9JJ: Posters: Student Stress and Burnout

Location: Hall 4.u, CCB
Date: Tuesday 28th August
Time: 16:00-17:30 hrs

9JJ1 (876)
A Factorial Validation and Psychometric Properties of the Thai Version of the Maslach Burnout Inventory - Student Survey among Thai medical students

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Background: Burnout is a psychological condition consisting of high emotional exhaustion, low personal accomplishment and depersonalization. It is prevalent among medical students especially in Western countries. The Maslach Burnout Inventory survey is the gold standard to diagnose but it has never been translated into Thai language nor validated to use in Thai context.

Method: The Thai version of the Maslach Burnout Inventory - general survey for students (MBI-SS) was developed to measure burnout among Thai medical students by a two-stage process, namely the translation process and testing the result for factorial validity and psychometric properties. Then interrater reliability (IRR) by means of Kappa’s was assessed to identify the degree of agreement in translation process. Data from the questionnaire was tested for internal consistency. A confirmatory factor analysis was carried out using as fit indices of the X2, df, Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA).

Results: 545 medical students participated in the survey (76.1% response rate, female 52.1%). The IRR was acceptable with Kappa of 0.83. The confirmatory factor analysis demonstrated to an adequate fit of X2/df=2.619, CFI=0.937, TLI=0.944 and RMSEA=0.060, which indicated that the Thai version of the MBI-SS provided reasonable fit to the data among Thai medical students. However, removal of a factorial model with item 13 provided a superior fit with RMSEA 0.055. Internal consistency by Cronbach’s alpha was acceptable with 0.79.

Conclusions: The Thai version of the MBI-SS was shown to have adequate validity and reliability. The final model with item 13 removal provided superior fit than the original version.

Take-home message: The Thai version of the MBI-SS represents a valid and reliable instrument to diagnose burnout among Thai medical students.

9JJ2 (1132)
The Prevalence and Associated Factors of Burnout in Thai Medical Students

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Background: Burnout has been described as a syndrome of emotional exhaustion, relating to students’ mental distance from studies and reduced academic efficacy. Many studies show students experience high burnout during medical education. Little is known about the prevalence of burnout, and its associated factors, among Thai medical students.

Method: The Maslach Burnout Inventory-Student Survey (MBI-SS) questionnaire was translated to Thai and distributed to 671 second- to sixth-year medical students at Naresuan University. High burnout can be characterized by a score of >14 on exhaustion, >6 on cynicism, and <23 on academic efficacy. The GPA <2.5 (from 4) or the failure to pass the National License tests were used to classify poor academic achievement. Gender, medical school admission scheme, and age were recorded. Results were analyzed using the Chi-square test.

Results: A total of 510 medical students (76% response rate) completed the survey. The second-year to sixth-year students demonstrated various high burnout rates (13%, 12%, 22%, 24%, and 35%, respectively; p<0.001). The prevalence of high burnout in low-performing students was significantly greater than that in the high achievers (31% and 18%, respectively; p=0.024). While the difference in high-level burnout between graduate entry students (mean age 29, 14%) and the undergraduate group (mean age 21, 18%) was not significant (p=0.229), a significant difference was found in high emotional exhaustion (42.50% and 61.03%, respectively; p=0.001). There was no difference between male (21%) and female (16%), p=0.244.

Conclusions: High burnout progressively develops over the course of medical education, with the highest in the final year; possibly due to increased professional responsibility. The lower degree of emotional exhaustion in graduate entry students could be related to greater motivation, emotional maturity or better coping strategies from previous studies, whereas high burnout found in low-performing students may be caused by academic struggle or low motivation. These factors should be further investigated.

Take-home message: The clinical academic year may lead to high burnout in medical students. There should be an appropriate support system/program to assist and/or prevent the increasing rate of burnout.
**9JJ3 (1022)**

**Burnout in clinical years medical students and its relation to the body and brain**

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**Background:** The high risk of burnout in healthcare professional is well established, but little is known about its impact on their physical health. The symptoms of burnout vary among different people. The purpose of this study was to evaluate burnout as it relates to the physical health and GPA of clinical years medical students.

**Method:** The participants included medical students from year 4-6 at Roi Et Hospital Medical Center. We conducted a cross-sectional design. The MBI-GS survey consisted of 16 items clustered in three scales – emotional exhaustion, cynicism and professional efficacy; in addition, we administered self-report questionnaires about physical health, such as gastrointestinal pain, chronic muscle pain, sharp injury, and about GPA. Statistical were analyzed using chi square.

**Results:** 69 students were surveyed, with 36% males and 64% females. Females showed higher high emotional exhaustion rates compared to males. Students with gastrointestinal pain more than 1 time/week had a higher high emotional exhaustion rate (93%) than did those without (p=0.017) and those with chronic muscle pain had a higher high emotional exhaustion rate (63%) than did those with no chronic pain (p=0.035). Sharp injury was not significant. The mean GPAs of students with high cynicism were 3.29, while 3.45 for students with low cynicism. The mean GPAs of students with a low professional efficacy were 3.28 compared to 3.35 for students with a high professional efficacy.

**Discussion:** The physical health and brain function of medical students is related to all three dimensions of burnout. However, these results are similar to the wider population nationwide.

**Conclusion:** Physical health and brain function are associated with all three dimensions of burnout. Furthermore, the causal relationships between burnout and physical health need to be investigated in future studies.

**Take-home message:** Burnout is not just a state of mind; it is a condition that leaves its mark on the body. Medical students and all individuals should keep alert and make sure to have positive meaningful social connections in their daily lives and to recharge their bodies and brains.

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**9JJ4 (3257)**

**Well-being and educational environment in initial clinical training in medicine. Perception of students from 11 Chilean medical schools**

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**Background:** In medical schools training is relevant to develop competencies related to professionalism and self-care that benefit the integral formation and professionals of excellence, who are also prepared to face a high demand, similar to the demand that they will find in the postgraduate and professional practice. Chile offers undergraduate medical education that lasts 7 years. The common profile of Chilean medical schools describes the clinical competencies for which they must be prepared and including being able to self-care (recognition of personal limitations and ability to ask for help). The objective of the study is to evaluate the perception of well-being level and the educational environment that Chilean medical students have during their undergraduate initial clinical training.

**Method:** 4th and 5th year students from 11 Chilean medical schools participate. Student well-being levels were assessed with the MHC-SF and the MBI. Educational environment perceptions were evaluated with the DREEM. The data will be analyzed through Chi-square tests and T test.

**Results:** 50% of students reported flourishing mental health levels. One third of the participants perceived high levels of burnout risk (emotional exhaustion). The educational environment was evaluated as excellent or more positive than negative by 70% of the students. There are differences in the indicators of well-being and the educational environment between schools. The results also suggest associations between the perception of risk of burnout and educational environment.

**Conclusions:** Medical students in clinical training report high levels of positive mental health at the same time that a proportion of them perceive high levels of risk of burnout. The perception of risk of burnout is associated with the educational environment of which the students part of. Despite of the high level of burnout risk perceived, this is a population with high levels of positive mental health that can be a protective factor to maintain motivation and continuity of studies.

**Take-home message:** High risk of burnout requires the identification of contextual factors to respond to these findings. It is also suggested to identify organizational and individual opportunities to promote self-care of students.

**Funding provided by FONDECYT 1150340.**
9JJ5 (590)
Dispositional Mindfulness - a protective factor for burnout in undergraduate medical students?

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Background: Medical students are continuously exposed to stressful situations that may impair their physical and psychosocial wellbeing as they progress through their clinical training. Without timely academic and medical assistance, one in two students may develop burnout, a syndrome characterized by emotional exhaustion, depersonalization, and loss of the sense of purpose and achievement. Many burnout-reducing interventions apply some form of mindfulness practice. However, little is known about the relationship between dispositional mindfulness and psychosocial wellbeing with burnout during clinical training. We studied the relationships between these variables across the undergraduate medical curriculum.

Method: In 2017, 240 students enrolled in years three, four, six and seven of a 7-year medical curriculum at a large Chilean university answered dispositional mindfulness, psychosocial wellbeing, distress, and burnout questionnaires. We compared scores across study-years and analyzed the relationships between psychosocial wellbeing and distress as well as the distribution of mindfulness scores in students with or without burnout. ANOVA and Chi-Square tests were used to compare scores across study-years and proportions, respectively.

Results: Burnout frequency ranged from 47.1% to 69.9%, with year six presenting the highest level. Wellbeing and distress displayed a significant inverse relationship. Students without burnout had higher dispositional mindfulness and psychosocial well-being, and less distress compared to burned-out students.

Discussion: This study confirms the high prevalence of burnout in medical students and reveals its sensitivity to progression along the curriculum. The soaring burnout levels in year six may relate to the increase of students’ responsibilities on direct patient care.

Conclusions: Causal relationships cannot be drawn. However, the negative association between dispositional mindfulness and burnout warrants further research and may open new avenues for preventive interventions.

Take-home messages: Given its high prevalence and associated risks for students and patients, clinical teachers and medical education authorities should address burnout during medical training.

• Curricula should be analyzed for its influence on students’ wellbeing and revised to facilitate healthy transitions into clinical setups.
• Deliberate practice of mindfulness and positive psychosocial resources should be explored as means to potentiate students’ wellbeing and resilience during clinical training.

Funded by FONDECYT 1150340

9JJ6 (2537)
Stress management for medical students: Scientific knowledge converts into practical tools through interaction and reflection

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Background: High level of harmful stress is common among medical students. In order to give students useful knowledge and tools, a compact and optional course “Stress management methods for students” was designed in University of Helsinki. The course has been organized twice (2016 and 2017) for group of approximately 50 students.

Method: Students kept stress and sleep diary before the course, attended interactive lectures on physiology and psychology of stress, connections of brain function, sleep and exercises to stress, studying techniques and mindfulness. All lectures included research based knowledge and practical methods. Furthermore, students prepared a group presentation of optional theme and wrote individually a reflective journal. Journals (N=67) were analysed by content analysis.

Results: Students participated course mostly because they had experienced stress during first study year and needed tools for their studies and for future as practitioners. Participants became more aware of their stress symptoms and their helpful and harmful ways of coping with stress. Especially sleep diary and knowledge about sleep and stress gave new insights. Sharing their experiences with peers was felt encouraging and relieving. Active group work empowered students and they highly appreciated peers’ point of views.

Discussion & Conclusions: Students were stimulated by versatile scientific knowledge as well as new practical tools. They started to see stress as a functional reaction that can not be totally avoided, but rather could be used as resource. A framework which combines physiological, psychological and social aspects of stress helps medical students to understand the emotions that are connected to stress. Furthermore, diverse content gives every student some new coping mechanisms, for example...
mindfulness or, at least, reinforces good, but forgotten habits.

**Take-home message:** Most of the participants were very satisfied with the course and would recommend it to their peers. This interactive course is one way to create a culture that supports healthy stress coping mechanisms at the very beginning of medical school. As one student crystallized: “A doctor who is feeling well is a best resource a patient can have”.

### 9JJ7 (3432)
**Applicability and Validation of the Reaction to Test Scale (RTT) in a sample of Portuguese medical students**

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**Background:** Test anxiety has been a frequent phenomenon in higher education students with consequences on academic performance, interfering specifically with their ability to think and perform during the tests. The objectives of this study were to validate the Reactions to Tests Scale (RTT; Benson et al., 1992) based on the four-factor dimensionality test anxiety of Sarason (1984) and explore its psychometric properties in a sample of Portuguese medical students.

**Method:** In 2017, a sample of 393 undergraduate medical students (62% response rate) completed the RTT scale. The four-factor structure and second order factor of the scale were determined via confirmatory factor analysis. Cronbach’s alpha and composite reliability was used to assess internal consistency. Convergent validity was evaluated through the correlation between RTT and the State-Trait Anxiety Inventory (STAI-Y) and computing the average variance extracted. Gender differences were also analysed.

**Results:** Overall, confirmatory factor analysis supported the four-factor and the second order factor model. Concerning internal consistency, results indicate that RTT was found to be highly reliable (Cronbach’s α = 0.89) to measure test anxiety in this sample. Convergent validity of the RTT with both state and trait anxiety STAI-Y’s subscales was also shown (p<.01) and average variance extracted with acceptable to good values.

**Conclusions:** The results support the validity and reliability of the Portuguese RTT 20-item among medical students and confirm the factor structure of the four-factor model (first order model) and the second order factor model.

**Take-home message:** The RTT 20-item version has proved to be and useful and practical tool to evaluate Test Anxiety among Portuguese medical students.

### 9JJ8 (254)
**The relationship between anxiety and clinical performance among Chinese medical students: a cross-sectional study**

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**Background:** Recently it had been widely reported that some factors could influence clinical performance. It was not well understood to confirm the relationship between anxiety and clinical performance.

The aim of study was to measure the level of anxiety and to evaluate the relationship between anxiety and clinical performance in the Objective Structured Clinical Examination among Chinese medical students.

**Method:** A cross-sectional study was conducted on the fifth year medical students who participated in the examination in 2015. The anxiety levels were measured in recruited student volunteers using the Self-Rating Anxiety Scale (SAS). Clinical performance score was collected from the Objective Structured Clinical Examination (OSCE). SPSS version 20.0 for Windows with a prior set alpha level of 0.05 was used for statistical analyses.

The study took place at the China Medical University. A total of 337 5th year medical students were enrolled in to the survey.

**Results:** 314 Chinese medical students participated in the survey. The percentage of students with high anxiety was 8.9%. Participants’ anxiety showed negative association with clinical performance including interview and physical examination ($r = -0.116$, p < 0.05). Correlation analysis revealed that no relationship between anxiety and clinical knowledge was found ($r = -0.044$, p = 0.437).

**Conclusions:** There are still some of anxiety among medical students, which could negatively affect clinical performance. More attention should be given to anxiety with the aim of improving clinical performance among the medical students in China.
Method: The electronic questionnaires were sent to 91 undergraduate clinical year medical students in 2017 to gather information about characteristics of the preferred meditation course. Questions include the willingness to join the course, positive factors affecting meditation practice, preferred teaching styles and meditation techniques.

Results: Of 91, 67 (73.6%) completed the questionnaires. Results showed that 62 (68.1%) were willing to join the course for improving their mental health. All of them agreed that learning both theory and practice using interactive study would help them gain more applicable knowledge. The variety of meditation postures and techniques were mentioned by the students. In addition, sitting, lying and walking were the top three preferred meditation postures while awareness of breathing and open-monitoring meditations were the top two meditation techniques they preferred.

Conclusions: It is seen that meditation course is of students’ interest, with some details of the programme being noted. To meet the needs of the students, the proper meditation course should consist of both interactive theoretical part and practical training. This is as provision of theory would inform the principles of meditation practice that could help the students choose their own preferable meditation techniques under instructors’ supervision.

Take-home message: The interactive theoretical teaching and practical training seems to be a proper teaching method of meditation for medical students.
9JJ11 (1732)
Disillusionment in medical education: An exploratory study

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Background: Although associated with work attrition and burnout literature, disillusionment or the "... feeling of disappointment, akin to depression, arising from the realization that something is not what it was expected or believed to be, possibly accompanied by philosophical angst from having one's beliefs challenged" has been little studied in medical training. In this study we explored the experience of disillusionment in medical training.

Method: An exploratory qualitative methodology using focus group discussions (FGD) was employed. Participants were recruited by email. A total of 5 FGDs (n=39) comprising medical students from 2 preclinical (MS1 and MS2, n=15) and 3 early clinical (MS3 and MS4, n=24) FGDs were conducted. The experience of disillusionment in medical training was discussed using a semi-structured guide. Discussions were audio-recorded, transcribed, and independently analysed for themes and subthemes by a family physician, a nurse educator, and a medical educationalist.

Results: Four themes emerged: (i) Mismatched expectations: disillusionment occurred when reality challenged pre-existing expectations and meaning perspectives. This fueled (ii) uncertainty about role and purpose in the world of medicine. (iii) Resilience factors were marshalled through self-reflection and enlisting the psychosocial support system. Mentors exemplified patient-centredness despite pressures to do otherwise. This could lead to (iv) personal growth in the form of deeper self-awareness and strengthened resolve in medical training.

Discussion: Medical training does well to prepare students for the unexpected inherent in medical practice. Transformative learning theory (TLT) informs us that "disillusionment" may be understood as a "disorientating dilemma" that cascades transformative learning. Illeris posits that this in fact affects the identity of the learner. Students described how meaningful purpose gave reason to endure self-deprivation in the course of duty, and mentors showed how it was possible.

Conclusions: Finding meaning in the care of patients fortifies students in their resolve to endure difficulties in the process of medical professional identity formation. We train learners for this capability by encouraging critical self-reflection and providing a platform for support and discourse on their experience.

9JJ12 (232)
Perceived Stress, Severity and Sources of Stress among Female Medical Students in a Private Medical College in Pakistan

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Background: The prevalence of stress is common among medical student, and this emotional distress influences their performance in class, in clinical rotations and have an adverse impact on their social life. The aim of our study was to investigate apparent stress, severity and sources of stress among female medical undergraduate students in a private medical college in Pakistan.

Method: In this cross-sectional, questionnaire-based study, a total of five hundred and ten (510) female medical students from first year to final year were included. The study was carried out at University Medical and Dental College, Faisalabad, Pakistan from August to December 2017. The data were analyzed with SPSS 21.

Results: Out of 510 female students 138 (27.1%) were from 1st year, 153 (26.1%) from 2nd year, 83 (16.2%) from 3rd year, 117 (22.9%) and 39 (7.6 %) students were from fourth and final year respectively. Among all the participants, 15 (2.9%) were married, and 495 (97.1%) were unmarried. The majority of students was living in hostel 318 (62.4%) and 192 (37.6%) were day scholars. Students belonging to urban and rural areas were 435 (85.3%) and 75 (14.7%) respectively. Overall mean perceived stress was 34.37±8.23. Logistic regression analysis showed that stressed cases were related with the incidence of academic related stressors (Odds Ratio 2.93, 95% CI 1.78-7.14) and psychosocial stressors (Odds Ratio OR 4.85, 95% CI 2.37-9.87). Most frequent stressors stated by respondents were, ‘raised parental expectations’, ‘frequent examinations’, ‘living condition in the hostel’, ‘sleeping difficulties’, ‘anxiousness about the future’, ‘quality of food in mess’, ‘accommodation away from home’ and most of these were rated as severe.

Conclusions: This study showed higher levels of stress among our participants. The academics and psychosocial were the major stressors. Medicine is a difficult field and start of study in medical school is a stressful phase in life due to hard education tenure, separation from family, friends and surrounding attachments.

Take-home message: It is important to teach students to cope up this stress as continuous stress has unpleasant effects on student’s academic record, health and physical fitness.
9JJ13 (3587)
Long-term peripheral placements, social isolation, and mental health. What does this mean for medical students?

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Background: Depression and suicidal ideation amongst medical students is increasingly prevalent with hierarchical structures, a competitive environment, and social isolation playing pivotal roles. Within this critical context, modern medical curricula are increasingly adopting long-term peripheral placements, whereby students can be moved away from central sites (and support systems), for months at a time.

As students from GKT School of Medical Education, year-long peripheral placements have also been propositioned as part of Curriculum 2020. We are concerned about the social isolation this could cause, and the consequential impact on mental health.

Method: To understand the impact of long-term peripheral placements on students’ mental health, we undertook a literature review using the Web of Science. Key terms such as ‘peripheral placements’, ‘mental health’, and ‘medical education’ helped us to identify recurring themes and key factors. A scoping search focussed on high-impact publications.

Results: Students who undergo long-term peripheral placements experience higher levels of social isolation, which is associated with depression. They are also less likely to access mental health services. Otherwise, there is limited research on the impact on students’ mental health.

Conversely, many positive educational consequences are reported; from improvements to rural healthcare provision and increases in medical students’ competency levels.

Discussion/Conclusions: It is worrying to see that peripheral placements lead to social isolation. Before introducing them, medical educators should address the gap in literature by exploring the impacts on students’ wellbeing—especially considering the stressful nature of the jump from pre-clinical to clinical years. Preventive measures should be put in place. The one-sidedness of research, with focus on academia, is concerning. This suggests that educators prioritise academic success over student wellbeing, despite the gravity of 11% of medical students reporting suicidal intent. Do educational advantages outweigh the negative impacts on mental wellbeing?

Take-home messages:
• Long-term peripheral placements have benefits on educational elements of clinical training.
• Medical students report increased social isolation on long-term peripheral placements.
• Social isolation is associated with depression.

9JJ14 (1890)
The Mediation of Medical Student Trait-Affect and Resilience with Trait-Emotional Intelligence

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Background: The challenges of medical school can precipitate a multiplex of emotional responses from medical students which can result in emotional exhaustion.¹ Emotional intelligence (EI) can regulate these emotional responses known as trait-affect (TA);² but the impact of EI and TA on positive psychological outcomes such as student resilience is still being examined.³ While TA, EI, and resilience are interrelated, the specific trivariate relationship has yet to be fully rendered.

The purpose of this study is to analyze the mediator effect of medical student trait-emotional intelligence on the relationship of trait-affect and resilience.

Method: In spring 2017, 124 of 500 medical students (62 male/62 female; 80 M-1/44 M-2) completed the 30-item Trait Emotional Intelligence Questionnaire ((TEIQue)) (1=completely disagree/7=completely agree), 60-item Positive and Negative Affect Schedule (PANAS-X, scale=1=very slightly/not at all/5=extremely), and 25-item Resilience Scale (scale=1=strongly disagree/7=strongly agree). Single-sample t-tests compared differences in mean scores. Pearson (r) correlations and stepwise multivariate linear regressions used for predicting resilience from EI and TA. Inter-item reliability determined with Cronbach alpha. IBM® SPSS® 24.0 generated statistical analysis. This study was IRB approved.

Results: Resilience scores (mean (sd)=145 (15)) were significantly (p<.001) higher than the scale’s mid-point=100 (range=25-175). EI scores (mean (sd)=151 (25)) were significantly (p<.001) higher than the scale’s mid-point=120 (range=30-210). The correlation of overall resilience (alpha=0.89) and EI (alpha=0.69) is r=0.5 (p<.001). Resilience is significantly (p<0.050) correlated to 52/60 (87%) TA items; EI is significantly correlated to 46/60 (77%) TA items.

The linear regression of resilience on TA (R²=0.57, p<.001) yielded five significant predictors: determined (beta=0.3), active (0.3), bashful (0.2), nervous (-0.2), disgusted w/self (-0.3).
The linear regression of resilience on EI and TA ($R^2=0.26$, $p<.001$) yielded two significant predictors: active (0.4), disgusted w/self (-0.3).

**Discussion & Conclusion:** Medical student resilience and trait-emotional intelligence scores were high, and significantly correlated to each other and most trait affect items. Five trait-affect elements significantly predicted resilience, but being determined, nervous, and bashful were mediated by emotional intelligence.

**Take-home message:** Trait-emotional intelligence relations with trait-affect and resilience makes it possible to mediate the impact of medical student’s emotions on their resilience.

9JJ15 (1712)
**The comparison of stress level among students in engagement of surgery and non surgery clinical rotation**

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**Background:** The growing debate regarding stress level of students in the clinical rotation at medical program has been receiving considerable attention recently. Medical students face numerous stressors during their clinical years, including difficult clinical events. The greater differences environments and work load compared to undergraduate contribute to increasing stress, especially when the students enter surgery clinical rotation. Our objective was to specifically studied the comparison of stress level among them when they engaged in surgery or non surgery.

**Method:** A cross sectional descriptive analytic study was carried out on all students in surgical fields (obsgyn, surgery) and non surgical fields at the 3 Teaching Hospitals of Universitas Muhammadiyah Yogyakarta after one month discharge from their rotation. Level of stress was measured by DASS 21 after modified. The subjects consisted of 24 students in each groups.

**Results:** Data analyzed with independent T-test. There were significant differences between two groups ($p: 0,001, 95\% CI:11,12-14,32$). In surgical group 10% students had severe depression with serious anxiety and average stress level, 5% had mild depression with average anxiety. In non-surgical group there was no student with severe depression. Only 5% have mild depression with mild anxiety.

**Discussion & Conclusion:** Students experienced many difficult clinical events and poor team dynamics most stressful. This is likely due to their role in the hierarchy, stress of evaluation, and vulnerable position as a medical student especially in surgical group. Students were not stress because of the patient care rather than the new environment and night shift everyday during ten weeks of their rotation. They did not perceive medical errors or patient care events as stressful given their lack of autonomy and they don’t yet feel responsible for patient care.

**Take-home messages:** Surgical group had effects on stress level compared to non-surgical group. Stress level among students in surgery clinical rotation should be emphasized as attention in medical education.