



Student stress, burnout and health in the Medical Faculty, University of Tartu

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on OH&S: From polices to practice

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Academic excellence since 1632

About 200 medical students get graduated in every year

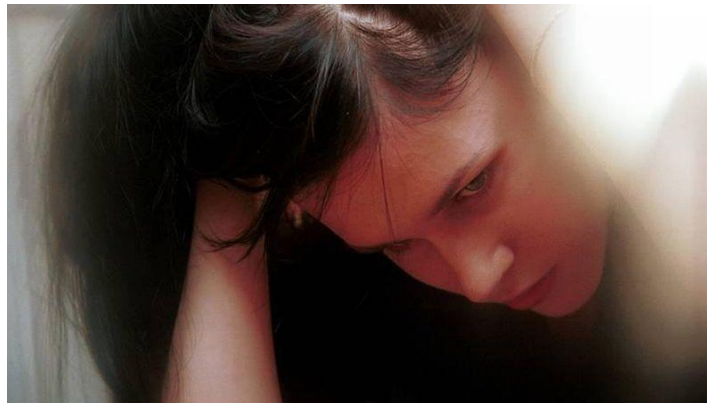
The University of Tartu today

- 9 Faculties
- 5 Colleges
- Students: 17,492
- Total staff: 3,513
- 3 Museums
- Botanical Garden
- Library: 3.8 mln items
- Budget: 130 MEUR
- In top 600 of world's leading universities
(THES 2009 World University Rankings)



Study background 1

- There is evidence that mental distress during academic years predicts health problems and even increased risk of suicide among physicians in later practice (Firth-Chozens, 1998, Tyssen, et. al., 2001) and negatively affect patient care (Firth-Chozens, Greenhalgh, 1997).
- Stress is correlated to physical morbidity (Park, Adler, 2003, Saikh, Deschamps, 2006).



Study background 2

McManus, Winder, Gordon, 2002, McManus, et al., 2005

- Burnout and stress are common problems in health care workers. Emotional exhaustion and stress have reciprocal causation. Even academic achievement is not a predictor of satisfaction.

Law, 2007

- Coursework amount is a predictor of emotional exhaustion.

Moffat, et al., 2004, Tyssen, et al., 2001

- Stress arouses feelings of incompetence, fear, anger and guilt and associated with mental dysbalance.

Eller, et al., 2006, Kjeldstadli, 2006, Biro, et al., 2010

- When to compare with general population, higher burnout, anxiety and depression, more sleep disorders and lower life satisfaction have observed among medical students.

Aim of study

- To assess subjective health, stress and burnout among medical students
- To analyse the dynamics of health indicators during the first three study years in the Faculty of Medicine, University of Tartu
- To find gender differences of stress, burnout and health indicators
- To analyse relationships between stress, burnout and health

Method 1

Time: 2010 autumn – cross-sectional study

Study group: medical students of the 1st, 3rd, 5th semester

Instrument: anonymous standardised self-administered questionnaire

- Demographic data – age, sex, marital status, children, work+study
- General stress & health status
- Motivation to study medicine and pass all exams
- Subjective Well-Being
 - Positive and Negative Affect: The PANAS Scales (Watson et al., 1988)
- Subjective Health
 - General Health Questionnaire (Goldberg, 1992)
 - Symptom Check List (von Zerssen, 1976)
- Maslach Burnout Inventory (Schaufeli et al., 2002)

Statistical analysis

- Descriptive data, frequency tables
- Student T-test
- Chi-square test
- Spearman Correlation Analysis



Results

Average response rate: 58,4% (589 / 344)

1sem - 48% 3sem - 51% 5sem - 71%

Study group

Speciality: 82% medicine, 10% dentistry, 8% pharmacy

Age: average 20,8 ($\pm 1,9$); 18-34 years

Sex: M 30% F 70%

Nation: 73 % Estonians, 19% Russian, 4% Finnish, 4% other

Marital status: 57% single, with partner 42%, married 1%

Work & studies: 82% only studying, 18% work+studies

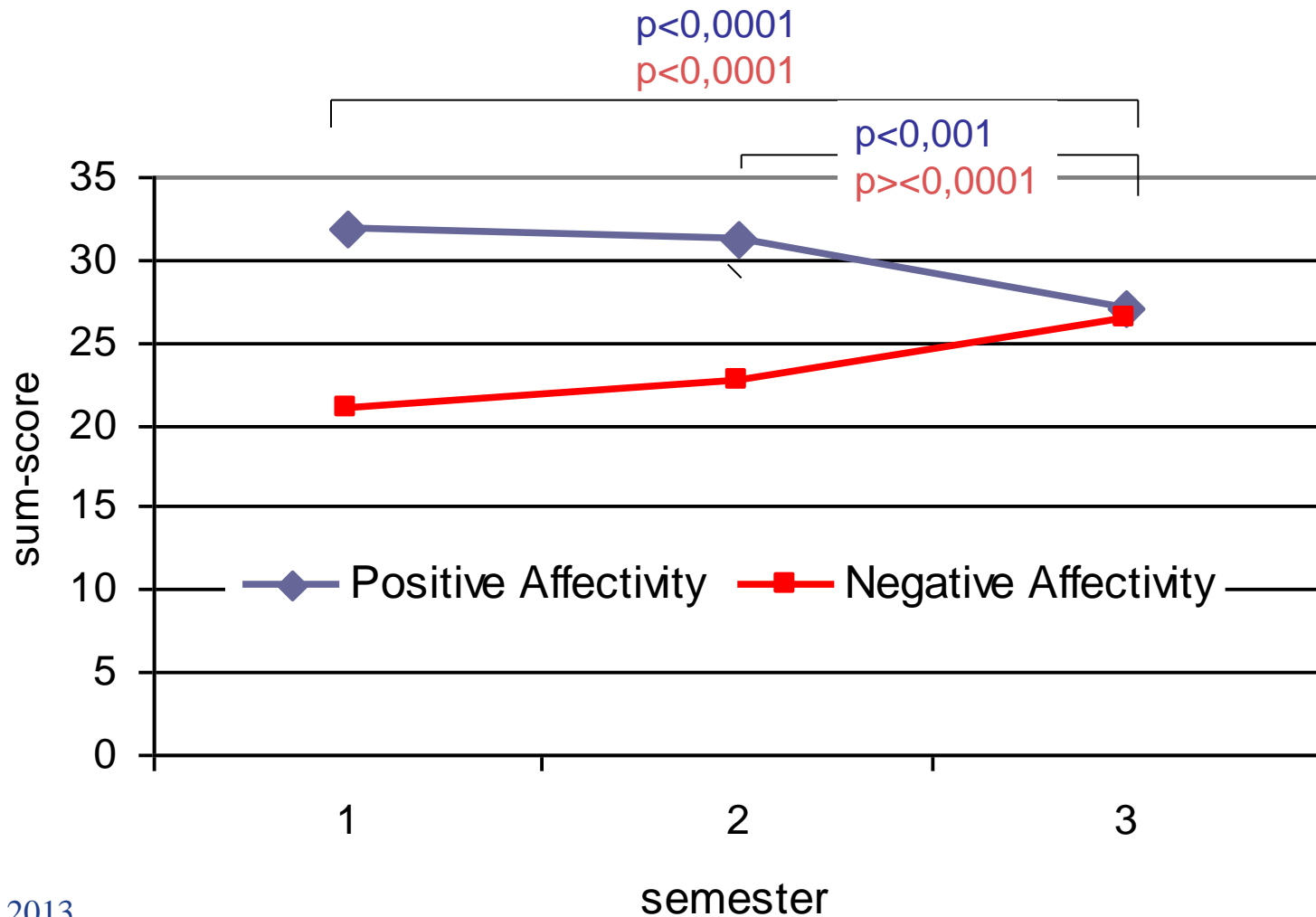
Average stress on 10-p scale: 6,1 ($\pm 2,2$); (63% ≥ 6 p)

Average health state on 4-p scale: good 2,0 ($\pm 0,7$)

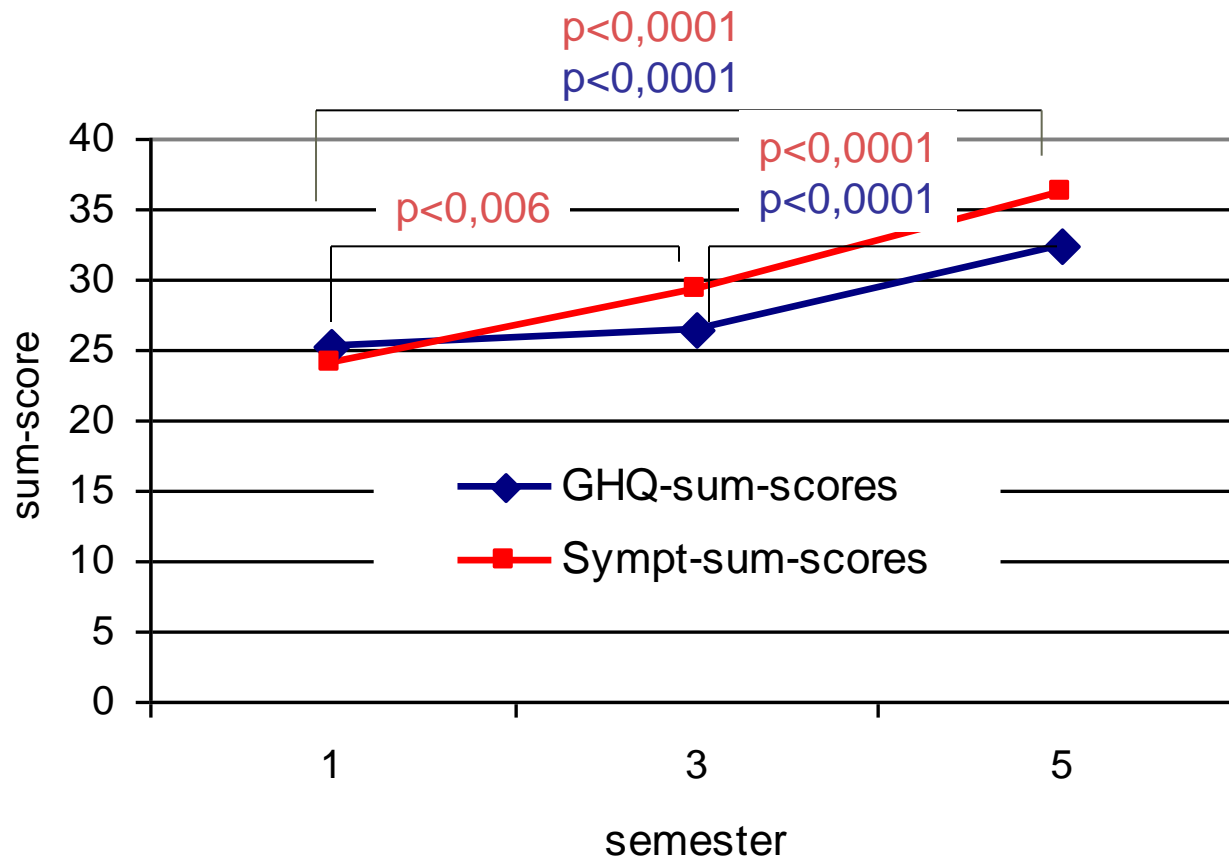
Stress, health, motivation & confidence

	1st sem	3rd sem	5th sem	Sem	p
General average				1-5	0,000
stress level	5,32	5,81	6,74	3-5	0,001
<i>*General average</i>				<i>1-5</i>	<i>0,000</i>
<i> health status</i>	<i>1,83</i>	<i>1,93</i>	<i>2,22</i>	<i>3-5</i>	<i>0,003</i>
Motivation to				1-5	0,01
study medicine	3,81	3,93	3,48	3-5	0,001
Confidence to				1-3	0,008
pass all exams	3,93	4,28	3,59	1-5	0,026
				3-5	0,000

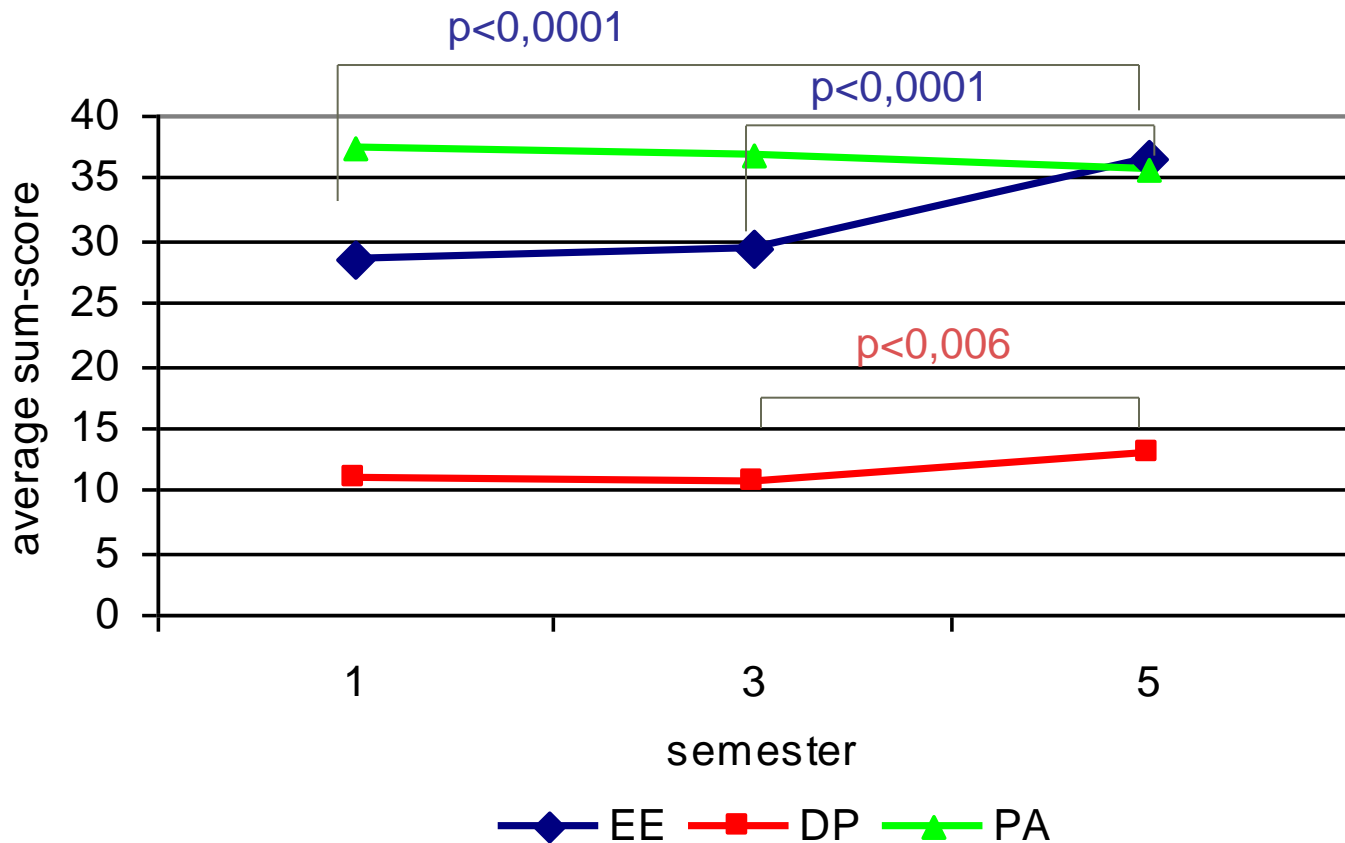
Dynamics of Positive and Negative Affectivity



Dynamics of general health & symptom scores



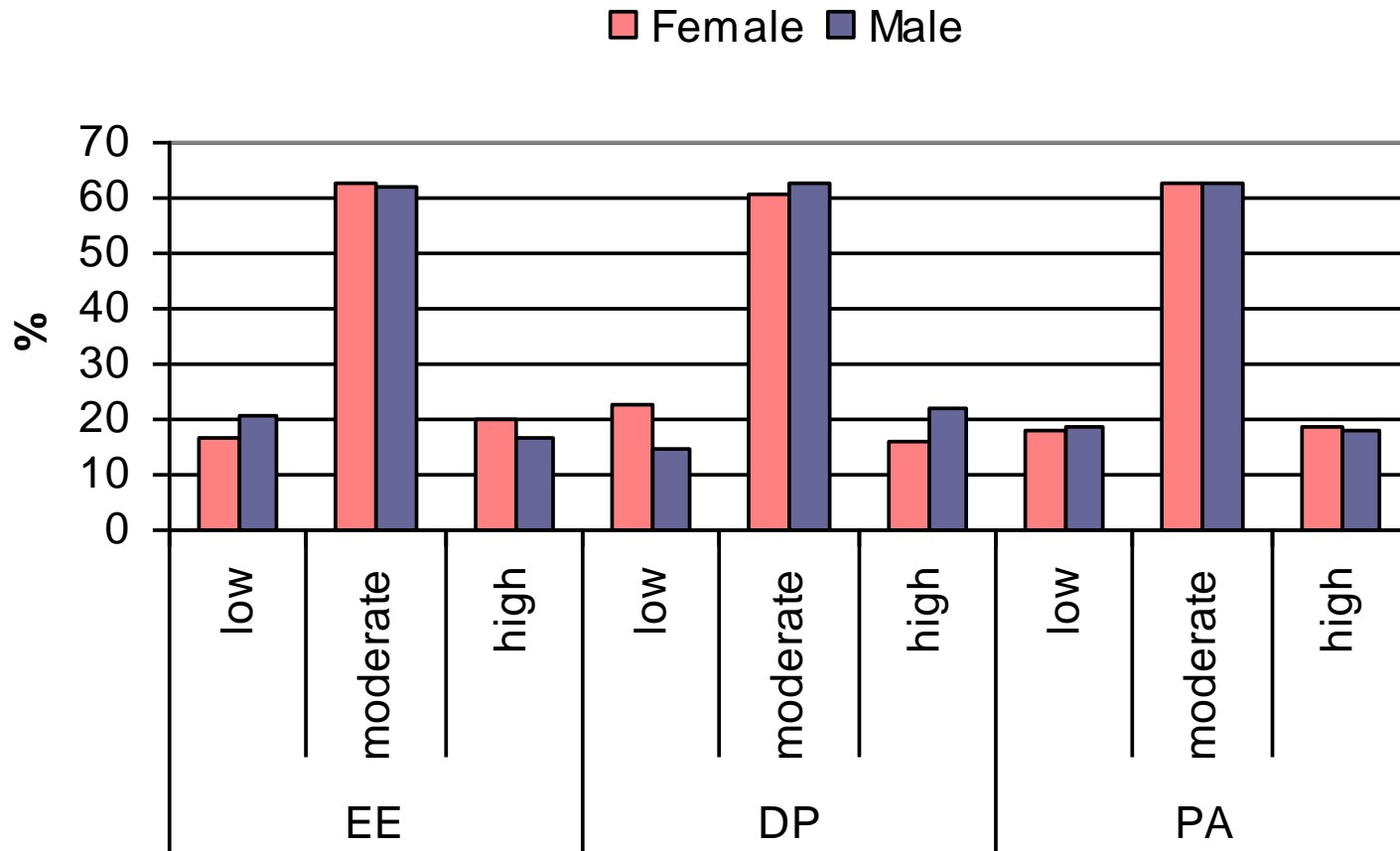
Dynamics of burnout indicators



Health, burnout and gender

Sum-score	Male		Female		p
	Mean	SD	Mean	SD	
Positive Affectivity	29,6	6,3	29,5	7,1	-
Negative Affectivity	22,5	7,2	24,4	8,3	0,04
GHQ-12	27,6	7,1	29,3	7,7	-
Symptom Checklist	24,3	13,0	33,5	14,6	0, 000
Emotional Exhaustion	31,3	10,0	32,8	10,4	-
Depersonalisation	12,8	5,4	11,4	5,4	0,02
Professional Accomplishment	36,1	7,5	36,6	7,2	-

Burnout levels and gender



Relationships between stress, health, burnout and motivation

	health	ee	dp	pa	gempos	gemneg	GHQsum	bl_sum	mo_stud	mo_exam
stress	.373**	.601**	.298**	-.242**	-.436**	.593**	.612**	.537**	-.133*	-.250**
health		.412**	.260**	-.285**	-.371**	.395**	.391**	.499**	-.218**	-.262**
ee			.590**	-.412**	-.501**	.655**	.687**	.687**	-.365**	-.410**
dp				-.479**	-.340**	.468**	.405**	.422**	-.313**	-.241**
pa					.469**	-.396**	-.375**	-.325**	.338**	.260**
gempos						-.432**	-.601**	-.455**	.297**	.344**
gemneg							.737**	.692**	-.257**	-.339**
GHQsum								.685**	-.261**	-.359**
bl_sum									-.264**	-.352**
mo_study										.267**

* p<0,05 ** p< 0,01

Summary 1

- Medical students assessed their average stress level moderate and average health status as good
- During the **first** and **fifth semester** the indicators showed significant changes
 - the level of stress increased
 - general health status worsened
 - positive affectivity decreased and negative affectivity increased
 - motivation to study medicine diminished
 - self-confidence to pass successfully all exams decreased
 - the higher average sum-scores of EE and DP were measured on the fifth semester of studies.

Summary 2

- Gender differences observed
 - the higher symptoms scores and worse health reported by the women
 - the higher cynicism but lower negative affectivity was measured by the men
- Strong relationships between stress, burnout, health, motivation and self confidence to pass exams observed



Conclusions

- The results confirm the last research on student stress, health & BO.
- More attention need to pay on health status of medical students.
- Stress prevention programs need to be introduced for students.
- Psychological advisoring could be more accessible for students.
- Curricula, teaching methods and work load need the correction in the faculty of medicine, UT for prevention of student stress and burnout.



Thank you for attention!