#4M Short Communications - Student in Difficulty

4M1 (3090)

Date of Presentation: Monday, 26 August 2019

Time of Presentation: 1400-1415

Location of Presentation: Room 0.94-95, Level 0

Profile characterization of unsuccessful students

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ABSTRACT

Background: The Integrated Master of Medicine of the University of Algarve (MIM-UAlg) is a 4-year course, open exclusively to persons who have already a Higher Education Degree (1st cycle) and it's a new medical curriculum based on PBL (Problem Based Learning). Students selection process for MIM-UAlg consists: 1st phase - a set of cognitive skills tests (to evaluate the following aptitudes: numerical reasoning, verbal reasoning and abstract reasoning) and a proof of English language knowledge (level B1 of the Common European Framework of Reference for Languages). The 2nd phase consist of a set of 10 mini-multiple interviews (MME) or stations of 8 minutes each.

Summary of Work: The main objective of this study was to understand if students with the greatest academic failure are susceptible of differentiation, taking into account the main intrinsic variables of the individual and the results of the selection process. Methodologically, a 2-step clusters analysis was applied with the Schwarz Bayesian clusters criteria selecting as quantitative variables: Age, MME, General Cognitive Abilities and as categorical variables: Training area, gender and Failed. A non-parametric analysis of KrusKal Wallis was later performed to attest the mean differences in academic results by cluster.

Summary of Results: The cohorts from 2009 to 2018 were analyzed, which represents a total of n = 428 (Female = 257 and Male = 171), whose multivariate analysis of the classification of individuals was able to differentiate 4 clusters of students, with the following distribution: Cluster1 = 49, Cluster2 = 120, Cluster3 = 93 and Cluster4 = 159. The variable failed was the one with the most discriminative power followed by: academic background, gender and age.

Discussion and Conclusions: The results showed that the knowledge-related (Personal Progress Index) and the skills lab (Objective Structured Clinical Examination) were the ones that presented the most statistically significant differences among the clusters of students. It has been verified that it is in the first years that these differences weigh more.

Take-home Messages: We believe that it might be possible to make an early failed student profile based, on a multivariate combinations composed with personal features (age and gender), selection results, academic background and the focus variable - Failed.

#4M Short Communications - Student in Difficulty

4M2 (1757)

Date of Presentation: Monday, 26 August 2019

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The Cross-cultural Experience of Academic Difficulty and Remediation

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ABSTRACT

Background: Quality remediation is integral in reducing the costs of underperforming medical students. Research indicates that certain cultural groups enter remediation programmes more frequently than their counterparts and these students are likely to continue to underperform. We report on the lived experience of three cultural groups' experiences of remediation.

Summary of Work: A qualitative study utilising semi-structured, face-to-face, one-on-one interviews (n = 14) was employed. Interviews explored student perceptions of academic difficulty, including their experience with remediation within the medical programme at the University of Auckland, New Zealand. Participants included indigenous Māori, Pacific and international students with previous academic difficulty. Participation was voluntary via a global email invitation to all undergraduate levels and transcripts were offered for member-checking. Data was transcribed word-for-word and content coded with thematic analysis. Secondary analysis confirmed emerging themes.

Summary of Results: Student experiences of academic difficulty appear to be shaped by external, institutional and psychological factors. Sub-themes included the immediate learning environment along with acculturative, financial, health-related and social stress. Acculturative stress occurred due to the students entering an environment different to their cultural backgrounds. Psychological factors included both the negative emotional experience of failure and stigmatisation and the positive resultant coping mechanisms.

Discussion and Conclusions: The major themes identified are in keeping with the current literature, including the impact of the hidden curriculum such as, prejudice, teaching by humiliation, and hierarchies. There were complex situations surrounding causation of academic difficulty, although remediation appeared to be a 'one size fits all' approach. Of significance to this study was the demonstration of student resilience. Tailored remedial programmes with early identification of at risk students are required. Future work needs to focus on modifying medical programmes' intrinsic biases and hidden curriculum alongside fostering student resilience.

Take-home Messages: Future remediation practices need to identify and support at risk students by employing a personalised, culturally appropriate process. A positive learning environment is essential to foster deep learning and student trust. Medical programmes need to work on reducing the stigma of failure and promote student resilience to alleviate the cost of academic difficulty for both the students and institution involved.

#4M Short Communications - Student in Difficulty

4M3 (1550)

Date of Presentation: Monday, 26 August 2019

Time of Presentation: 1430-1445

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Struggling with Strugglers: Using medical admission tests for improving educational practices

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ABSTRACT

Background: Struggling medical students is an under-researched in medical education. It is known, however, that early identification is important for effective remediation. This work demonstrates how admission data can be used for identifying future struggling students leading to early intervention and minimising the risk of failure.

Summary of Work: Data comprise 700 students from the University of New South Wales undergraduate medical program. The main outcome of interest was whether these students struggled during this 6-year program; they were classified to be struggling if they had to repeat assessment. Discriminate Function Analysis (DFA) assessed whether their pre-admission academic achievement, Undergraduate Medicine Admission Test (UMAT) and interview scores had predictive effect regarding likelihood to struggle.

Summary of Results: A lower pre-admission academic achievement in the form of Australian Tertiary Admission Rank (ATAR) or Grade Point Average (GPA) were found to be the best positive predictors of whether a student was likely to struggle. Lower UMAT and poorer interview scores were found to have a comparatively much smaller predictive effect.

Discussion and Conclusions: These results indicate that pre-admission academic achievement can be used to predict which students are likely to struggle in an Australian undergraduate medicine program. More importantly, it was identified that not all selection tools have the same impact. Thus, it is important to consider the predictability of each selection tool independently when identifying the potential strugglers as early as upon the commencement of the medical study. Noteworthy that early intervention based on selection tools is preferable over early intervention based on ethnicity or social background which may be perceived as discrimination.

Take-home Messages: Selection tools should be used for identifying strugglers among the admitted students. Selection tools provide critical information for implementing early intervention for potentially future strugglers Using selection tools for early intervention may avoid tagging potential strugglers by any particular socio-cultural background thus may increase student motivation and minimise perception of discrimination.

#4M Short Communications - Student in Difficulty

4M4 (2890)

Date of Presentation: Monday, 26 August 2019

Time of Presentation: 1445-1500

Location of Presentation: Room 0.94-95, Level 0

Understanding Differential Attainment at Warwick Medical School (WMS), UK

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ABSTRACT

Background: Medical students from BME groups have poorer academic performance on average compared to their white peers. The BME attainment gap is widely thought to result from BME students' experiences of learning and there is evidence that interactions between students and teachers and between students and their peers critically affect learning outcomes. The GMC also emphasises the importance of equality and diversity. WMS is the largest graduate-entry medical school in the UK with students having already achieved 2nd class upper or 1st class in their undergraduate study. So why should BME students underperform?

Summary of Work: We collected quantitative data about admission, performance during the course and graduation across 5-8 year periods to have enough numbers for analysis according to each ethnic subgroups. We also collected qualitative data about BME student experience during the course from four focus groups and gathered data using semi-structured interviews in 2018. Thematic analysis of this data was done.

Summary of Results: Our data showed that white applicants 25% more likely than BME applicants to get an offer following the application and selection centre MMI process. BME students underperform during the course with less merit and distinctions awarded. Furthermore, no black students have graduated with honours over the last eight years. BME students in this study reported facing a range of difficulties throughout their graduate-entry medical training that they felt impeded their learning and performance: a. Relationships between staff and students and among students: including lack of representation and lack of understanding of cultural differences b. Institution and learning: including curricular, teaching and assessment practices c. Psychosocial and identity factors: including feelings of isolation, reduced self-confidence and low self-esteem that hindered their learning and performance.

Discussion and Conclusions: Despite recruiting students with proven achievement in their previous university degree(s), we still have an attainment gap at WMS. The data highlighted the areas to focus on and we have been working on these to remove the differential attainment and improve BME student experience.

Take-home Messages: As educators this is our gap not the students gap; we have a responsibility to prevent differential attainment in our students.

#4M Short Communications - Student in Difficulty

4M5 (2239)

Date of Presentation: Monday, 26 August 2019

Time of Presentation: 1500-1515

Location of Presentation: Room 0.94-95, Level 0

Near-Peer academic coaching in Undergraduate Medical Education

AUTHOR(S):

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ABSTRACT

Background: Near-peer advising studies have demonstrated effective results. Younger peers find the skills of near-peer advisors more achievable and easier to replicate. Similar studies conducted found that near-peer mentoring programs have been universally liked by both mentors and mentees. Near-peer academic coaching for at-risk students with the opportunity to be tutored by high performance recent graduates in not well studied.

Summary of Work: We identified and enrolled 26 at-risk students who passed USMLE Step 1 on the first attempt and scored a 210 or lower. We collaborated them with recent alumni (residents in internal medicine, Emergency and Family Medicine) who scored a 255 or higher on their USMLE Step 2 CK exams. The alumni mentors provided five one-hour academic advising sessions to the at-risk students. During the sessions, the alumni mentors reviewed cases; discussed resources, reviewed study time and habits, and assigned the mentees study objectives for the next session. USMLE Step 2 CK outcomes for mentored students were tracked and compared to non-mentored students within the same USMLE Step 1 score range and cohort.

Summary of Results: The mentored students who scored between a 201 and 210 on USMLE Step 1 scored an average of 222 and raised by 17 points on their USMLE Step 2 CK examination. Compared to non-mentored students who scored within the same range on USMLE Step 1, received an average of 217 and raised by 7 points on their USMLE Step 2 CK examination. Mentors and mentees were surveyed to rate their experience with the program. All mentored students indicated that they felt the program helped improve their readiness for the USMLE Step 2 CK examination and would recommend it to other medical students.

Discussion and Conclusions: Mentored students scored on average five points higher on their USMLE Step 2 CK examination compared to non-mentored students. All mentored students rated the program favorable and indicated that their assigned mentor interaction assisted them in preparing for their USMLE Step 2 CK examination.

Take-home Messages: Near-peer academic coaching can enhance student readiness and performance in high stake national examinations.

#4M Short Communications - Student in Difficulty

4M6 (2936)

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Identifying developmental trajectories of communication and interpersonal skills among medical students: Evidence from two longitudinal cohorts across four years

AUTHOR(S):

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ABSTRACT

Background: Developmental trajectories are learning pathways through which students acquire certain competencies over time. They show the relationships between achievement and learning effort, providing information about progress to both students and instructors. Communication and interpersonal skills (CIS) are foundational competencies, which begin in undergraduate medical education (UME); however, it is unclear at what rate and what patterns students develop CIS during UME. We identified different patterns of CIS learning curves among medical students.

Summary of Work: We used data from two longitudinal cohorts of 2013-2016 (N=138) and 2014-2017 (N=140) students. Students were administered a six-station Objective Structured Clinical Examinations (OSCEs) every six months. A six-item CIS scale with five-point rating measures was used: good relationship, active listening, gathering information, empathy, sharing information, and physical exam explanation (G-coefficient=0.886). We used latent growth mixture models to investigate patterns of learning curves.

Summary of Results: Overall, students' CIS scores increased between second to fourth years. By item, 'good relationship' scores were the highest, 'physical exam explanation' scores were the lowest, and 'empathy' scores had the steepest increase (slope coefficient = 2.78; 95% CI:[2.49-3.06]; $p < 0.001$). The growth mixture models identified three distinct learning curves: 'continuous', 'slow', and 'stagnant' patterns. For students in the 'continuous' pattern, CIS scores improved continuously during the entire UME. The 'slow' pattern increased initially but the rate decreased in the latter period of training. The 'stagnant' pattern was a type in which CIS scores stagnates without further progress in the second half of training. Among 261 students, 65 (24.9%) showed a 'continuous' pattern, while 104 (39.8%) was in the 'slow' pattern and 92 (35.2%) was in the 'stagnant' pattern.

Discussion and Conclusions: Although CIS scores showed a tendency to increase, certain items continued to score lower without correction, and another item showed relatively rapid progress. In addition, not all students showed continuous improvement; some students may slow down or stop developing in their senior year.

Take-home Messages: Patterns of CIS developmental trajectories can inform better early tracking of learners and provide remediation opportunities for students who may not progress in a timely manner.