Medical Education Research Symposium 2018 -
June 6, Hunter Centre, University of Otago, Dunedin.

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<td>10:35am-10:50am</td>
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LUNCH - 12:00pm-12:50pm

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<td>Can mindful practice reduce diagnostic errors? <em>Darren Ritchie</em></td>
<td>&quot;How should we support medical students with the transition from classroom to workplace learning?&quot; <em>Megan Anakin</em></td>
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<td>&quot;Health informatics in medical curricular - absent, room for improvement&quot; <em>Rebecca Grainger</em></td>
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<td>&quot;Considering evidence for ethnicity bias using assessment case scenarios and medical student correctness and certainty&quot; <em>Mike Tweed</em></td>
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<td>&quot;Identifying stressor criteria that hinder or challenge junior clinical medical student learning&quot; <em>Joy Rudland</em></td>
<td>&quot;Real Life Relationships: A professional development pilot programme&quot; <em>Sue Walthert</em></td>
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<td>&quot;Dissemination of results from medical student public health research training and factors associated with publication&quot; <em>Ibrahim S. Al-Busaidi</em></td>
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<td>&quot;Utility task value and student motivation to learn biomedical sciences in an undergraduate medical curriculum&quot; <em>Diane Kenwright</em></td>
<td>Triangulation data - what does this really mean? <em>Sarah Rennie</em></td>
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Closing session

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<td>3:30pm-3:45pm</td>
<td>Presentation and closing by Dr. Kelby Smith-Han</td>
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<td>3:45pm</td>
<td>Afternoon tea to finish - Networking opportunity</td>
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Identifying developmental features in students’ clinical reasoning to inform teaching

Ralph Pinnock¹, Megan Anakin¹, Julie Lawrence², Helen Chignell³, Tim Wilkinson⁴

¹Medical Education Unit, Dunedin School of Medicine ²Department of Women’s and Children’s Health, Dunedin School of Medicine, ³Formerly of the Centre for Early Learning in Medicine, Dunedin ⁴University of Otago, Christchurch.

Introduction/background:
There is increasing evidence that students at different levels of training may benefit from different methods of learning clinical reasoning. Two of the common methods of teaching are the ‘whole – case’ format and the ‘serial cue’ approach. There is little empirical evidence to guide teachers as to which method to use and when to introduce them.

Aim/objectives:
To establish at what stage of training the two common methods of teaching clinical reasoning should be introduced and used.

Methods:
We observed 23 students from different stages of training to examine how they were taking a history and how they were thinking whilst doing this. Each student interviewed a simulated patient who presented with a straightforward and a complex presentation. We inferred how students were reasoning from how they took a history and how they described their thinking while doing this.

Findings:
Early in their training, students can only take a generic history. Only later in training are they able to take a focussed history, remember the information they have gathered, use it to seek further specific information, compare and contrast possibilities and analyse their data as they are collecting it.

Discussion/Conclusions:
Early in their training, students are unable to analyse data during history taking. When they have started developing illness scripts, they are able to benefit from the ‘serial cue’ approach of teaching clinical reasoning.
Interprofessional learning: clinical reasoning of physiotherapy and medical students

Megan Anakin¹ & Ewan Kennedy²

¹Medical Education Unit, Dunedin School of Medicine ²School of Physiotherapy, University of Otago.

Introduction/background:
The importance of clinical reasoning has been well established in the clinical practice of range of health professions. However, it is not clear how different health professions view and learn clinical reasoning. Exploring clinical reasoning from an interprofessional perspective has the potential to challenge and enhance our understanding of clinical reasoning and how it is learnt.

Aim/objectives:
The aim was to compare measures of clinical reasoning of fourth-year undergraduate physiotherapy and medical students, and students’ responses to an interprofessional clinical reasoning workshop.

Methods:
Twenty-eight physiotherapy students and 71 medical students completed the Diagnostic Thinking Inventory (DTI) survey prior to attending a workshop about clinical reasoning. Small groups of students worked collaboratively using their clinical reasoning skills to analyse and present cases to their clinical teachers. Afterwards, all students provided written reflections about their learning experience. Students’ reflections were analysed thematically and compared.

Findings:
On average, fourth-year students demonstrated about the same the clinical reasoning ability whether they studied physiotherapy or medicine. When asked to apply their skills in an interprofessional learning session, however, physiotherapy and medical students expressed differences in the features they found useful, and in their view of clinical reasoning.

Discussion/Conclusions:
Exploring the differences in how physiotherapy and medical students approach clinical reasoning may offer some insight into how different professions think. Findings from this study will be of interest to educators interested in developing interprofessional learning opportunities that address clinical reasoning and meet the learning needs and expectations of more than one group of students.
Do students think the biomedical curriculum supports their clinical diagnosis and reasoning?

Wei Dai¹, Emily Wood¹, Rebecca Grainger², Emma Osborne³, Diane Kenwright¹

¹Department of Pathology and Molecular Medicine, Wellington ²Medical Education Unit, Wellington ³Higher Education Development Centre, Wellington.

Staff or student research: Student

If this is student research, please indicate what type: Summer studentship

Introduction/background:
The biomedical components of the curricula, which were historically taught as a standalone comprehensive science courses, are now integrated, clinically-oriented components of the medical curriculum. The clinical relevance of biomedical science is in supporting the development of diagnostic skills, clinical reasoning and critical analysis of medical interventions (“evidence-based medicine”).

Aim/objectives:
We aimed to explore whether the current integrated (post 2008) biomedical curriculum is perceived by students to support the development of clinical reasoning and/or critical analysis skills.

Methods:
The perspectives of 2nd-6th year medical students on the biomedical curriculum was explored via a paper-based survey. Focus groups were conducted to further explore reasons underlying student responses.

Findings:
Medical student’s reported acceptance of the biomedical programme, and this did not differ between the year groups. Students agreed that the biomedical curriculum improved their clinical reasoning and critical analysis skills. Students reported having a difficulties learning and retaining content that was not applied to clinical context or explained as relevant.

Discussion/Conclusions:
Medical students are willing to learn the large biomedical curriculum but have trouble managing the detailed content or focusing highest priority content. They find integrated teaching is beneficial and relevant to their emerging clinical reasoning and diagnostic skills. This suggests that the linkages between biomedical teaching and clinical application are not yet established, or that the information in the current biomedical curriculum may be too detailed to be clinical useful.
Students approaches to learning clinical reasoning: Evidence as a threshold skill

Ralph Pinnock¹, Madelyne Jouart², Julie Timmermans³, Megan Anakin¹

¹Medical Education Unit, Dunedin School of Medicine, University of Otago ²Dunedin School of Medicine, University of Otago, Dunedin ³Higher Education Development Centre, University of Otago, Dunedin.

The data from this study was obtained by a summer student in 2017

Introduction/background:
Threshold concepts and skills are new and previously inaccessible ways of thinking about and performing in a discipline. They represent transformed ways of thinking and doing without which learners cannot progress. Clinical reasoning may be a threshold skill. It requires learning a combination of concepts and skills. As yet, threshold skills have not been studied in medical education. Our aim was to establish whether clinical reasoning exhibited features of a threshold skill.

Aim/objectives:
Our aim was to establish whether clinical reasoning exhibited features of a threshold skill.

Methods:
Twenty-four final-year medical students were interviewed with a five-question protocol about how they were learning clinical reasoning. Students’ responses were analysed thematically then compared with the features of threshold skills.

Findings:
Students’ descriptions of learning clinical reasoning exhibited the features of threshold skills: clinical reasoning was transformative, troublesome, and required prolonged practice. Also present, but less pronounced, were its irreversible and integrative features.

Discussion/Conclusions:
Viewing clinical reasoning as a threshold skill is a novel interpretation of its nature and has implications for learning and teaching. Clinical reasoning should be learned intentionally and taught explicitly. With increased awareness of clinical reasoning as a threshold skill, students can advocate for further learning opportunities to solve problems in clinical settings. Teachers can help students to understand that clinical reasoning may be difficult to learn and will require time and repeated practice to develop.

Conclusions:
Our study of students’ learning of clinical reasoning reveals that it can be interpreted as a threshold skill. It is transformative, troublesome, integrative, irreversible, and requires prolonged practice. In this light, medical educators may be motivated to revise their approaches to teaching clinical reasoning.
The Benefits of using Twitter in medical education research and teaching

Sarah Gallagher¹

¹Office of the Dean, Dunedin School of Medicine, University of Otago.

Introduction

Twitter is a social media tool that has wide applicability for academics, researchers and educators.

Aim

The aim of this talk is to highlight the benefits for medical educators and researchers in engaging in the Twittersphere for a variety of reasons and situations including: keeping up to date with research, creating a personal learning network, disseminating research and practice, and engaging with the wider medical education community. Techniques, tools and syntax will be demonstrated in order to illustrate the utility of Twitter for medical educators. Discussion will centre around specific questions from the audience about the use of Twitter in their context.
Global Health Classroom: Experiences and learning outcomes of virtual collaborative learning between New Zealand and Samoan medical students

Roshit K Bothara¹, Tim Wilkinson², David R Murdoch¹, Susan Jack³, Faafetai (Tai) Sopoaga³, Jen Desrosiers⁴, Malama Tafuna'i⁵, Tony Walls⁶, Philip K Pattemore⁶, Ashis Shrestha⁷, Andrew Miller¹.

¹Department of Pathology, University of Otago, Christchurch ²Department of Medicine, University of Otago, Christchurch ³Department of Preventive and Social Medicine, University of Otago, Dunedin ⁴Department of Population Health, University of Otago, Christchurch, ⁵School of Medicine, National University of Samoa, Samoa, ⁶Department of Paediatrics, University of Otago, Christchurch ⁷Department of Primary Care, Patan Academy of Health Sciences, Patan, Nepal.

Staff or student research? Student, BMedSci(Hons)

Background
Global Health Classroom (GHCR) is a virtual collaborative global health learning model being developed at the Otago Medical School (OMS) in partnership with Patan Academy of Health Sciences, Nepal (PAHS) and School of Medicine, National University of Samoa, Samoa (Samoa).

Aims
To explore the learning and experiences of New Zealand and Samoan medical students in the GHCR, and ascertain the key elements contributing to their learning and experience.

Methods
A mixed-method study approach using a post-GHCR questionnaire and semi-structured interviews. A triangulation approach informed the synthesis of the data.

Results:
Of the participants, 85% (74/87) responded to the post-GHCR questionnaire. Nineteen interviews were conducted: 13 OMS students and six NUS students. Students reported gaining knowledge about patient care, healthcare systems, and the culture and determinants of health, in their partner country. There was evidence that attitudes such as cultural understanding and respect were promoted among students by their GHCR experiences. Reported outcomes in the GHCR align favourably with the recommended global health learning concepts.

Discussion
Key elements in the GHCR were: clinical cases and global health themed guiding questions, teachers as facilitators and students as self-directed learners, peer learning and social interaction, and video-conferencing. Students in the GHCR found that learning with their international peers in a virtual classroom made learning about global health “more real and tangible” and “much more accessible than learning [global health] on a purely theoretical basis.”

Conclusions:
The findings in this study suggest that GHCR presents a promising global health learning model with core values of partnership, collaboration and reciprocity between medical students and institutions. Medical schools in different countries can partner together to deliver global health learning for their students by integrating the GHCR into their curriculum.
Samoan, New Zealand and Nepalese medical student perspectives and ideas regarding global health within medical curricula

Hannah Sim1, Andrew Miller1, Roshit Bothara1, Tim Wilkinson2, David R Murdoch1, Susan Jack3, Faafetai (Tai) Sopoaga3, Jen Desrosiers4, Malama Tafuna'i5, Tony Walls6, Philip K Pattemore6, Ashis Shrestha7

1Department of Pathology, University of Otago, Christchurch, New Zealand, 2Department of Medicine, University of Otago, Christchurch, New Zealand, 3Department of Preventive and Social Medicine, University of Otago, Dunedin, New Zealand, 4Department of Population Health, University of Otago, Christchurch, New Zealand, 5School of Medicine, National University of Samoa, Samoa, 6Department of Paediatrics, University of Otago, Christchurch, New Zealand, 7Department of Primary Care, Patan Academy of Health Sciences, Patan, Nepal

Staff or student research? Student

If this is student research, please indicate what type: Summer Studentship

Introduction/background:
Global health is increasingly recognised as a core component of the medical curricula. Consequently, implementation of global health into medical school curricula is increasingly valued. Despite global health education being encouraged, there are few studies that have explored why, how and what medical students would like to learn about global health.

Aim/objectives:
To explore the perspectives of medical students in New Zealand, Samoa and Nepal, regarding their interest and perspectives in global health in the medical curricula.

Methods:
A mixed-method study was conducted. Quantitative data were collected via questionnaires and qualitative data were collected from the questionnaires and semi-structured interviews. Medical students from New Zealand, Nepal and Samoa were invited to participate. The data were thematically analysed using a triangulation approach.

Findings:
Overall, 120/161 (75%) of students across the three countries completed the questionnaire. 73% of students were either ‘interested’ or ‘very interested’ in learning about global health in their medical curriculum. Key motivations for learning about global health arose from their value for global citizenship and their role in addressing national and global healthcare challenges.

Discussion/Conclusions:
There is a strong interest among medical students to learn global health within the medical curriculum. Students value global health due to their role as global citizens and desire to address health inequities by becoming competent doctors, change agents and advocates. Medical schools need to incorporate more global health education to train doctors with the relevant knowledge, attitudes and skills to practice with diverse patients, as well as address health inequities and advocate for their patients.
A Sectional Anatomy Learning Tool (SALT) for medical students: Development and user-usage analytics

Vivek Perumal

1Department of Anatomy, School of Biomedical Sciences, University of Otago, Dunedin.

Introduction/background:

Knowledge of cross-sectional anatomy is the key requisite for medical students to learn interpret radiological images. As CT or MRI images do not reflect the real colours of the human body tissues, using ultrathin e12 plastinated slices of the human body is a better resource to learn sectional anatomy.

Aim/objectives:

The aim of this project is to develop an inexpensive self-learning, self-evaluation online resource for the third-year medical students to learn cross-sectional anatomy using e12 slices.

Methods:

An interactive series of images from the e12 slices was developed using the free software CourseLab 2.4. This resource, the Sectional Anatomy Learning Tool (SALT), had interactive labels that pointed out the appropriate anatomical structure on the e12 slices, with a brief anatomical note. The SALT was available to the students via the medical school’s Moodle page, from where user and usage analytics were collected online and analysed at the end of the teaching period. Student participation with SALT and their academic performance in the practical exams (OSPE) were compared.

Findings:

62.4% of the class (n=282) used the SALT resource almost 24x7, during working days and weekends, continuously till the examination period. Statistical analysis showed that the students who used the SALT gained significantly better scores in their OSPE in questions related to cross-sectional anatomy (p<0.001).

Discussion/Conclusions:

The SALT supplemented the use of the anatomy department’s physical e12 resources; improved student participation and engagement. Such inexpensive, interactive e-resources, when tailor made for specific course requirements, could improve students’ learning outcome.
Abstracts
Session 1, Stream C - 11:00am-12:00pm - Room 121

PeArL Presentation

Measuring students' academic motivation: What are the best method/s?

Tehmina Gladman¹, Steve Gallagher², and Anthony Ali³

¹Education Unit, University of Otago, Wellington ²Education Unit, Dunedin School of Medicine ³Education Unit, University of Otago, Christchurch.

Introduction/background:
Academic motivation is an important aspect of student learning. Academic motivation can be defined as “a process that is inferred from actions ... and verbalizations ..., whereby goal-directed physical or mental activity is instigated and sustained” (Jones, 2009, p. 272). It is this motivation which spurs students to engage with teaching and learning and optimise their study strategies to excel in their programme. Jones (2009) has developed the MUSIC model of academic achievement that considers student perception of empowerment, usefulness, success, interest and caring and has been validated as a measure of student academic motivation in a number of contexts.

Purpose/objectives:
We are currently collecting survey data to validate the MUSIC scale in medical students and to gain some understanding of medical student motivation. While a survey is a useful first step to gauge current perceptions of academic motivation, we are interested in exploring methods that can measure and predict how teaching and learning environments will affect academic motivation.

Issues/questions for exploration or ideas for discussion:
1. Can changes in the learning environment affect academic motivation?
2. What methods, other than surveys and focus groups, could we use to qualify/quantify the effect of a change in learning environment on academic motivation?
3. How can we use measures of academic motivation to help inform decision-making on the teaching and learning environment?
Identification and review of the support available to parents studying at the Otago Medical School: a mixed-methods analysis

Linda Gulliver¹, Malisa Mulholland¹

¹Centre for Early Learning in Medicine, Dunedin.

Staff or Student Research? Student

If this is student research, please indicate what type: Summer Studentship

Introduction/background
There is limited public information and no research on support for New Zealand medical student-parents, despite the challenges of balancing medicine and parenting, and demographic changes that may mean there are more student-parents.

Aim:
To research the support available to parents studying medicine, using the Otago Medical School (OMS) as a case study.

Methods:
OMS documentation on support was reviewed, and staff and student-parents were surveyed about support. The Medical Schools Outcome Database and Longitudinal Tracking Project data was also reviewed for evidence relating to the effectiveness of support.

Findings:
Student-parents consistently formed a sub-group of students studying at the OMS. Their responses regarding support varied widely, from positive to negative for mothers and fathers alike. By contrast, staff generally viewed support positively.

Conclusion:
Some students have benefitted from support, but there is room for significant improvement; particularly by increasing visibility of parent-specific support and implementing formal documentation.
PeArL presentation

Can mindful practice reduce diagnostic errors?

Darren Ritchie\textsuperscript{1}, Ralph Pinnock\textsuperscript{2}, Steve Gallagher\textsuperscript{3}, Craig Webster\textsuperscript{4}, Marcus Henning\textsuperscript{4}

\textsuperscript{1}Dunedin School of Medicine, \textsuperscript{2}Medical Education Unit, Dunedin School of Medicine \textsuperscript{3} Education Unit, Dunedin School of Medicine \textsuperscript{4}Centre for Medical and Health Science Education, University of Auckland, Auckland.

Staff or student presentation? \textbf{Student}

Introduction/background:
Clinical reasoning is the cognitive process clinicians use to arrive at a diagnosis based on the patient’s history, physical examination and sometimes investigations. (Eva 2005, Norman 2005). The first paper to use the term mindful practice defines a mindful practitioner as one who is aware of their thinking and as a result responds to everyday tasks with clarity and insight. (Epstein 1999). This paper claims that support for mindful practice is claimed to be found in empiric observation of clinical practice (Christensen 1992, Christakis & Feudtner 1993, Suchman 1988, Stetten 1981), educational research (Coles 1996, Hafferty 1994, Wear 1997) philosophy (Baron 1985) and cognitive science (Peters 1995, Wartofsky 1986). However none of these references define mindfulness or how it might be taught.

Mindfulness, is a meditation practice that aims to increase awareness in the moment by leading to a greater sense of well-being. (Ludwig 2017). Groopman suggests cognitive errors can be avoided by paying attention to the process of thinking, a metacognitive practice of self-reflection akin to mindfulness. (Groopman 2007) There is no empirical evidence to support these assertions.

Given that there is still debate as the most effective ways to reduce errors in clinical reasoning it is important to explore the precise nature of ‘mindful practice’ and whether it can reduce diagnostic errors and improve patient safety. We are reviewing the literature to address these two important issues.

Purpose/objectives:
To consult colleagues on our aims and progress so far.

Issues/ questions for exploration or ideas for discussion:
1. Is this a worthwhile project?
2. We are half way through our systematic review and are seeking feedback on our progress so far.
Small changes, big differences: Increasing the perceived value of a student-generated MCQ bank

Emma Osborne\textsuperscript{1}, Rebecca Grainger\textsuperscript{2}, Wei Dai\textsuperscript{2}, Diane Kenwright\textsuperscript{2}

\textsuperscript{1} Higher Education Development Centre, University of Otago, Wellington \textsuperscript{2}Department of Pathology and Molecular Medicine, University of Otago, Wellington.

Introduction/background:
Vignette-based multiple-choice questions (MCQs) can test knowledge application effectively. Additionally, the process of writing MCQs engages students in deep learning. However, students may not see peer-created resources as useful.

Aim/objectives:
To assess the effect of increased scaffolding on students’ perception of a student-generated MCQ activity.

Methods:
Medical students in two consecutive years of a fourth-year pathology course (N=106 in 2016, N=102 in 2017) wrote, answered and evaluated MCQs using PeerWise. The first cohort chose their own topics and were given guidance based on Bloom’s taxonomy. The second cohort was assigned topics and given examples of vignette-based questions. A paper-based survey was administered to investigate students’ learning strategies and perceptions of the activity.

Results:
Sixty-two students from each cohort completed the survey. Both groups used deep learning strategies such as self-evaluation and synthesising multiple sources. Student satisfaction increased from 37% (22/62) to 50% (31/62), and the proportion of students who saw the task as beneficial to their learning increased from 31% (19/62) to 77% (42/62). Students’ free-text comments showed the second cohort found the task more straightforward and had greater confidence in the validity of their peers’ questions.

Discussion:
Removing topic choice may have decreased extraneous cognitive load and increased perceived usefulness of the question-bank for revision. Students preferred model MCQs to theoretical guidance. Confidence in MCQ quality could be further increased with instructor feedback on disputed questions.

Conclusions:
Student-generated MCQ-writing engages students in active and deep learning. Confidence in peer learning can be increased with appropriate scaffolding.
Health informatics in medical curricular – absent, room for improvement

Rebecca Grainger¹, Amy O’Neill¹, Diane Kenwright¹, MaryLeigh Moore², Tim Wilkinson²

¹ Education Unit, Otago Medical School, University of Otago, Wellington, ²University of Otago, Christchurch.

Background
Health Informatics (HI) is ‘the study of design and application of technology-based healthcare service delivery, management and planning, with the aim of improving the quality and efficiency of healthcare services’. Doctors use HI everyday in clinical practice, most do not have training in HI skills. Our goal was to develop an implementable HI Curriculum for Otago Medical School. Our aim was to benchmark HI curricula in comparable medical schools.

Methods
The websites of university medical degrees listed as eligible for registration to practice medicine with relevant country medical registration body in Australia (n=21), Canada (n=16) and the UK (n=32) were identified. The curriculum pages of the web-sites were reviewed, and data extracted regarding: 1. Declared HI courses, learning outcomes, teaching and assessment, and 2. Learning outcomes mapped to the 6 outcomes of a proposed medical HI curriculum.

Results
The web-site search found 78% (55/69) of medical schools have HI learning outcomes, but only 5% had HI as declared curriculum with dedicated learning time. ‘Searching online information sources and databases’ was the most frequently identified learning outcome (Australia 57% (12/21), UK 66% (21/32), Canada 63% (10/16)). An outcome related to ‘Evaluating software and systems’ was identified in 17% (12/69) of medical school curricula. Learning outcomes related to “Managing data and information” were most frequent in the UK medical schools (72% (23/32)), but less frequent in Australia (33% (7/21)) and Canada (38% (6/16)). The remaining three objectives (Knowledge Engineering and Decision Support, Communication and the Internet, and Data security and Confidentiality) were found in 14% - 44% of medical schools.

Conclusions
Declared HI curricula are infrequent in medical schools in Australia, Canada and the UK. While some HI learning outcomes are included, many curricula have an absence of specific HI learning modules. Identification of components of an HI curriculum relevant to the current health environment is a high priority, along with practical means for implementation. Frequent curriculum revision may be required to keep pace with emerging technologies.
Considering evidence for ethnicity bias using assessment case scenarios and medical student correctness and certainty

Mike Tweed¹, Gordon Purdie¹, Cameron Lacey²

¹University of Otago Wellington, ²University of Otago Christchurch

Introduction/background:
In New Zealand, there is inequitable distribution of health risks, exposures, resources and outcomes by ethnicity. This may be contributed to by health professional bias. These biases may also be present for medical students. Variation in student correctness of and certainty in assessment responses may indicated biases.

Aim/objectives:
The aim of this study was to investigate the relationship between ethnicity of patients, within written assessment case scenarios, and medical students’ response correctness and certainty.

Methods:
Otago Medical School students sit a 150 MCQ progress test with item level response certainty. Patient ethnicity for 60 MCQ case scenarios was varied between two ethnic groups (NZ European, Māori) and none specified. Analysis of responses by patient ethnicity was undertaken to compare: odds of correctness; level of certainty; correctness for level of certainty and also by year groups and ability.

Findings:
1103 students sat the test. There was no significant difference in odds of correctness or level of certainty by the ethnicity of the patient case scenario. These did not differ significantly by year groups or ability groups, or for correctness by level of certainty.

Discussion/Conclusions:
There was no detectable variation in responses due to ethnicity. A limitation of this study is that the context of case scenario based clinical-decision-making might not detect biases. Further exploration including incorporating more ethnicity descriptors, analysis of incorrect answers, analyses for patterns responses over time by individual students, and selecting questions where varying patient ethnicity is expected to alter the correct response or difficulty is warranted.
Identifying stressor criteria that hinder or challenge junior clinical medical student learning.

Joy R Rudland¹, Clinton Golding ², Chrys Jae¹, Mike Tweed¹, Tim Wilksinon¹.
¹ Otago Medical School, ²HEDC, University of Otago, Dunedin.

Introduction:
Stressors in clinical education may be seen as a negative hindrance (Canavaugh et al 2000) or beneficial (Hattie 2010) to learning. The impact of stressors and their moderation in curriculum design and delivery is unclear and under-researched.

Aim:
Medical students moving from a traditional, protected classroom environment to a situated–work environment is an ideal junction to explore the criteria that might make something a stressor and whether these hinder or challenge learning.

Methods:
Data on stressors in clinical education were collected from free text student comments in a survey based questionnaire supplemented by focus group data. Using inductive content analysis with grounded theory, themes were generated about the characteristics that challenge or hinder learning. These themes were classified into stressor criteria.

Findings:
Learning that involved legitimate tasks of being a doctor, positive social interactions, were novel and/or had meaningful consequences were positively challenging for the students. Learning was hindered if social interactions were negative in affect, if the tasks appeared irrelevant and/or expectations exceeded the student’s capacity to cope. Lack of clarity, parity and support were seen as hindrance criteria. Difficulty of the learning material was not seen as a strong stressor.

Discussion/Conclusions:
There are learning tasks/opportunities that stress students. Not all of these stressors are a hindrance to learning. Many present challenges that are received positively and result in perceived learning. Stressors hindering learning need to be recognized, especially those that can be converted from a hindrance to challenge, and managed by educational planners and teachers as well as the students.
PeArLs Presentation

How should we support medical students with the transition from classroom to workplace learning?

Megan Anakin

Medical Education Unit, Dean’s Department, Dunedin School of Medicine, University of Otago, Dunedin.

Introduction/background:
As medical students move from classroom to workplace learning environments, the transfer of learning from one context to another has been theorised as being a cyclical process that includes six steps: 1) selecting a relevant competency from the classroom, 2) exploring the clinical workplace, 3) identifying relevant features of the clinical workplace, 4) adapting the prior competency to address the features of the clinical workplace, 5) enacting the adapted competency with other competences in the clinical workplace, and 6) reflecting on how successfully the adapted competency was applied in the clinical workplace. Three group of variables influence the transfer process: 1) the medical curriculum, 2) student characteristics, 3) the clinical workplace.

Purpose/objectives:
The purpose of this session is discuss issues that medical students may face as they move from classroom to workplace learning.
The objectives that will be addressed in this session are for participants to become familiar with the six-step theory of transfer of learning and to identify factors that may influence the transfer of learning process at the Otago Medical School (OMS).

Issues/questions for exploration or ideas for discussion:
What features of the medical curriculum and the clinical workplace help/hinder the transfer of learning process for students at OMS?
What characteristics of our students may help/hinder them to engage with the transfer of learning process?
Real Life Relationships: A Professional Development Pilot Program

Sue Walthert¹, Martyn Williamson², Megan Anakin¹, Steve Gallagher¹, Kelby Smith-Han⁴, Joy Rudland³

¹Education Unit, Dean’s Department, Dunedin School of Medicine, University of Otago, Dunedin.
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Staff research

Introduction:
Professional behaviour is essential for medical practice, however, intimidating behaviour has been reported to occur between medical professionals and within medical school environments. Medical schools, including the Dunedin School of Medicine, tend to concentrate on teaching doctor-patient relationship skills rather than teacher-student, peer-peer relationship skills. To redress this imbalance in the DSM curriculum, the Real Life Relationship (RLR) pilot programme was implemented. The evaluation of this pilot will assist curriculum planning across the 3 clinical schools.

Aim/objectives:
The study aims to understand how the RLR programme equips students to achieve effective and respectful outcomes in a range of commonly challenging situations in medical school contexts.

Discussion:
Preliminary findings from evaluation data (i.e., student surveys, interviews, and written feedback) show that the majority of students (79%) and mentors (100%) appreciated the need for learning opportunities. Feedback from students indicated that some of them found this type of learning difficult and even confrontational. Implementation challenges included not having knowledge about students’ preferred learning approaches to personal topics and finding sufficient time in the schedules of mentors and students. A comparison of two cohorts with a crossover assessment design will be used to investigate features of the communication skills learned during a 2018 ALM4 intervention. The second cohort consists of ALM4 students at UOW and UOC who will not receive the intervention.

This abstract has been accepted for short presentation to AMEE Basel 2018.

Issues: Will this work? How should this be presented at AMEE?
Utility task value and student motivation to learn biomedical sciences in an undergraduate medical curriculum.

Emily Wood\textsuperscript{1}, Wei Dai\textsuperscript{1}, Diane Kenwright\textsuperscript{1}

\textsuperscript{1}Department of Pathology and Molecular Medicine, University of Otago, Wellington.

Introduction/background:
Malama*, a second year medical student, is studying anatomy. She has lectures, reads books, and studies models as well as attending the dissection room. During one of her lectures a clinician demonstrates how specific anatomical knowledge is important when examining the neck. Malama makes connections between anatomy and clinical practice which increases her engagement in the classroom. Malama’s perception of personal value in anatomy, due to its connection with her future goal of becoming a competent doctor, now motivates Malama to study. This type of value, where a student perceives an activity to be relevant to her life, has been called utility task value. In a study of student perceptions of the biomedical components of the University of Otago curriculum, the utility task value was found to be the strongest motivator of student engagement.

Purpose/objectives:
Specifically designing courses to increase utility task value will increase student engagement and has the possibility to increase achievement. In a crowded medical curriculum using a utility task value tool when evaluating the curriculum might help decisions about content revision, particularly distal utility (long-term goals) and internal regulation (professional development). This PeArL will explore whether a tool like this may be of use, what it might look like and whether it would improve the biomedical curriculum.

Issues/questions for exploration or ideas for discussion:
Do you think that utility task value has a place in curriculum design?
What learning objectives lie outside utility value?
What would a useful tool look like?

*Pseudonym
Triangulating data – what does this really mean?

SC Rennie¹, R Grainger¹, JR Rudland²

¹ Education Unit, Otago Medical School, University of Otago, Wellington ²Education Development and Staff Support Unit, Otago Medical School, University of Otago, Wellington

Introduction/background:
A study is being undertaken to determine how non-university staff feel supported in their role as teachers. These teachers include resident and senior medical officers and also other health professionals, i.e. nurses, pharmacists. There have always been difficulties in accessing non-university staff opinion due to a variety of pressures. As a consequence, concerns may exist regarding the validity and reliability of data. A further challenge is the underpinning perspectives and perceptions that different professions bring as well as those of the researchers.

Purpose/objectives:
The purpose of this session is to explore the approach of triangulation where confidence in the data is assumed to be enhanced if different methods to collect data lead to the same result. In this study data is being collected from a survey tool, nominal group techniques and evaluation data, from a range of health professionals and module convenors. However, triangulation can also be considered from an investigator and theory perspective and may be predicated on the assumptions made by the researchers.

Issues/questions for exploration or ideas for discussion:
Little thought has been given to the assumptions we make about the triangulation of data. Using our proposed study as a catalyst exemplar the following areas will be explored:

1. What biases do we bring (what assumptions do we make about the people we are collecting data from – an ontological perspective)
2. What happens when data doesn’t triangulate – how should we interpret lack of triangulation?
3. Who’s truth is it anyway and how should we respond?
Dissemination of results from medical student public health research training and factors associated with publication.

Ibrahim S. Al-Busaidi,1 Gregory P. Tarr2

1 Department of General Medicine, Christchurch Hospital, Canterbury District Health Board, Christchurch.2 Auckland City Hospital, Auckland District Health Board, Auckland, New Zealand.

Note: Study of importance to the Dunedin School of Medicine. Findings of this study have been published in Postgraduate Medical Journal, BMJ group.

Abstract:
Introduction: Publication from medical student research projects may help stimulate interest in academic careers.

Aim: To examine factors associated with publications resulting from mandatory public health research training attachment, the Trainee Intern Health Care Evaluation (TIHE) projects, at the University of Otago, Dunedin School of Medicine, New Zealand.

Methods: A total of 227 TIHE projects (January 1985 to December 2013) were included in the study. In February 2016, Medline and Google Scholar databases were searched independently by both authors for publications using predefined search criteria.

Findings: Overall, 25 (11.1%) out of 227 projects resulted in 19 articles, three conference presentations/abstracts, and four cited report abstracts. Nineteen (8.4%) projects resulted in 22 publications, 86.4% of which were original articles. The number of projects commissioned by a client was independently associated with the likelihood of publication, conference abstract or citation of the project report (OR 1.40; p < 0.01, 95% CI 1.14 to 1.71). The number of authors and number of non-student authors were positively associated with publication in higher impact journals while student first authored articles were more likely to be published in lower impact journals. Projects completed in more recent years were more likely to be published.

Discussion/Conclusions: Mandatory medical student research experiences promote tangible research output. These findings may help to influence policy around the introduction of required medical school research, and facilitate encouraging academic careers amongst medical students. Future research should examine how different student-, supervisor- and programme-related factors influence publication rates from mandatory medical student research attachments.
Publishing medical student research: do clinical supervisors come round with time?

Yassar Alamri¹, Ibrahim Al-Busaidi¹, Cameron Wells², Tim Wilkinson³

¹Department of Medicine, University of Otago and Canterbury District Health Board, Christchurch, New Zealand ²Department of Surgery, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand ³Medical Education Unit, University of Otago, Christchurch, New Zealand.

Background:
Several factors may influence whether medical student research is successfully published in academic peer-reviewed journals. These include research-, student- and supervisor- factors. Conflicting evidence exists in the literature as to whether student-projects supervised by academic clinicians are as likely to be published as projects supervised by full-time non-clinical supervisors.

Aims:
We sought to investigate the discrepancy in publication rates amongst medical student-projects supervised by clinical vs. non-clinical supervisors. Our a priori hypothesis was that clinical supervisors publish at a similar rate to non-clinical supervisors only for longer research projects.

Methods:
We examined the publication rates of medical student-projects supervised by clinical and non-clinical supervisors. Projects were classified as: short (less than 19 weeks) or long (19 weeks or longer). Four New Zealand cohorts were examined: the Trainee Intern Healthcare Evaluation project in Dunedin (6 weeks), Summer Studentship programmes at the University of Otago (10 weeks) and the University of Auckland (10 weeks) and the BMedSci(Hons) degree at the University of Otago (12 months).

Findings:
For short projects, clinical supervisors were less likely to be published (n = 30; 71.4%) than full-time academic supervisors (n = 27; 93.1%), p = 0.01. For longer projects, however, there was no statistically significant difference in the number of publications (t₈⁷ = 1.19, p = 0.1).

Discussion/Conclusions:
Availability of clinical supervisors to support students through the publishing process may need to be balanced with the supervisors’ clinical duties. Longer projects appear to allow for sufficient time for medical student-projects to be published.
Publication in a medical student journal predicts short- and long-term academic success: a matched-cohort study

Ibrahim S. Al-Busaidi,¹ Cameron I. Wells,² Tim J. Wilkinson³

¹Department of General Medicine, Christchurch Hospital, Canterbury District Health Board, Christchurch. ²Faculty of Medical and Health Sciences, School of Medicine, The University of Auckland, Auckland. ³Department of Medicine, Otago Medical School, University of Otago, Christchurch.

Staff or student research? Student

If this is student research, please indicate what type (e.g. Summer studentship, BMedSci, PhD etc.): Independent extracurricular research

Abstract:

Introduction: Medical student journals play a critical role in promoting academic research and publishing amongst medical students, but their impact on students’ future academic achievements has not been examined.

Aim: We aimed to evaluate the short- and long-term effects of publication in the New Zealand Medical Student Journal (NZMSJ) through examining rates of post-graduation publication, completion of higher academic degrees, and pursuing an academic career.

Methods: Student-authored original research publications in the NZMSJ during the period 2004-2011 were retrospectively identified. Gender-, university- and graduation year-matched controls were identified from publicly available databases in a 2:1 ratio. Date of graduation, current clinical scope of practice, completion of higher academic degrees, and attainment of an academic position for both groups were obtained from Google searches, New Zealand graduate databases, online lists of registered doctors in New Zealand and Australia, and author affiliation information from published articles. Pre- and post-graduation PubMed®-indexed publications were identified using standardised search criteria.

Findings: Fifty publications authored by 49 unique students were identified. The median follow-up period after graduation was 7.0 years (range 2-12 years). Compared with controls, student-authors were significantly more likely to publish in PubMed®-indexed journals (OR 3.11, p=0.001), obtain a PhD (OR 9.27, p=0.004) or any higher degree (OR 2.65, p=0.006), and attain academic positions (OR 2.93, p=0.04) following graduation.

Discussion/Conclusions: Publication in a medical student journal is associated with future academic achievement and contributes to develop a clinical academic workforce. Future work should aim to explore motivators and barriers associated with these findings.
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Thank You!

On behalf of the Medical Education Research and Evaluation Sub-Committee, I would like to offer my thanks to Mr Mark Brunton for performing the mihimihi and opening up the symposium for us. Also, a big 'Thank You!' to Roshit Bothara, who kindly agreed to be the keynote speaker, sharing with us his student experience with medical education research.

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