., Sutherland-Plozza, Z., Charles, S., & John, D.N. (2017). What are the attributes of good pharmacy faculty (lecturers)? An international comparison of the views of pharmacy undergraduate students from universities in Australia and Wales, UK. *Pharmacy Education*, **17**(1), 36-42.

Method: M.Pharm students completed the Jefferson Scale of Physician Empathy (JSPE) (Thomas Jefferson University, 2017) before, immediately after, and two-four weeks after an intervention (interval chosen to fit in with timescale of student project): 4th years, YouTube video of a patient with dementia, and 3rd years, a workshop talking to patients about living with chronic conditions. The JSPE has a maximum score of 140.

Results: The mean score for 4th year M.Pharm (n=30) before the video intervention was 95.4, immediately after slightly higher at 105.9, and after two weeks, 103. Seventy-three percent of the group were female; females had a higher score than males before (97.9 cf 88.5) and after (108.4 cf 99.3). For the 3rd year MP.harm (n=127) attending the patient workshop, the mean score before was 99.4, immediately after it increased to 106.5, and after four weeks, 103.8. Again there were more females in the group (69%), and their mean scores were also higher before the workshop (100.1 cf 98.1), but the males had a higher mean score immediately after the intervention (106.2 cf 107).

Conclusion: In this small study, both interventions improved the empathy score. Females were initially more empathetic, but there was some variation post-intervention. Further work is needed to confirm these findings and to demonstrate that such teaching interventions improve empathy long-term.

References

DoH [Department of Health]. (2015). The NHS Constitution for England (online). Available at: https:www.gov.uk/government/publications/the-nhs-constitution-for-england. Accessed 26th February, 2017.

Thomas Jefferson University. (2017). Frequently Asked Questions about the Jefferson Scale of Empathy (JSE) (online). Available at: http://www.jefferson.edu/university/skmc/research/research-medical-education/jefferson-scale-of-empathy/faqs.html. Accessed 27th February, 2017.

Can M.Pharm students be taught empathy?

K.M.G. Wood & F. Sultana

School of Pharmacy, Aston University, UK

Background: Empathy is an important part of the relationship between healthcare professionals and patients for the delivery of efficient and compassionate healthcare (DoH, 2015). Affective empathy is an innate ability, while cognitive empathy can be taught. This study explored if two interventions could improve empathy of M.Pharm students.