#3II Posters: Stress and Student in Difficulty

**Location:** Hall 3 Foyer

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**#3II01 (1900)**

**Thought Spot: Enhancing student mental health through mobile solutions**

*David Wiljer, University Health Network, Toronto, Canada*

*Andrew Johnson, Centre for Addiction and Mental Health, Toronto, Canada*

*Alexxa Abi-Jaoude, Centre for Addiction and Mental Health, Toronto, Canada*

*Genevieve Ferguson, Centre for Addiction and Mental Health, Toronto, Canada*

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**Background:** Post-secondary students (medical (n=16), science (n=19) and arts and humanities (n=20)) in a large Canadian urban area were engaged to optimize Thought Spot, an existing digital platform designed to improve access to mental health services.

**Summary of Work:** Through qualitative facilitation methods such as journey mapping, world cafes and personas, students provided feedback on the platform’s usability, its potential value in post-secondary settings, and methods of including mental health information within the platform. Data collected from students informed the redesign of Thought Spot.

**Summary of Results:** Overall, 65 students led and participated in seven engagement activities, where they identified three major opportunities for improvement: increasing engagement between users, developing a responsive discovery plan, and providing better data and organization within the mobile application.

**Discussion:** Co-creation with students from varied disciplines can facilitate rich discussion and valuable solutions for mobile mental health platforms. By following a co-creative process, the redesigned platform will address system barriers and reflect the needs of the end-user.

**Conclusion:** Participants from diverse disciplines were motivated by our project’s focus on mental health and end-user involvement. Prominent themes extracted from the activities will be used to inform the optimization of Thought Spot as well as the second phase of this project, a randomized control trial.

**Take-home Message:** Engagement of students in every phase of a project through co-creation activities is achievable by emphasizing the importance of inclusion, transparency, and flexibility. Through Thought Spot, we have developed a strategy that could be used widely across medical school project planning for better alignment with student needs and experiences.

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**#3II02 (1485)**

**Stress and anxiety in second and third year medical students during a period of curriculum change**

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*Sarah Winfield, School of Medicine, Liverpool, UK*

*David Taylor, School of Medicine, Liverpool, UK*

**Background:** This study measured the prevalence of stress in groups of second and third year medical students. It also aimed to evaluate if the evolving curriculum from a problem-based learning model (C1996) to a case-based learning curriculum (C2014) had an impact on the psychological well-being of students.

**Summary of Work:** The General Health Questionnaire (GHQ-12) was distributed to Year 2 and 3 C2014 students. An identical study in 2012 provided data for second year C1996 students. The GHQ scoring system provides a maximum score of 12. Students with scoring 3 or more were identified as probable cases, indicating psychological disturbance.

**Summary of Results:** Slightly more than half (55%) of C2014 students scored above the GHQ-12 threshold, with 68% of second year students and 43% of third year students identified as probable cases. Of the second year C1996 students, 52% also scored above the threshold.

**Discussion:** Significantly more second year C2014 students experienced stress compared to third year C2014 students (P=0.016). There is minimal difference in psychological distress between C2014 students and C1996 students; however there is a greater difference when Year 3 data was excluded from the comparison.

**Conclusion:** This study shows the high prevalence of stress amongst students and the impact of a changed curriculum. Discussions with the Student Support Service at Liverpool Medical School established that the number of students who seek support doesn’t represent the true number of students who experience psychological distress.

**Take-home Message:** Psychological distress affects many students. It is important that students are aware of the support available and encouraged to access it. The introduction of a screening tool could help to identify students who may need support.
#31103 (161)
Tolerance for Ambiguity: Does it Protect Against Burnout?

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Nian Chih Huang, Duke-NUS Medical School, Singapore
Jabed Iqbal, Duke-NUS Medical School, Singapore
May Mok, Duke-NUS Medical School, Singapore
Attilio Rapisarda, Duke-NUS Medical School, Singapore
Pierce Chow, Duke-NUS Medical School, Singapore

**Background:** From the beginning of medical school, students must cope with ambiguity. For example, students must decide when to move from one topic of study to the next even when mastery of the first has not been attained. Low tolerance for this ambiguity may portend poor psychological outcomes, such as burnout.

**Summary of Work:** We conducted a longitudinal panel study (4 time points) of 59 first-year Duke-NUS Medical School students to examine the unique role that tolerance for ambiguity plays in the development of burnout over the course of the first year of medical school. Preliminary results (from 2 time points) are presented here.

**Summary of Results:** Although tolerance for ambiguity increased between the two time points, the prevalence of burnout doubled (15% to 30%) in the first six months of medical school. After controlling for stress management, grit, social support, and religiosity, a decrease in tolerance for ambiguity was significantly associated with increased symptoms of burnout.

**Discussion:** The ability to cope with ambiguity and uncertainty is critical in clinical practice and studies show that intolerance of ambiguity or uncertainty may be linked to stress in physicians. Furthermore, it has been hypothesized that intolerance of ambiguity and burnout may be associated.

**Conclusion:** Our initial data shows that after adjusting for various factors, there is a simultaneous increase in intolerance for ambiguity and burnout in medical students in Singapore. This may indicate that efforts to increase tolerance for ambiguity are appropriate targets for promoting wellbeing in medical school and beyond.

**Take-home Message:** Burnout is a common problem in medical students. Medical schools should be cognizant of the need to support approaches toward ameliorating the controllable factors that are associated with the development of burnout.

#31104 (642)
A Motivational Perspective on Medical Student Burnout

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Jona Frohlich, University of Alberta, Edmonton, Canada
Shelley Ross, University of Alberta, Edmonton, Canada
Anna Oswald, University of Alberta, Edmonton, Canada
Jonathan White, University of Alberta, Edmonton, Canada
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**Background:** Academic burnout is problematic in preparation for medical practice because it can compromise professionalism, negatively impact care, and lead to dropout. Achievement Goal Theory (AGT) draws links between adaptive (mastery-approach) and maladaptive (performance-avoidance) goals and outcomes. Using AGT, we examined associations of achievement goals and academic burnout in medical students.

**Summary of Work:** Through an online questionnaire, we collected quantitative data from 257 medical students in years 1-4 of their program. The survey contained existing scales to measure achievement goals and burnout. After examining descriptive statistics (means, correlations), we performed regression analyses to examine predictive relationships between achievement goals and self-reported academic burnout.

**Summary of Results:** Students endorsed mastery-approach goals more strongly (M=22.63, SD=3.07) than performance-avoidance goals (M=13.97, SD=4.34), with performance-avoidance goals predicting academic burnout (β = .18, p = .02). There was a significant negative correlation between burnout and mastery-approach goals (r = -.21, p < .01), however, these goals did not predict lower burnout.

**Discussion:** Results provide support for the maladaptive nature of performance-avoidance goals, suggesting that students holding these goals are more susceptible to academic burnout. The fact that the relationship between mastery-approach goals and burnout was not predictive suggests that mastery-approach goals alone may not protect from burnout in high-achieving students.

**Conclusion:** Future research should consider protective factors that work in conjunction with mastery-approach goals. We hope to inform program committees of findings that could enhance the well-being and training of medical students. A better understanding of the role played by achievement goals is important, and may inform future selection processes.

**Take-home Message:** This research sheds light on the important role that motivation plays in the burnout experience of medical students. Given the high-stakes, high-stress nature of medical practice, it is crucial that we strive to understand socioemotional experiences of students and the ways in which we can cultivate resilient and successful physicians.
#3305 (892)
Observations from the course “Stress management methods for students” for first-year medical students in the University of Helsinki

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Background: Stress and burnout are an increasing trend among medical professionals, and recent studies suggest that the development starts already during the studentship period. Owing to the student’s own initiative, we designed a course “Stress management methods for students” that took place at the end of first preclinical year.

Summary of Work: The course curriculum combined interactive teaching sessions on stress physiology and psychology, sleep and exercise medicine and their role in stress management, as well as mindfulness. The students kept sleep and stress diaries prior to the course and prepared group assignments and reflective journals over the course topics.

Summary of Results: The course was fully populated (N=47). Based on feedback forms, reflective journals and teachers’ observations, the students were enthusiastic and found the topics useful for understanding their stress and managing it. Combination of physiological aspects of stress to psychology and mindfulness was valued and helped to engage more students.

Discussion: Students experience stress already during the first year and this may have a negative impact on their studies and professional development. Student feedback revealed that this type of education is necessary and should be offered at the early phase of studies.

Conclusion: Students clearly have a demand for a stress management course already at the early time of studies. Combining physiological/medical aspects to stress psychology and mindfulness was highly appreciated.

Take-home Message: Students want education on stress management and it should be offered already during the first preclinical years.

#3306 (1208)
Dealing with stress and competitiveness in medical schools: Is cognitive doping a reality?

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Background: Exposed to an increasingly competitive environment, students try to surpass themselves, seeking new means to enhance their cognitive performance. In Portugal, every year, new medical graduates undertake the National Exam for Specialty Selection (NESS), a life-defining exam that ranks them for the available postgraduate residency vacancies in Portuguese Health System.

Summary of work: To identify the consumption of prescription drugs (PD) and other substances taken for cognitive enhancement purposes (SFCEP), an online anonymous survey was sent to all undergraduate students from 8 Portuguese Medical Faculties (Group1), as to all post-graduate students applying for the NESS (Group2). A cross-sectional analysis was undertaken, comparing intergroup significant differences.

Summary of Results: From 1156 answers, PD consumption was 5%/Group1 and 14%/Group2, mainly to enhance concentration/attention (83%). Both were most frequently used in exam periods (PD:M=2.90,SD=1.47,NESS:M=3.44,SD=1.28) with SFCEP consumption higher in Group2. Significant positive correlations were found between academic year with coffee (r=0.097, p=0.002) and energetic drinks (r=0.089, p=0.003). No differences were found between faculties.

Discussion: PD and SFCEP consumption was higher in Group2. Furthermore, students resorted more frequently to PDs in exam periods and NESS, which points to an association between consumptions and assessment periods. Further investigation is needed to understand if this link is only stress-driven or influenced by other factors as well.

Conclusion: If only a minority of participants revealed PD consumption, mainly associated with exam periods and NESS, SFCEP utilization if far more common. Concentration and attention seem to be the main target for enhancement for Portuguese medical students with NESS representing a breaking point in their lives, exacerbating overall consumptions.

Take-home Messages: The consumption of prescription drugs for cognitive enhancement purposes challenges Medical Education to reflect about its implications in the assessment process. Alternative solutions, like ‘Learning environment interventions’ (eg. Mind body skills education, curriculum structure, mentor programs, etc.), might reduce student’s need for seeking substances to boost their focus and productivity.
*#3107 (461)*

**SyriaScholar - teaching medical students in Syria from the UK and USA**

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Kinan Muhammed

**Background:** The conflict in Syria has placed great strain on medical education. There is insufficient resources for small-group teaching, which makes it difficult for students to clarify problematic subjects. At the same time, there are many doctors around the world willing to help but they have no access to Syrian Students.

**Summary of Work:** SyriaScholar is an online learning platform that allows British doctors to teach medical students in Syria in real time over the internet. Students can see powerpoint slides, talk directly with their tutors and ask questions. We have also helped the students set up an audit at their local hospital.

**Summary of Results:** We have been teaching a "Universal Medical Toolkit" made up of emergency management skills as well as X-ray, ECG and arterial blood gas interpretation skills. We have also been developing quality improvement skills by helping the students set up a hand-hygiene audit at a Syrian hospital to improve patient safety.

**Discussion:** Students consistently provided excellent feedback and the sizes of our classes continue to grow. We have also noticed a qualitative improvement in the ability of our students to apply topics covered. They have also developed the skills needed to carry out future quality improvement work independently later in their careers.

**Conclusion:** Online education is an extremely valuable tool that we have used to help medical students in Syria. The expertise of British trained medical graduates was successfully shared with Syrian students over the internet. The Syrian students developed a set of skills that will help them care for their future patients.

**Take-home Message:** International online medical education can help Syrian students. We are developing programs to complement the education Syrian students are currently receiving. We hope that online education can compensate to some extent for the depletion of resources that has arisen from the conflict.

*#3108 (653)*

**Medical students’ syndrome and its related factors: A cross sectional study from Iran**

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**Background:** In the process of studying medicine, some students excessively focused on their own symptoms relating to the diseases that they are studying at the time. This concerns are a source of stress and affect academic performance. We investigated the frequency of this syndrome among medical students in Kerman University(KUMS).

**Summary of Work:** This cross-sectional study carried out in KUMS using census method, 2016. Data collected using an instrument contained demographic data and Persian version of 14-items Whiteley index. The range was 14 to 56 and scores 32 to 56 considered as hypochondria. Psychometric properties of the questionnaire confirmed. The data was analyzed using SPSS.

**Summary of Results:** Of 310 medical students, 186 (60%) were in clerkship and 124 (40%) in internship stage with a mean age of 24.1±1.5. The mean score on WI-14 was 34.47±8.6 which accordingly 194 (62.5%) students were in the hypochondriac limit. Single and clerkship students had higher scores.

**Discussion:** The frequency of medical students’ syndrome was high among our student. Given its relationship with general health and academic performance, increasing the awareness of students about this disorder, early diagnosis and intervention should be considered.

**Conclusion:** Due to the high frequency of medical students’ syndrome, it is recommended to consider it in the periodic consultation with medical students.

**Take-home Message:** The frequency of medical students’ syndrome was high among our student in Kerman University(KUMS).
#3110 (1225)
Where do medical students learn how to cope with stress?

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**Esther Murray, Barts and The London School of Medicine and Dentistry, London, UK**

**Background:** The General Medical Council (GMC) emphasises the importance of mental health in medical students, and expects students to develop adequate coping strategies to stress. Literature also documents the need for medical students to develop coping strategies, but neglects to explore the origins of their preferred coping mechanism.

**Summary of Work:** This project will explore where medical students believe they have acquired their preferred coping strategies to stress in relation to formal (curriculum outcomes) and informal (hidden curriculum outcomes) experiences in medical school. This new understanding of how coping strategies are developed can inform curriculum development.

**Summary of Results:** Preliminary data suggests that medical students use multiple and different coping strategies to stress and challenges during their studies and clinical placements. However, these coping strategies arise from an amalgamation of previous strategies used before entering medical school and strategies observed from other medical students during their studies.

**Discussion:** Medical students reply on both previous coping strategies and new strategies encountered through observation or informal suggestions from peers other students. This suggests that during medical school students primarily develop coping strategies from social interactions and informal experiences.

**Conclusion:** This research project explores the ways in which medical student’s coping practices meet the GMC requirements of maintaining good mental health. It appears that students develop new ways to cope with stress through social interactions and extra-curricular experiences beyond the medical school’s formal curricular outcomes.

**Take-home Message:** Medical students learn how to cope with stress through a combination of existing strategies used before entering medical school and new strategies developed through observation and suggestions from other medical students. Social experiences during medical school therefore influence the strategies used to cope with stress.

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#3110 (2600)
Unexpected factors determine the level of stress, fatigue and well-being in French medical students during their first academic year

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**Background:** French military medical students have to pass high selective exams during their first academic year. They are submitted to a high amount of stress and chronic sleep restriction, generating anxiety, fatigue, and sleepiness. They are dispatched in two medicine faculties having their own pedagogic programs and time scheduled organization.

**Summary of Work:** The aim of the study was to monthly evaluate the psychological profile of 152 students (73 males and 79 females) during their first academic year, using a psychometric approach including 21 variables. The study took place between 2015 November and 2016 April in Lyon at a latitude of 45.8° North.

**Summary of Results:** Differences related to gender and differences related to academic failure leading to year repetition affected 41% of the variables. Differences related to pedagogic and time scheduled organization affected 85.7% of the variables. Finally, 90.5% of the variables presented a seasonal pattern with a significant impairment in November and December.

**Discussion:** We found quite unexpected results. Seasonal factor and factors related to pedagogic and time scheduled organization seem to have much more massive effects than more classical individual factors studied in psychological settings dealing with academic achievement (i.e. gender and academic failure with year repetition in our study).

**Conclusion:** The degradation of psychological condition in autumn and winter may be linked to seasonal affective disorders due to low light exposure. The time scheduled organization also plays a major role. The faculty scheduling courses in the afternoon is not doing as well as the faculty scheduling courses in the morning.

**Take-home Message:** These results need further confirmation, but may modify current strategies of stress prevention among medical students. Luminotherapy and time scheduling optimization in accordance with human circadian time structure may have indeed a huge interest and perhaps a greater impact than more traditional individual stress coaching programs.
Impact of an Intervention Program on Diverse Learning Capabilities, based on the determination of an Academic Risk Profile in First Year Students of Medicine

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**Background:** The massive admission to the university implies a heterogeneous income profiles of students, and this requires new ways to successful transition to higher education. To prevent academic failures, the measurement of a psychopedagogical profile was established in freshmen and to implement an early intervention on descended aspects of learning.

**Summary of Work:** To determine freshmen with risk capabilities for learning, utilizing a psychopedagogical battery; to promote in those capacities for learning: establish a system of feedback to teaching. Specific interventions were designed in semi-annual. Intervened were followed systematically and longitudinally, being comparatively evaluated with their cohort partners based on learning outcomes.

**Summary of Results:** The determination of learning abilities in each cohort, was discriminant to estimate students whit academic risk. About 20% of each cohort was ever intervened; Attention-Concentration capacity resulted in mid- to low-mid range in all cohorts. Students intervened showed similar or superior learning outcomes to their peers without academic risk.

**Discussion:** All the intervened students received action always on the general capacity of Attention-Concentration, and other specific interventions. Intervention in this capacity required supporting planning of associated tasks results and the experience applied in the interventions indicate that the learning capabilities could be more specifically estimated.

**Conclusion:** A systematic intervention applied early, can be a critical success factor for a diverse student population. The performance of students with academic risk to reach and surpass the non-intervened performance, benefiting the approval of cohorts. Attention-Concentration capacity is decreased in all evaluative cohorts.

**Take-home Message:** It is possible to estimate an admission profile and take care of the students with possibilities of academic risk. It is important to follow up the Cohorts. The study of the Executive Functions should be deepened, for an efficient performance in the Learning in Higher Education.

Can Student Individual Interview Program Predict Learners in Academic Difficulty?

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**Background:** In each year, approximately 10 to 15 percent of students experience flunking or leave of absence due to academic difficulties during their basic medicine studies in the authors’ medical college (KUCM). The purpose of this study was to examine a new launched individual interview program whether can predict learners in academic difficulty.

**Summary of Work:** At the beginning of year 2016, 128 entire first year students were interviewed by fifteen faculty members. Each interview was a 15-minute duration with one-to-one basis. The students were classified into three categories; A(follow-up counseling needed), B(follow-up counseling probably needed), and C(follow-up counseling is not needed).

**Summary of Results:** Among 14 students who failed to promotion in the end of 2016 academic year, 11 were classified as A or B. The ratio of group A among students who failed to proceed to the next academic year was 42.9%, which was 2.5 times higher than that of students who successfully finished their first year studies (17.5%).

**Discussion:** Only three students actually used additional follow-up counseling services among eleven students who were belongs to group A and B. Further discussion should be needed to how to increase usage of follow-up counseling services by students who identified as potential risk groups in a non-threatening but an effective way.

**Conclusion:** The Student interviews program at the beginning of academic year at the KUCM might have a predictive function to identify possible learners in academic difficulty.

**Take-home Message:** Non-threatening and effective way to facilitate students’ visit to follow-up sessions in voluntary basis should be developed.
**#3113 (1111)**  
Steering Illusions of Competence in Anatomy: A near-peer tutor intervention for at-risk students  

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**Background:** Transition to medical school presents academic challenges requiring paradigm shifts in student’s approach to learning. Poor study integration skills, lack of confidence and failure to understand personal responsibility attribute to learning challenges. Early recognition and management of student failure is essential in circumventing preventable adverse events in future clinical practice.  

**Summary of Work:** This study revisits effectiveness of formative feedback as predictor of academic success and impact of near-peer tutoring on at risk students. All students were informed of opportunities for tutoring. Score of <70% was indicator for at-risk students. At-risk students worked with near-peer TA tutors to formulate individualized learning plans.  

**Summary of Results:** Scores were evaluated before and after students received formative feedback. Averages ARS and laboratory scores improved significantly after tutoring (68% vs 61%, p=0.04) and (67% vs 56%, p=0.04). Near-peer tutors have potential to make significant impact on at-risk students. Formative feedback scores are reliable indicator for tracking student performance.  

**Discussion:** Studies in healthcare show positive effect of peer intervention in providing support for team members. Peers relate more easily and naturally to current challenges within the existing shared environment. Assimilation of new knowledge occurs more effectively through reflection and exchange of common experience, a sense of belonging and trust.  

**Conclusion:** Progress of at-risk students receiving intervention showed steady improvement over course period and were less likely to require remediation than similar students without intervention. At-risk students at early points in the medical curriculum not only benefit from academic support, but when accompanied by strategic intervention, learning skills become sustainable.  

**Take-home Message:** Within a tutoring program, oversight, partnership and continuity maximizes near-peer facilitation of learning for at risk students in gross anatomy course. Formative feedback scores are important measures for monitoring student success. In steering illusions of competence, struggling students are left with a sense of direction to meet their objectives.

**#3114 (1133)**  
Enhancing retention of new nurses by inter-professional counseling and simulation training  

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Ken-Ching Jeng  

**Background:** Main reasons of nursing attrition from new nurses in any hospital are related with pressure and nursing skill competency. Their retention rate could be improved by effective counseling and training. Therefore the aim of this study was to evaluate the effect of inter-professional counseling and training on nursing retention.  

**Summary of Work:** Forty-one new nurses participated in this study. The inter-professional counseling by head nurses and physicians was focused on four levels of individual’s adaptation and needs: learning, adaptation, life, and psychology. They were taking simulation training for 7 clinical skills according to their needs and evaluated by OSCE with constructive feedback.  

**Summary of Results:** Forty-one participants had average scores of 97.8 and 96.2, in counseling satisfaction and learning after the counseling and simulation training. Retention rate was increased from last year by 5.58% (from 79.9 to 85.6%). All agreed that the counseling was helpful. Only one attrition occurred due to the personal health problem.  

**Discussion:** Retention rate was increased by counseling and simulation training. We found that important areas for counseling individuals and meeting their needs were learning, adaptation, life, and psychology. The clinical competency was enhanced by the simulation training as the OSCE outcome demonstrated. These approaches improved the retention rate of new nurses.  

**Conclusion:** A significant result is achieved by inter-professional counseling and the following simulation training for reducing the working pressure and enhancing clinical skills for new nurses. This approach is better than the traditional counseling and training for retention of new nurses.  

**Take-home Message:** An inter-professional counseling and following simulation training has a positive result of retention of new nurses.
Medical Students Need Help: Batch Committees Establishment

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Background: Alfaaisal University’s tough curriculum is difficult to cope with. Therefore, students introduced several committees that include transcription, lab, notes, and exam to be able to facilitate on one another and distribute the extensive workload of medical school. Our aim is to identify whether these committees are truly helpful or not.

Summary of Work: A questionnaire was distributed among 160 medical students of Alfaaisal University (year 1 to 5). It assessed whether the students use these committees or not. Additionally, it compared the cGPA before they started using the committees and their current cGPA after using them.

Summary of Results: The results show that 16% of students do not use the batch committees. After analyzing the results of their average cGPA before and after the initiation of the committees, there was an observed significant increase by 4% from 3.47 to 3.62.

Discussion: Students achieved a higher cGPA after using the batch committees' resources. These committees offer summaries, exam questions, and professor notes. They also save students' time as they allow them to stay more focused. Furthermore, the batch committees provide a unified way of presenting the given information and lectures.

Conclusion: Students achievements have increased since the introduction of the batch committees. They help them share ideas and stay on the right track. In addition, they distribute the workload which decreases the time consuming essential tasks required by the medical student.

Take-home Message: Universities should implement the batch committee idea as it incredibly improves students’ performances and encourages them to cooperate to reach the same goal. After all, medical students are already burdened and need resources to aid them in their learning experience.

Factors affecting delayed students in CPIRD Hatyai Hospital

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Background: Delayed students are students who cannot complete a medical degree within 6 years. Academic achievement is not the sole factor for selecting CPIRD students. Some students may struggle with poor academic performance during training. To identify them for early intervention, we need to know the risk factors of these students.

Summary of Work: The demographic data and the scores from admission examination, MMI scores and interview scores during institution’s student selection, and first year GPA were used to find the association with delayed students. Univariate linear regression analysis was performed for all independent factors. P value less than 0.05 was considered significant.

Summary of Results: Retrospective 3 years, 13 of 102 (12.7%) students in Hatyai Hospital are delayed by this definition. Univariate analysis showed 6 factors to be affecting delayed students: total admission score (p<0.001), Thai language score (p=0.038), Social studies score (p=0.005), Chemistry score (p=0.001), Biology score (p=0.001), and the 1st year GPA (p<0.001).

Discussion: The previous research showed CPIRD doctors were more likely to stay longer in rural areas and in public service than their counterpart. For the same standard, some of our students need to be delayed. These students need an appropriate academic support otherwise, these delayed students may become drop out.

Conclusion: Early intervention by identifying these risk factors should help us monitor and supervise them correctly.

Take-home Message: The student support system is very crucial for CPIRD students. Some predictors help us to identify the ones who need it.
#3117 (1040)
A predictive model for early identification of students at risk of failing finals

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Background: Research suggests medical students who are likely to fail final examinations can often be identified in advance by a number of individual performance indicators. However, use of such performance indicators is underutilised and many students fail without warning.

Summary of Work: Recently published work has focused on individual high-level predictors of performance, typically end-of-year marks. However, multiple indicators are available. This project examines the usefulness of a predictive model that employs many educational data points in identifying the performance decline of at-risk students before finals.

Summary of Results: The multi-indicator predictive model, identified by initial exploratory factor analysis, examines the risk of failure based on routinely gathered data, such as completion of engagement activities and administrative tasks. We present the regression analysis results of the predictive model’s usefulness in determining finals performance.

Discussion: A predictive model of risk which is simple to construct may allow for more sensitive detection of performance decline over a number of measures and time. This should allow more targeted focus of limited resources to help struggling students. Further evaluation of the impact on failure rates is now required.

Conclusion: A model to identify risk of failure can be created using routinely gathered and readily available data. Identification of students who are likely to fail finals can be more efficient and cost-effective than accepting failure and subsequent attrition after years of investment by the institution, public and students.

Take-home Message: Students exiting the programme after many years of study indicates a significant waste of resources. Predictive models, like that described here, can identify those at risk of failure at little cost to the institution and could be used to advise students and focus costly additional teaching and support.

#3118 (1409)
Comprehensive teacher ratings of class participation may anticipate the identification of medical students at risk of dropping out

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Miguel Portela, University of Minho, School of Economics and Management, Braga, Portugal
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Background: Marking student participation in class is used throughout the world to stimulate student engagement in activities. This retrospective study tested whether teacher ratings of class participation could partially predict medical student dropouts from one medical school. This would prove useful to anticipate the identification of potential dropouts.

Summary of Work: A longitudinal dataset of six cohorts (N = 709) was used to find variables associated with dropouts, using individual attributes, course failure in year 1 and an aggregate score of student participation in class. This was an average of an in class global rating, systematically marked from 1 to 5.

Summary of Results: There were 43 identified dropouts, 34 (79.07%) in the first year. Logistic regressions revealed that lower scores of class participation and lower ratios of courses failed in year 1 added predictive ability to models for the identification of dropouts. The Pseudo-R2 rose from 0.219, respectively to 0.279 and 0.611.

Discussion: Findings revealed associations between dropouts and both year 1 failures and teacher ratings of student participation. Relatively to course failures, the systematic assessment of class participation provide earlier indicators to the advantage of anticipating the identification of dropout students. The findings are understandable through the lens of Astin’s engagement model.

Conclusion: This work showed that a comprehensive system of teacher ratings of class participation with entry classes of 120 students in a non-PBL context might aid to anticipate the identification of potential dropouts. Major strengths were the sampling across multiple cohorts and the used of participation score obtained in real settings.

Take-home Message: Comprehensive scores of class participation can be used to help predict dropouts from medical school. Medical schools could look to operationalize the use of scores of class participation as an important component of systems early detection of potential dropouts.