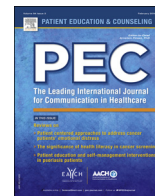




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Parent being a physician: Any influence upon job stress in young physicians? A Norwegian prospective and longitudinal cohort study

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ABSTRACT

Objective: To investigate whether being the child of a physician would be of importance for how young physicians experience job stress.

Method: In a national representative prospective and longitudinal study with five assessment points (NORDOC), young physicians were followed over twenty year after graduation from medical school.

Results: Female physicians with a physician parent reported higher levels of job stress over the whole period compared with males with a physician parent. This gender difference did not occur within the group without a physician parent. Male young physicians showed a trend (not quite significant) to be less stressed than their peers without a physician parent. Women physicians were overrepresented in a group with persisting high stress level over the period.

Conclusions: Male physicians with physician parent reporting lower stress levels than their female peers can be interpreted as a consequence of male physicians having more male models during their first working years as the main proportion of older physicians still are men. A father-son relationship may also promote an easier way to lower stress and achieve an identification with the role of doctor than for the females with a father-daughter relationship. With the increasing number of female physician, this gender difference may be prone to changes over time.

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1. Introduction

Coping with the performance as a physician has been found to influence level of perceived job stress in medicine [1]. Reasons for such stress can be due to both individual and contextual factors. One individual factor, which has been poorly explored, is the possible relationship between perceived job stress and the physician being a son or a daughter of parents who also are physicians. In Norway, about 15–20% of each cohort of medical students usually has one or both parents being physicians.

Theoretically, there are three possible relationships between being a physician's child and level of perceived job stress. One could be that young physicians with a physician parent will be more "robust" when entering the medical field as they will more easily identify with the role of doctor [2], and they may be better prepared through personal experiences with their parents' way of

handling challenges and distress in their work. If so, they should, compared with other students, report less job stress in their work as a physician. Another possibility is the other way around: having a physician parent may increase a fear of failure, of not living up to parents' expectations and thereby increase the experienced job stress more than other young physicians. A third possibility could be that, on a group level, such a family condition may increase perceived job stress in some and decrease it in others and thereby the relationship with job stress will be nullified.

If any influence from having a physician parent should occur, we would expect the strongest influence around leaving medical school, less strong during the years of specialization and minor, if any, influence at all when the young physicians are established in a self-chosen specialty (usually 10 years after graduation).

The proportion of women in medicine has been constantly increasing over the last couple of decades. In Norway, around 75% of the annual cohort of students is now females. An interesting question is whether having a physician parent will have different impact upon woman and men as they are about finishing their medical school and further throughout the first 20 years of their career. As they are entering a traditionally masculinized profession, a possibility could be that job stress will be more pronounced

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among women experiencing higher demands, internalized in themselves, derived from their intra-familial (father-daughter) relations, and from the established medical milieu, compared with their male peers with a father-son background.

The NORDOC study [3] is a prospective longitudinal national representative cohort study following the same individuals from leaving medical school, and then consecutively every fifth year up to 20 years after graduation. In the present study, based on data from this study, we have raised the following research questions:

1. Do young physicians with physician parent report less job stress from leaving medical school, and further up to the 20th postgraduate year than those without physician parent?
2. a) Does level of perceived stress differ between female and male young physicians with a physician parent? b) Will the same differences occur among those without a physician parent?
3. Within the group with physician parent, is there a subgroup which has a higher level of stress than the others?
4. Will any possible relation between perceived stress and parent being physician be moderated by neuroticism?

2. Method

The NORDOC is a longitudinal study of a national representative cohort of medical students assessed when leaving medical school (T1), and then followed every fifth year (T2-5 years, T3-10, T4-15) up to 20 years (T5) after graduation, in this connection called "young physicians". The response rates varied between 75% and 55% Mean age 27.8 (2.8) years and sex distribution 56% women and 44% men. At T1, 16.5% (N=87) reported having a physician father and/or mother. For convenience, we have used the term "physician parent" in singular as only six participants had a physician mother without a physician father.

2.1. Instruments

Perceived Medical School stress (PMSS, developed by Vitaliano et al. [4] and modified by Bramness et al. [5] has previously shown good reliability and validity [5]. This instrument with 13 items and a 5-point scale ranging from 1 = low stress to 5 = high stress. were used for assessing stress at the time close before graduation from medical school, In the present sample, Cronbach's alpha was 0.79.

Job Stress Questionnaire (JSQ-43) developed by Cooper et al. [6], modified by Tyssen et al. [1] was used for the consecutive assessments, 43 items, scale 1 = low stress to 5 = high stress. In this data set, Cronbach's alpha varied between 0.95 and 0.77.

Sex was coded: Women = 1, Men = 2, age in years as a continuous variable, physicians parent; yes = 1, no = 0.

Neuroticism was assessed with Basic Character Inventory (BCI,), nine items yes = 1, no = 0, sum-score used [7].

2.2. Statistics

Means, Cross-tabulations, One-way Anova, Univariate Analysis of Variance, K-mean Cluster, based on stress level scores at the five assessment points; in SSPSS 22.0.

3. Results

A remarkable decline in stress-level occurred over time both among women and men with and without physician parent, effect sizes amounting up around 1.4. Women with a physician parent had the "lowest" effect size of 1.10.

In the whole cohort, there was no difference between young physicians with and without physician parent in perceived stress at the five assessment points. When investigating each gender groups separately, no difference was detectable among females. Among men, there was a trend as those who had a physician parent were less stressed at school termination (F=3.47, p=0.065) and five years later (F=3.70, p=0.059) compared with those without a physician parent. At 10, 15, and 20 years later, there was no difference.

When investigating levels of stress between the groups of parent and non-parent physician (Table 1), there was a trend towards women in the parent physician group reporting higher levels of perceived stress throughout the period, while men with physician parent report lower levels of stress over the time span. This trend is supported by results from an Univariate Analyses of Variance, in which gender and parent physician or not was entered as an interaction variable in the equations. At T2 (five years after graduation), this interaction effect upon stress was close to significant (F=3.71, p=0.056), and at the T5 assessment (20 years after) the interaction effect was significant (F=4.40, p=0.038).

Within the subgroup with a physician parent, we found a persisting higher stress level in women compared with men over all assessments, except at the 10-year (T3) assessment (Table 1). Within the group with no-physician parent(s), no such gender difference occurred except at T3 when women also reported higher level of job stress than men.

The results were not influenced by controlling for neuroticism in the equations.

When exploring trajectories of stress levels over the period of 20 years within the group with physician parent, a typical two-cluster solution emerged. Both groups left medical school with a somewhat lower level of stress than the sample-average stress level (ca. 2.30 vs. 2.50), but ending up differently. The largest group (67%) had a remarkable reduction in stress level (close to two standard deviations) while the smaller group (33%) ended up on the same level at T5 as they started with at T1.

Women were significantly more represented in the group with no decline in stress level over the period (X²=6.91, p=0.009), no age gradient occurred.

Table 1
 Perceived stress levels with gender difference in groups with and without physician parent(s).

	Physician parent(s) N = 87			Non-physician parent(s) N = 527		
	Women 51%	Men 49%	Diff One-way Anova	Women 57%	Men 43%	Diff One-way Anova
T1	2.58 (.54)	2.32 (.49)	F = 5.31, p = 0.024	2.53 (.52)	2.51 (.54)	F = 0.75 n.s.
T2	2.42 (.53)	2.05 (.31)	F = 11.54, p = 0.01	2.30 (.59)	2.24 (.52)	F = 0.27 n.s.
T3	2.16 (.51)	1.93 (.47)	F = 3.65, (p = 0.061)	2.08 (.58)	1.96 (.48)	F = 4.60, p = 0.033
T4	2.04 (.39)	1.72 (.42)	F = 7.95, p = 0.007	1.88 (.50)	1.86 (.49)	F = 0.18 n.s.
T5	1.98 (.56)	1.69 (.39)	F = 4.66, p = 0.036	1.85 (.55)	1.80 (.48)	F = 0.45 n.s.
Effect size	1.10	1.42		1.32	1.36	
T1-T5 (Cohen's d)						

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