

Burnout and 'stress of conscience' among healthcare personnel

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Abstract

Title. Burnout and 'stress of conscience' among healthcare personnel

Aim. This paper reports a study examining factors that may contribute to burnout among healthcare personnel.

Background. The impact on burnout of factors such as workload and interpersonal conflicts is well-documented. However, although health care is a moral endeavour, little is known about the impact of moral strain. Interviews reveal that healthcare personnel experience a troubled conscience when they feel that they cannot provide the good care that they wish – and believe it is their duty – to give.

Methods. In this cross-sectional study, conducted in 2003, a sample of 423 healthcare personnel in Sweden completed a battery of questionnaires comprising the Maslach Burnout Inventory, Perception of Conscience Questionnaire, Stress of Conscience Questionnaire, Social Interactions Scale, Resilience Scale and a personal/work demographic form.

Results. Regression analysis resulted in a model that explained approximately 59% of the total variation in emotional exhaustion. Factors associated with emotional exhaustion were 'having to deaden one's conscience', and 'stress of conscience' from lacking the time to provide the care needed, work being so demanding that it influences one's home life, and not being able to live up to others' expectations. Several additional variables were associated with emotional exhaustion. Factors contributing to depersonalization were 'having to deaden one's conscience', 'stress of conscience' from not being able to live up to others' expectations and from having to lower one's aspirations to provide good care, deficient social support from co-workers, and being a physician; however, the percentage of variation explained was smaller (30%).

Conclusion. Being attentive to our own and others' feelings of troubled conscience is important in preventing burnout in health care, and staff need opportunities to reflect on their troubled conscience. Further research is needed into how a troubled conscience can be eased, particularly focusing on the working environment.

Keywords: burnout, conscience, emotional exhaustion, empirical research report, Maslach Burnout Inventory, nursing, stress

Introduction

The prevalence of stress-related illnesses such as burnout has increased dramatically in the Western world over the last decade. Studies on the causes and consequences of burnout have emphasized factors such as personality characteristics, work related attitudes, and work stressors. Burnout is particularly a problem among personnel who work in close relationship with people (Schaufeli & Enzmann 1998).

In interviews, healthcare personnel have described, without being prompted, having a troubled conscience when they feel that they cannot provide the good care they wish – and believe is their duty – to give. Experiences of distress emerge when they face a situation with contradictory demands, are hindered from taking action, or act in a way that they consider to be wrong or not good enough (Söderberg *et al.* 1999, Sørli *et al.* 2003). Hardly any studies have investigated consequences of acting against one's conscience among healthcare personnel, although it has been related to high turnover rates and shortages of nurses (Holly 1993). These indications inspired us to investigate the relationship between burnout and 'stress of conscience'. We define 'stress of conscience' as "a product of the frequency of the stressful situation and of the perceived degree of troubled conscience as rated by healthcare personnel themselves" (Glasberg *et al.* 2006, p. 636).

Background

Burnout

Burnout has been conceptualized as a syndrome of (i) emotional exhaustion, i.e. feelings of being emotionally overextended and exhausted; (ii) depersonalization, i.e. cynicism or callous attitude towards others; and (iii) personal accomplishment, i.e. negative assessment of one's competence and work achievements. These three components are included in the Maslach burnout inventory (MBI), originally developed for personnel who do 'people work' (Maslach & Jackson 1981a, 1981b). 'Emotional exhaustion' seems to be highly correlated with general work stressors or demands such as workload (Lee & Ashforth 1996), whereas 'depersonalization' seems to correlate more with patient factors (Prosser *et al.* 1997), and 'personal accomplishment' with individual and personality factors (Janssen *et al.* 1999a, Payne 2001). This three-factor model has been used as a 'gold standard' for many years, and has been both supported and questioned; for example, Kalliath *et al.* (2000) proposed a two-factor conceptualization of burnout consisting of emotional exhaustion and depersonalization. Nevertheless,

Schaufeli and Enzmann (1998) concluded in 1998 that the MBI was used in about 90% of the empirical studies on burnout.

The determinants of burnout are multiple and complex. Maslach and Leiter's (1997) model of burnout focuses on the mismatch between the person and the work in terms of workload, reward, community, fairness and values. High job demands have frequently been associated with strain in health care. However, De Jonge *et al.* (1999) conclude that only psychological job demands seem to be associated with emotional exhaustion. Work stressors related to burnout may be categorized into following groups; (1) high workload and time pressure (Janssen *et al.* 1999a); (2) role ambiguity and role conflict (Kilfedder *et al.* 2001); (3) staff conflicts (Payne 2001); and (4) decreasing autonomy or loss of control (Schmitz *et al.* 2000). Patient-related stressors seem to be less correlated to burnout than stressors such as workload and role conflict (Schaufeli & Enzmann 1998). Nevertheless, exceptions exist; Payne (2001) identified 'death and dying' as a primary contributor to emotional exhaustion in hospice nurses. Interestingly, workload was not linked to burnout. Duquette *et al.* (1994) reviewed over 300 documents on nurse burnout and found that workload, role ambiguity, and lower age were the main correlates of burnout, while hardiness, active coping, and social support were the main buffering factors. Sex is also associated with burnout, since it is predominantly females that are affected; however, the evidence is inconclusive, and the association might simply reflect occupation differences (Schaufeli & Greenglass 2001). The results for age are also equivocal, although it seems that younger employees experience more burnout than their older colleagues (Brewer & Shapard 2004).

While many studies indicate associations between social support and burnout (Tummers *et al.* 2001, Jenkins & Elliott 2004), the results are somewhat inconsistent. This might reflect firstly the variability of the source and the form of social support (Halbesleben & Buckley 2004), and secondly the ambiguity of the relationship, i.e. social support as a direct antecedent or as a moderator between work stressors and burnout. Research into the moderating effect of social support has mostly focused on support from supervisors and colleagues, but has also included support from family.

Burnout has also been associated with personality attributes such as resilience, a kind of elasticity that has been described as 'a positive personality characteristic that enhances individual adaptation' (Wagnild & Young 1993, p. 167), or the ability to bounce back from adversity (Wagnild 2003). Resilience as a contributing factor in burnout has previously been investigated by Zunz (1998) in the context of human service. Similar factors, such as self-esteem (Janssen *et al.*

1999b), hardiness (Duquette *et al.* 1995), and a sense of coherence (Soderfeldt *et al.* 2000), have also been found to be important factors in burnout.

Basis for theoretical assumptions

One seemingly contradictory phenomenon is that high stress can be associated with the importance of one's work, and thus with lower burnout. This has been demonstrated by Malach Pines (2000), who showed that, while nurses enjoyed the days when they had to work the hardest, not being able to help patients was associated with burnout. Malach Pines concluded that when people who enter their work with high goals and expectations feel that they have failed, they start feeling powerless and hopeless, and in time they burn out. Maslach *et al.* (1996) also addressed the impact of having to lower standards of care. Burnout seems to be a result of the gap between, on the one hand, the expectation that one will fulfil one's professional obligations and, on the other, the organization's structure and resources; professional goals such as performing one's work in a meaningful way are important issues for healthcare personnel. Value conflicts have also been found to interact with burnout (Siegall & McDonald 2004). In a review, Leiter and Harvie (1996) concluded that burnout results when excessive demands hinder personnel from attending conscientiously to patients' needs. Moreover, healthcare personnel feel a need for achievement, and experience a troubled conscience if they fail (Sørli *et al.* 2003, 2004). People with high levels of burnout have been described as over-committed, and as having a tendency to blame themselves (Jeanneau & Armelius 2000). Thus, it is reasonable to hypothesize that a troubled conscience has an impact on burnout among healthcare personnel, a theory also suggested by Nordam *et al.* (2005).

In summary, previous research shows inconsistent results regarding burnout; additionally, many previous studies have focused on one determinant at a time. In this study, we try to broaden the picture, embracing several contributing factors. Although numerous studies have addressed burnout, to our knowledge no study has investigated the impact of a troubled conscience on burnout. As healthcare work poses a unique emotional strain and many ethical problems and dilemmas, it is surprising that relatively a few studies have fully investigated the impact of moral strain on burnout. Some exceptions exist; for instance, interview studies have shown that moral distress is related to burnout (Sundin Huard & Fahy 1999, Severinsson 2003). The theoretical assumptions made were (i) perceptions of conscience influence the degree of 'stress of conscience', which is

associated with burnout; (ii) social support and resilience; and (iii) personal and work demographics may be of importance in burnout.

The study

Aim

The aim of this study was to analyse the importance of contributing factors of burnout in healthcare personnel. The hypotheses tested were

- Emotional exhaustion and depersonalization can be explained by the levels of 'stress of conscience'.
- Emotional exhaustion and depersonalization can also be explained by personal and work variables, social support and resilience.

Design

A cross-sectional study was carried out in 2003 in a healthcare district in a rural area of Northern Sweden with one hospital (about 160 beds), eight primary healthcare centres, and about 46,000 inhabitants. The district was chosen firstly since the number of personnel allowed for inclusion of the total population and secondly as it has many people on sick leave (NBSI 2006).

Participants

All personnel ($n = 625$) participated in this cross-sectional study, excluding only those in laboratory and radiotherapy departments, because they have little contact with patients, and personnel in psychiatric care, whose experiences will be described elsewhere. In total, 469 people (75%) answered the questionnaires. For this study, administrative personnel such as secretaries, assistants and cleaners with no patient contact were excluded; in total, these comprised 46 people, leaving a sample of 423.

Power analysis

A power analysis for differences in emotional exhaustion, based on sample size of 400 gives a power of 0.81 for a true two-group mean difference of 3 (5.5% of scale max score 54) assuming $SD = 10.5$ and for depersonalization a power of 0.83 with true two-group mean difference of 1.4 (4.5% of scale maximum score 30) assuming $SD = 4.8$. The sample size chosen thus gives enough power to detect meaningful differences in emotional exhaustion and depersonalization.

Instruments

Burnout

Burnout was assessed using a validated Swedish translation (Hallsten 1985) of the MBI (Maslach *et al.* 1996). The MBI consists of three subscales: emotional exhaustion (EE) (nine items), depersonalization (DP) (five items), and personal accomplishment (PA) (eight items). Items are scored on a 7-point scale ranging from 'never' (0) to 'daily' (6). Previous studies show varying factorial structure of the three burnout dimensions in the MBI. Personal accomplishment seems to be the most unstable and may reflect not just burnout (Kalliath *et al.* 2000). For this study, therefore, we used emotional exhaustion, the core dimension of burnout (e.g. Cox *et al.* 1993), and depersonalization as dependent variables. The reliability coefficients were 0.90, 0.69 and 0.80 for EE, DP and PA respectively. High levels of EE and DP and low levels of PA indicate increased risk of burnout. Maslach *et al.* (1996) provide cut-off points for a categorical rating of low, moderate, or high burnout; however, they recommend use of the original numerical scores in statistical analyses (p. 9).

Contributing variables

The *Stress of Conscience Questionnaire* (SCQ) is a 9-item (Chronbach's $\alpha = 0.83$) questionnaire, tested for validity and reliability (Glasberg *et al.* 2006). Each item consists of an A question that evaluates the frequency of a selected stressful situation using a scale ranging from 'never' (0) to 'every day' (5), and a B question that evaluates the perceived degree of troubled conscience generated by the situation using a 10-cm visual analogue scale (VAS) ranging from 'no, not at all' (0) to 'yes, it gives me a very troubled conscience' (5). The A score is multiplied by the B score to reflect the total 'stress of conscience' for each item. Adding the scores for all items gives a total sum. All alpha coefficients (α) reported are calculated in this sample.

The *Perceptions of Conscience Questionnaire* (PCQ) consists of 16 items ($\alpha = 0.71$), and it is valid and reliable for assessing a variety of common perceptions of conscience (Dahlqvist *et al.* 2007). Items are scored on a 6-point scale ranging from 1 'no, totally disagree' (1) to 'yes, entirely agree' (6); no sum of scores can be calculated, since the items cannot be added together. The PCQ is used as 16 individual variables.

Social support was measured using the Social Interactions Scale from the General Nordic Questionnaire (QPS Nordic), which assesses the psychological and social work environment. QPS Nordic is validated, and tested for reliability, for use in the Nordic countries (Lindström *et al.* 2000). The Social Interactions Scale consists of eight items covering support from one's immediate superior (three items,

$\alpha = 0.88$), co-workers (two items, $\alpha = 0.77$), and family/friends (three items, $\alpha = 0.71$). Items are scored on a 5-point scale ranging from 'very seldom or never' (1) to 'very often or always' (5).

Resilience was assessed using the 25-item Resilience Scale (RS) ($\alpha = 0.89$) developed by Wagnild and Young (1993). Items are scored on a 7-point scale ranging from 'disagree' (1) to 'agree' (7). A Swedish version of the RS has been validated for use in Sweden (Nygren *et al.* 2004).

Personal and work demographics relevant to burnout were also collected, namely: age, sex, marital status, children living at home, occupation, current workplace, working schedule (shifts worked), employment status (hours worked per week), years in health care, and years at current workplace.

Data collection

Head managers of the sections distributed questionnaires with an introductory letter to their staff via unit managers and internal mail. The completed questionnaires were returned by post in a prepaid envelope directly to the researchers, of whom only one had access to the code list. A reminder letter was sent out 3 weeks after distribution to those who had not returned the questionnaire.

Ethical considerations

The study was approved by the Ethics Committee of the Medical Faculty, Umeå University. Completion and return of the questionnaire were regarded as informed consent. In the introductory letter, confidentiality and the voluntary nature of participation were assured. There was no dependency between participants and researchers.

Data analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS), version 11.0, and R (R Development Core Team 2005). The amount of internal missing data was small (<6%). Cases with missing data were excluded listwise, except for data in Table 1 that was excluded pairwise. Scores for EE and DP approximated a fairly normal distribution. Six of nine items in the SCQ, and 12 of 16 in the PCQ showed skewed distributions, and so were transformed in order to improve the normality of the distribution. The transformations used were square root (SCQ five/PCQ three items) and log transformation (SCQ one item/PCQ nine items). After ensuring homoscedasticity and linearity, parametric statistical tests were used (Munro 2001). *t*-Test and variance analysis (ANOVA) were used to assess differences

Table 1 Means (M), standard deviations (SD), and relationships (Pearson correlation coefficients) of study variables (*n* varies between 397 and 423 due to pairwise deletion of missing variables)

Variable	Mean	SD (range)	1	2	3	4	5	6	7	8	9	10	11
1. Emotional exhaustion (EE)	18.96	11.28 (0–52)	–										
2. Depersonalisation (DP)	4.64	4.55 (0–26)	0.51**	–									
3. Personal accomplishment (PA)	37.82	7.00 (11–48)	–0.18**	–0.18**	–								
4. Stress of conscience	44.22	31.36 (0–146)	0.67**	0.38**	–0.09	–							
5. Support from superiors	3.64	1.15 (0–5)	–0.27**	–0.13**	0.21**	–0.25**	–						
6. Support from co-workers	4.25	0.90 (0–5)	–0.29**	–0.22**	0.21**	–0.16*	0.52**	–					
7. Support from friends and relatives	3.88	1.07 (0–5)	–0.13**	–0.09	0.14**	–0.06	0.28**	0.39**	–				
8. Resilience	138.10	17.26 (62–175)	–0.33**	–0.22**	0.44**	–0.27**	0.17**	0.17**	0.15**	–			
9. Age	44.9	10.21 (19–65)	0.12*	–0.03	–0.01	–0.03	–0.17**	–0.22**	–0.23**	0.05	–		
10. Years in health care	21.1	10.54 (<1–44)	0.03	–0.08	–0.02	0.01	–0.16**	–0.17**	–0.19**	0.07	0.82**	–	
11. Hours worked per week	34.89	6.80 (4–50)	0.07	0.15**	0.05	0.03	–0.04	–0.09	–0.13**	0.01	0.03	0.00	–

The score norms for nurses and physicians in the USA are 22.19 (EE), 7.12 (DP) and 36.53 (PA) (Maslach et al. 1996).

P* < 0.05; *P* < 0.01.

between EE/DP, and categorical demographic characteristics. Since 12 analyses (Tables 2 and 3) were performed, Bonferroni adjustment of significance level 0.05–0.006 was applied. Pearson’s correlation coefficients were used to determine correlations between scales. Canonical correlation was used to assess the relationship between PCQ and SCQ items. This analysis examines the patterns of relationships between sets of independent variables (PCQ) and sets of dependent variables (SCQ).

A multiple linear regression model with stepwise, non-automatic and forward inclusion was used in order to assess which variables were important contributing factors of EE and DP. Age and sex were always included. Otherwise, only the variables with statistically significant correlation (Pearson) or significant difference (*t*-test and variance analysis) with EE and DP were retained. For the SCQ/PCQ, the variables that were statistically significant in the canonical correlation were retained.

Initially a stepwise forward inclusion was conducted for every item in the three groups – demographics, SCQ/PCQ, and social support/resilience – in turn, in order to examine their independent effect on EE and DP. Each item entered into the separate regressions models was tested for statistically significant contribution to the model (*F*-test). Thereafter, the variables for each group were entered in the following order: firstly, demographic characteristics, in order to control for these; secondly, PCQ and SCQ; and finally, social support and resilience. Variables that did not contribute statistically significantly (limit 0.05) were deleted and the independent effect of each variable was assessed by analysis of variance.

Results

Demographics

The demographics of the sample are outlined in Tables 1–3. The mean age was approximately 45 years (SD = 10.21), and 84% were female. Almost 86% were either married or cohabiting, and the majority (57%) had children living at home. Just fewer than 40% worked in primary health centres; the distribution over the other workplaces was largely equal. Almost half (*n* = 211) were Registered Nurses (RNs), 113 were Enrolled Nurses (ENs) including one nursing aide, 45 were physicians, and 54 had other occupations (mostly physiotherapists, occupational therapists and social workers). The mean length of time spent working in health care was 21 years (SD = 10.54), of which 11 years (SD = 9.28) were at the current workplace. The majority worked irregular shifts (58%), and full-time (55%). High levels of emotional exhaustion (≥27) were reported by 25.1%

Table 2 Results for emotional exhaustion and depersonalisation ($n = 423$)

Demographic variables	n	Emotional exhaustion				Depersonalization			
		Mean	SD	t	P value	Mean	SD	t	P value
Sex									
Male	67	18.31	10.13	-0.51	0.61	6.22	4.57	3.13	0.002
Female	354	19.09	11.50			4.34	4.49		
Marital status									
Single	59	20.97	13.31	1.25	0.21	5.76	5.95	1.60	0.11
Married/cohabiting	361	18.68	10.89			4.47	4.26		
Children living at home									
No	180	20.68	12.43	2.63	0.009	5.16	5.16	1.94	0.053
Yes	241	17.68	10.19			4.26	4.01		
Shift worker									
No	173	21.58	12.23	3.89	≤ 0.001	4.73	4.66	0.29	0.77
Yes	244	17.16	10.28			4.60	4.49		

Table 3 Results of ANOVA for emotional exhaustion and depersonalization ($n = 423$) (< 1, 4 denotes that RN and EN have lower mean values than Physicians and other)

Demographic variables	n	Emotional exhaustion				Depersonalization			
		Mean	SD	P value	<i>Post hoc</i> *	Mean	SD	P value	<i>Post hoc</i> *
<i>Occupation</i>									
1. Physician	45	23.33	11.87	≤ 0.001		8.07	5.45	≤ 0.001	> 2, 3, 4
2. RN	210	17.90	11.27		< 1, 4	4.54	4.57		
3. EN	113	17.28	10.46		< 1, 4	3.71	3.86		
4. Other professionals [†]	53	23.11	10.87			4.13	3.71		
<i>Current workplace</i>				≤ 0.001				0.611	
1. Emergency care	49	13.94	7.03		< 3, 4, 5	4.27	3.87		
2. Surgical care	52	15.98	10.76			4.17	3.74		
3. Internal medicine	57	21.28	10.40			4.56	4.97		
4. Elder care	50	22.08	12.17			4.82	4.55		
5. Primary healthcare centre	164	20.09	11.85			5.08	4.71		
6. Other [‡]	49	17.53	11.38			3.96	4.97		

RN, Registered Nurse; EN, Enrolled Nurse.

*Bonferroni; [†]e.g. Physiotherapist, occupational therapist or social worker; [‡]e.g. Paediatric care or obstetric/gynaecology care.

of the sample, while only 6.9% reported high levels of depersonalization (≥ 13). Low levels of personal accomplishment (≤ 31) were reported by 18.9%. The mean burnout scores for this sample are somewhat lower than the score norms published by Maslach *et al.* (1996) for nurses and physicians in the United States of America (USA).

Preliminary analysis: relationships between variables

Univariate tests were conducted to establish which variables had an influence on EE and DP, and thus should be included in the regression. Pearson's correlation analysis showed that the hypothesized relationships largely held for further analyses. Descriptive statistics of the scales together with correla-

tions among variables are presented in Table 1. Emotional exhaustion is clearly and positively related to 'stress of conscience'. In addition, staff reported higher levels of emotional exhaustion when they received little support from superiors, co-workers, and friends/relatives, had low resilience, and were older, whereas depersonalization seemed to be related to high levels of 'stress of conscience', working more hours per week, low levels of support from superiors and co-workers, and low resilience. Tables 2 and 3 show the results of the t -test and ANOVA used to establish relationships between demographic characteristics and EE/DP. Personnel with no children living at home and working only daytime showed statistically significantly higher mean scores in emotional exhaustion, as did physicians compared with

RNs and ENs. Furthermore, emotional exhaustion among staff working in internal medicine, elder care, and primary healthcare centres was statistically significantly higher than among staff working in emergency care. Regarding depersonalization, men showed statistically significantly higher mean scores than women, as did physicians compared with RNs and ENs. To establish the relationship between perceptions of conscience and 'stress of conscience', to screen out and define relevant items, a canonical correlation was conducted (Table 4). Canonical correlation resembles factor analysis, in that it aggregates items into groups (latent factors) and then assesses the correlation between these groups. Loadings or structure coefficients > 0.30 are regarded as meaningful (Munro 2001). In the theoretical model, perception of conscience is assumed to influence the degree of 'stress of conscience', and so PCQ variables were used as predictors of SCQ variables. Only the first function (1–9) was statistically significant, showing a canonical correlation of 0.489 with 23.9% shared variance (Wilks' $\lambda = 0.515$, $P \leq 0.000$). This function is theoretically meaningful, indicating that perceiving conscience as a burden and an authority and not as an asset relates to overall high levels of 'stress of conscience'. All variables in the SCQ have a structure coefficient > 0.30 , attesting to the concordance of items in this questionnaire.

Regression analyses

Tables 5 and 6 presents the results of the two stepwise regression analyses which examine the effect of the independent variables – always including age and sex – on emotional exhaustion and depersonalization. The overall regression equation for emotional exhaustion explained 59.3% of the variance. Of this, 48.1% was explained by PCQ and SCQ items. Thus, having to deaden one's conscience in order to keep working in health care and 'stress of conscience' from lacking time to provide the care needed, from one's work being so demanding that it influences home life, and from not being able to live up to others' expectations in work were associated with emotional exhaustion. Of the demographic variables, emotional exhaustion was explained by being female, being a physician, being other healthcare professional, and working in elder care or primary healthcare centres. In addition, low social support from co-workers and low levels of resilience were both associated with emotional exhaustion.

As regards depersonalization, the overall regression equation explained 30.3% of the variance. PCQ and SCQ items also explained the major part (22.2%) of the variance for this dimension. Again, having to deaden one's conscience was associated with depersonalization, as well as 'stress of

Table 4 Canonical correlation between perceptions of conscience (PCQ = set 1) and stress of conscience (SCQ = set 2), and mean scores (SD) for items ($n = 360$)

Variable sets	Function 1: r_s	Mean (SD)	
Set 1: independent variable (referring to factor*)			
7. In my workplace, I can express what my conscience tells me (asset)	-0.414	4.68	(1.11)
8. I follow my conscience in my work (asset)	-0.356	4.76	(0.92)
11. I have to deaden my conscience in order to keep working in health care (burden)	0.655	2.23	(1.46)
12. My conscience is far too strict (burden)	0.520	2.27	(1.45)
15. When I follow my conscience, I develop as a human being (authority)	0.316	4.24	(1.29)
Set 2: Dependant variable		A^\dagger	B^\ddagger
1. Lacking the time to provide the care needed	0.753	2.74	(1.36) 2.67 (1.54)
2. Forced to provide care that feels wrong	0.587	1.49	(1.20) 2.42 (1.79)
3. Dealing with incompatible demands	0.727	2.14	(1.50) 2.14 (1.62)
4. See patients being insulted and/or injured	0.488	1.01	(1.02) 2.33 (1.95)
5. Avoiding patients or family members who need help or support	0.507	0.84	(1.01) 1.68 (1.81)
6. Private life so demanding that it influences work	0.358	0.78	(1.09) 1.04 (1.51)
7. Work so demanding that it influences home life	0.726	2.26	(1.44) 2.82 (1.78)
8. Not living up to others' expectations	0.795	1.82	(1.36) 2.01 (1.68)
9. Lowering aspirations to provide good care	0.686	1.29	(1.28) 1.95 (1.82)
Canonical correlation	0.489 ($P \leq 0.000$)		
Variance explained	23.9%		

r_s = structure coefficients ≥ 0.30 .

*Factor structure of PCQ (Dahlqvist *et al.* 2007) (range 1–6).

†SCQ frequency of item (range 0–5).

‡SCQ degree of troubled conscience (range 0–5).

Table 5 Multiple regression analysis of emotional exhaustion ($n = 401$)

Variables	Model 1		Model 2		Model 3	
	Beta	<i>t</i> -value	Beta	<i>t</i> -value	Beta	<i>t</i> -value
Age	0.105	1.97*	0.007	0.18	0.038	1.04
Sex (female)	0.108	2.21*	0.116	3.40***	0.085	2.54*
Physician	0.197	3.65***	0.120	3.14**	0.148	4.05***
Other professionals	0.165	3.35***	0.171	4.99***	0.154	4.72***
Elder care	0.120	2.36**	0.081	2.28*	0.085	2.53*
Primary healthcare centres	0.103	2.01*	0.059	1.65	0.074	2.17*
SCQ item 1			0.171	3.99***	0.185	4.52***
SCQ item 7			0.322	7.53***	0.301	7.38***
SCQ item 8			0.272	6.68***	0.204	5.10***
PCQ item 11			0.168	4.69***	0.149	4.34***
Co-worker support					-0.144	-4.17***
Resilience					-0.156	-4.60***
Model F	(6, 394) 5.84***		(10, 390) 49.72***		(12, 388) 49.54***	
Overall R^2	0.062		0.549		0.593	
ΔR^2	-		0.481		0.112	

Beta, standardized regression coefficient.

* $P \leq 0.05$; ** $P \leq 0.01$; *** $P \leq 0.001$.

Table 6 Multiple regression analysis of depersonalisation ($n = 399$)

Variables	Model 1		Model 2		Model 3	
	Beta	<i>t</i> -value	Beta	<i>t</i> -value	Beta	<i>t</i> -value
Age	-0.025	-0.47	-0.067	-1.42	-0.042	-0.88
Sex	-0.024	-0.49	-0.014	-0.33	-0.051	-1.18
Physician	0.246	4.58***	0.227	4.80***	0.246	-5.25***
SCQ item 8			0.173	3.75***	0.143	3.09**
SCQ item 9			0.264	5.63***	0.261	5.65***
PCQ item 11			0.214	4.73***	0.199	4.46***
Co-worker support					-0.162	-3.64***
Model F	(3, 395) 9.46***		(6, 392) 26.99***		(7, 391) 25.76***	
Overall R^2	0.060		0.282		0.303	
ΔR^2	-		0.222		0.021	

Beta, standardized regression coefficient.

* $P \leq 0.05$; ** $P \leq 0.01$; *** $P \leq 0.001$.

conscience' from not being able to live up to others' expectations and from having to lower one's aspirations to provide good care. Furthermore, being a physician and experiencing low social support from co-workers also made a contribution to the variance.

Multicollinearity, that is, the risk of reduced stability of the model, caused by correlation among contributing variables, was assessed using Pearson's correlation coefficients. The variables with the highest internal correlations were SCQ items ($r \leq 0.51$), as well as being male and being a physician. However, correlation coefficients did not exceed the recommended level (< 0.70) for exclusion due to multicollinearity

(Tabachnick & Fidell 2001). Multicollinearity was further validated through backwards elimination of variables in the final model. The results indicated that when age and especially sex were removed, the occupation and workplace variables increased in significance, indicating a real interaction between sex and occupation. This reduces the possibilities to detect their effect per se on burnout. For depersonalization, sex becomes statistically significant when the occupation variable was removed. Other changes, in beta coefficients, were marginal. Analysis of residuals indicated that they were normally distributed, i.e. there seems to be no systematic information remaining in the residuals.

Discussion

Study limitations

Some limitations to this study should be noted. Firstly, it is based on self-reported cross-sectional data, making inferences about causality less feasible. Secondly, beta coefficients, even though they are standardized, should be interpreted with caution. Thirdly, the number of individuals in different groups is unequal, especially regarding sex, occupation and current workplace; this is a weakness since uneven splits between categories are problematic in multivariate analyses (Tabachnick & Fidell 2001). This issue is mainly relevant to the low number of men and physicians, making it impossible to say, for instance, whether depersonalization is a sex or occupation effect. Despite these limitations, the results provide a meaningful contribution to burnout research; yielding valuable new information about the role that 'stress of conscience' plays in burnout. This result should encourage further investigation into the unique difficulties related to 'stress of conscience' in health care.

The study was conducted in a rural area, a fact which must be taken into consideration when interpreting the results, since rural areas might have unique difficulties. Iversen *et al.* (2002) indicate that strains among personnel in rural areas stem from difficulties in taking time off, long periods on call, and having an extensive role and feelings of responsibility. However, Hannigan *et al.* (2000) found that personnel in urban areas were more emotionally exhausted than those working in rural areas.

Discussion of results

The main results of this study indicate that emotional exhaustion and depersonalization can be explained by 'stress of conscience'. The overall equation explained 59.3% of the variance in emotional exhaustion, which suggests a respectable contribution by the study variables. The variance explaining depersonalization is lower, at 30.3%; on the other hand, fewer variables contribute statistically significantly to this dimension.

The analysis strongly suggests that personnel who deaden their conscience in order to keep working in health care, as well as those who experience 'stress of conscience' from lack of time to provide the care needed, being unable to live up to others' expectations of their work, and having work so demanding that it influences their home life, have higher levels of emotional exhaustion. These items explained over 48% of the variance for emotional exhaustion. This is not surprising, since doing good and having a sense of pride about one's work are intrinsic values in health care. The risk connected with

deadenning one's conscience has been demonstrated by McDonald and Ahern (2002), in that a much greater percentage of non-whistleblowers reported feelings of guilt, shame and constantly reliving the event than did whistleblowers. Similarly, Lazarus and Folkman (1984) maintain that 'inaction' can be as stressful as 'action' when personal values are compromised. Conscience has been attributed by nurses as a call to care (Nelms 1996), and deadening one's conscience might therefore be the same as ignoring the call to care.

These results are consistent with results obtained by other researchers, who designate lacking time and heavy workload as probably the strongest determinants of emotional exhaustion (e.g. Janssen *et al.* 1999a). Interestingly, lacking time also generates a considerable degree of troubled conscience, in that the means for the A and B questions in this item were almost equal. Sørli *et al.* (2003) argue that lack of time can bring about a troubled conscience over 'the little bit extra' being omitted. Lack of time is inherent in today's culture. Nevertheless, most people do not burn out; this might have to do with prioritising and perceiving possibilities (Vanheule & Verhaeghe 2004). Emotional exhaustion is further related to 'stress of conscience' from work influencing family life, and moderately associated with being female. The influence of negative spillover between work and family is well-documented (e.g. Tummers *et al.* 2001). The impact of work-family conflict on burnout is likely to be salient among women, due to women's greater responsibility for home and family (Lundberg *et al.* 1994).

High and unrealistic expectations have previously been suggested to correlate with burnout. However, this relationship is not as strong and consistent as one might believe, probably due to uncertainty regarding whether the expectations refer to the organization, to patients' or to personnel's abilities (Schaufeli & Enzmann 1998). In this study, the question concerned 'others' expectations of my work'. It must not be forgotten that it is the person's own statements. Thus it is unclear whose these expectations are often the expectations are diffuse and might actually be the personnel's own. Not being able to live up to others' expectations was also related to depersonalization, as were having to deaden one's conscience and lowering one's aspirations to provide good care, which together explained about 22% of the variance. Depersonalization often manifests as a withdrawal from others and from one's work, thus decreasing the aspiration to provide good care. Unsurprisingly, some respondents report that they have to deaden their conscience in order to continue working in health care. Kelly (1998) maintains that nurses often try to meet the demands of the work by sacrificing their own standards of care and giving in to social pressure.

What is already known about this topic

- Burnout is a major organizational and personal problem among personnel in health care, and also has become a societal problem.
- Workload, role ambiguity and lower age seem to be the main correlates of burnout, while hardiness, active coping and social support seem to be the main buffering factors of burnout in health care.

What this paper adds

- Stress from a troubled conscience, i.e. 'stress of conscience', explains a considerable part of emotional exhaustion.
- Depersonalization also contributes to emotional exhaustion among healthcare personnel.
- Factors associated with burnout include both having to deaden one's conscience in order to keep working in health care, and 'stress of conscience' from lacking the time to provide the care needed, from work being so demanding that it influences one's home life, from not being able to live up to others' expectations, and from having to lower one's aspirations to provide good care.

Lack of social support from co-workers was associated with both emotional exhaustion and depersonalization, while low resilience was only associated with emotional exhaustion. Thus, personnel who have the ability to bounce back from adversity are less likely to experience emotional exhaustion. The importance of sufficient social support has been shown in many studies (e.g. Bourbonnais *et al.* 1999). In this study, only lack of support from co-workers seemed to contribute to burnout. Janssen *et al.* (1999a) concluded that burnout is primarily determined by workload and limited social support from colleagues. In a qualitative study of strategies used by mental health staff to manage the demands of their work, talking to colleagues was the most frequently mentioned way of coping (Reid *et al.* 1999). According to Kivimaki *et al.* (2001), poor teamwork is a greater predictor of sick leave than overload and low job control, while Bultmann *et al.* (2004) found that support from co-workers protected against fatigue in women but not in men.

The result that demographic variables only contribute about 6% to the overall variance is consistent with earlier research, even though the explained variance for demographics was higher than for co-worker support in depersonalization. Besides occupation and current workplace, only female sex was statistically significantly related to emotional exhaustion.

The healthcare sector is diverse, and while earlier research has suggested some differences in burnout levels regarding occupation and speciality, results are inconsistent. In this study, working in elder care or primary healthcare centres seems to be a determinant of burnout. Other studies have proposed that personnel in elder and community care have high levels of burnout (e.g. Hannigan *et al.* 2000, Cocco *et al.* 2003). Nevertheless, a few studies have compared different workplaces in relation to burnout. Tummers *et al.* (2002) found that ICU nurses had lower levels of burnout than non-ICU nurses, and Gillespie and Melby (2003) reported that nurses working in accident and emergency care had lower levels of emotional exhaustion than those working in acute medical care.

Our finding that being a physician is related to both emotional exhaustion and depersonalization is consistent with the results of Grunfeld *et al.* (2000). In particular, depersonalization seems to be related to being a physician. A confounder may exist here in that 60% of physicians are male. Hannigan *et al.* (2000) maintain that male mental health nurses have higher depersonalization than their female colleagues. Schaufeli and Greenglass (2001) discuss why men are more prone to depersonalization in terms of our view on masculinity, given that our culture emphasizes strength, independence and successful achievement. The results for physicians might also reflect the rural context, with its lack of physicians and long distances. Moreover, some physicians work alone more often than nurses, and so might not have the same social support from colleagues. The lower mean level for emotional exhaustion among shiftworkers in the *t*-test might be confounded by the higher mean level among physicians, others – e.g. physiotherapists and social workers – and personnel at primary healthcare centres, which all to a lesser extent work shifts.

Burnout is an international problem, and although some differences exist between different cultures (Thomsen *et al.* 1999), there are also many similarities. Troubled conscience is a phenomenon that has been described throughout history and in many cultures (Langston 2001). Nevertheless, this study accounts for a Western Protestant view of conscience and an individualistic culture. Few studies have been conducted explicitly in rural areas, and so even though the rural setting is not the main focus of this study, and the rural culture in Sweden might pose some special problems, our work makes a valuable contribution to this context.

Conclusion

These results indicate the importance of being attentive to our own and others' feelings of troubled conscience, since recurring 'stress of conscience' seems to be a statistically significant factor for explanation of burnout in health care.

Staff seemed to need opportunities to reflect on their troubled consciences. An important question for further research is how a troubled conscience can be eased. 'Stress of conscience' is context-dependent, i.e. dependent on values and priorities that exist explicitly or implicitly in the system, making it a question of the working environment.

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Author contributions

ALG, SE and AN were responsible for the study conception and design of the manuscript and ALG was responsible for the drafting of the manuscript. ALG performed the data collection and ALG and SE performed the data analysis. AN obtained funding and ALG, SE and AN provided administrative support. SE provided statistical expertise. SE and AN made critical revisions to the paper. SE and AN supervised the study.

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