

Stress symptoms, burnout and suicidal thoughts of Finnish physicians

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The objective of this study was to answer the following questions: (i) do different groups of specialists experience stress and burnout differently and do specialists differ from nonspecialists in this respect, (ii) are there any differences in stress symptoms and burnout in relation to main employment position, and (iii) how many physicians have had suicidal thoughts, and are there differences in this respect between specialties, between specialists and nonspecialists, and between main employment positions?

Subjects and methods

The subjects for this study were selected from the register of the Finnish Medical Association, which in October 1986 had 11 386 licensed physicians as members. Of these, 10 479 met the following criteria: (i) permanent residence in Finland, (ii) under 66 years of age, (iii) not receiving a disability pension, (iv) fully licensed. Every third physician was randomly selected from this group, producing a subgroup of 3496 physicians representative of all active physicians in Finland with respect to age, gender, specialization, and employment.

A questionnaire containing 99 questions or groups of questions was sent to all of the selected physicians with a letter describing the objectives of the study. Total anonymity was assured. The questionnaires contained no identification code. Altogether 2671 physicians (76%) responded. The final sample was considered adequately representative of the Finnish medical profession, as was the distribution of specialists among the various specialty categories.

Stress symptoms were measured with a stress symptoms score, burnout with a burnout index, and suicidal tendencies with a suicidal tendency index (1).

Results

The stress scores showed no significant variation between specialties for either the men or the women. In

contrast, the mean burnout index exhibited significant variation between specialties for both genders (tables 1 and 2). For main employment position, the highest scores of the burnout index were observed for health centers for both genders and both age categories (≤ 40 years of age and > 40 years of age) (table 3). Men in other out-patient units also had high scores, as did women aged 40 years or less. The burnout index for male physicians fell into three main categories. They

Table 1. Burnout indices of the men by specialty.

	N	Mean	SD
Specialists			
Pediatrics	30	24.60	4.09
Obstetrics and gynecology	62	24.63	4.45
Clinical laboratory specialties ^a	35	24.71	4.54
Otolaryngology and ophthalmology	62	25.02	3.84
Anesthesiology	42	25.43	3.95
Neurology, child neurology	24	25.54	4.37
Surgery, neurosurgery, physiotherapy	145	25.60	4.60
Radiology	50	25.80	4.68
Internal medicine, oncology and radiation therapy, pulmonary diseases, dermatology and venereology	164	25.99	4.45
Psychiatry, child psychiatry	65	26.57	4.59
General practice, occupational health	153	26.84	5.04
All specialists ^b	832	25.79	4.60
Nonspecialists			
≤ 30 years of age	202	27.67	4.66
> 30 years of age ^c	405	27.2097	4.73

^a Clinical chemistry, microbiology, neurophysiology, pharmacology and physiology, pathology, and forensic medicine.

^b Analysis of variance: $F = 2.77$, $P < 0.01$.

^c Difference between specialists and nonspecialists aged > 30 years: $t = 5.09$, $P < 0.001$.

Table 2. Burnout indices of the women by specialty.^a

	N	Mean	SD
Specialists			
Obstetrics and gynecology	30	24.33	3.19
Otolaryngology and ophthalmology	26	24.81	4.18
Surgery, anesthesiology	38	24.87	3.61
Psychiatry, child psychiatry	50	26.48	4.11
Pediatrics, child neurology	56	26.68	3.72
Internal medicine, neurology, pulmonary diseases, dermatology and venereology	76	26.75	5.00
Radiology	21	27.00	4.57
General practice, occupational health	63	27.82	5.28
All specialists ^b	360	26.36	4.53
Nonspecialists			
≤ 30 years of age	256	29.39	4.46
> 30 years of age ^c	382	27.97	4.59

^a Clinical laboratory specialties (N = 7) excluded.

^b Analysis of variance: $F = 3.01$, $P < 0.01$.

^c Difference between specialists and nonspecialists aged > 30 years: $t = 6.21$, $P < 0.001$.

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Table 3. Burnout indices of the men and women by main employment position and age.

Employment position	Men ^a						Women ^b					
	≤ 40 years of age			> 40 years of age			≤ 40 years of age			> 40 years of age		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Central hospital	220	26.92	4.35	116	24.97	4.70	139	27.88	4.79	47	25.11	3.79
Other hospital	223	26.66	4.13	229	25.65	4.34	176	27.39	4.44	64	27.64	4.28
Health center hospital	21	26.19	3.46	25	26.16	4.65	24	27.04	4.22	16	26.31	4.90
Health center	249	28.33	5.02	79	27.51	5.53	282	29.28	4.99	56	28.36	4.46
Other outpatient unit	74	28.09	4.73	51	26.18	4.84	49	28.25	5.11	27	26.41	3.56
Private practice	37	24.95	4.27	47	23.30	3.74	42	25.83	5.58	46	25.24	3.53
University, research institute	49	25.39	4.09	32	24.41	4.28	23	24.57	3.13	13	25.00	2.94
Public office, organization, other	22	24.36	3.89	27	24.07	4.43	14	26.93	5.61			
Total	895	27.07	4.58	606	25.51	4.69	749	28.05	4.93	269	26.61	4.21

^a Analysis of variance for the men: $F = 6.66$, $P < 0.001$; $F = 4.82$, $P < 0.001$.

^b Analysis of variance for the women: $F = 6.39$, $P < 0.001$; $F = 4.76$, $P < 0.001$.

were highest in health centers and other out-patient units, second highest in hospitals, and lowest in private practice, universities, research institutes, and public offices and organizations. A similar tendency was also found for the female physicians. The differences between the groups were highly significant.

When all levels of suicidal intent were taken into account, 22.1% of the male physicians and 25.9% of the female physicians ($P < 0.05$) had contemplated or attempted suicide at some time or other (table 4). There was no marked difference in suicidal intent between the specialists and nonspecialists. The highest suicidal tendencies among the men occurred in psychiatrists (31%), neurologists (30%), general practitioners and specialists in occupational health (29%), and anesthesiologists (27%). Among the women the highest suicidal tendencies were found for radiologists (43%) and psychiatrists (33%). The differences were not, however, significant for either the men or the women. There was no difference in the relation to main employment position for either the men or the women.

Concluding remarks

The following conclusions can be drawn from the present study:

1. In Finland, stress symptoms of male physicians are similar to those of male managers. There are slightly fewer stress symptoms among female physicians than among female white-collar workers. No significant differences in stress symptoms occur between specialties or between main employment positions among Finnish physicians.
2. Among male physicians the highest burnout scores are found for men in general practice and occupational health; psychiatry and child psychiatry; and internal medicine, oncology, pulmonary diseases, and dermatology and venereology. Among female

Table 4. Suicidal tendencies of physicians (answers to the question "Have you ever considered, seriously planned or attempted suicide?")

Response	Men		Women	
	N	%	N	%
Never	1232	77.9	787	74.1
Considered it	323	20.04	255	24.0
Seriously planned it	17	1.1	14	1.3
Attempted it	10	0.6	6	0.6
Total	1582	100.0	1062	100.0

$\chi^2 = 4.80$, degrees of freedom = 1, $P < 0.05$.

physicians the highest burnout scores are found for women in general practice and occupational health; radiology; and internal medicine, neurology, pulmonary diseases, and dermatology and venereology. Nonspecialists have higher burnout scores than specialists among both the men and the women.

3. The physicians with the highest burnout scores are found in health centers (mainly general practitioners and nonspecialists) for both genders. Those working in private practice, universities, research institutes, public offices, and organizations have the lowest burnout scores. The burnout scores of those working in hospitals generally fall between the scores of the those with the highest and lowest burnout scores.
4. Tendencies towards suicidal thoughts are high among physicians, especially women. There are no significant differences between the main employment positions.
5. The results to some extent indicate polarization between "higher burnout specialties," often dealing with chronic, incurable or dying patients, and "lower burnout specialties," dealing with nonlife-

threatening diseases with more favorable prognoses. General practice and occupational health seem to be high burnout specialties with heavy work loads, hectic work tempos, and problems with professional identity.

References

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