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EMPIRICAL STUDIES

Assessments of stress of conscience, burnout and social support amongst care providers in home care and residential care for older people

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Abstract

Background: Studies points to that levels of stress of conscience and burnout among staff in healthcare contexts may seriously affect their health.

Aim: To compare assessments and associations of stress of conscience, perceptions of conscience, social support and burnout amongst care providers working in home care respectively residential care for older people.

Methods: This cross-sectional descriptive comparative study was performed among all care providers working in home care (n = 227) and residential care of older people (n = 354) in a municipality in northern Sweden. Data was collected using four different questionnaires. Analysis were performed using partial least square regression, descriptive statistics, statistical tests and effect size measures.

Results: Care providers in residential care of older people assessed higher levels of stress of conscience compared to those working in home care. Exhaustion was an important predictor for belonging to the group of care providers working in residential care of older people. The most important predictor for belonging to the group of care providers working in home care were social support from one's immediate superior and co-workers. Women assessed significantly higher levels of stress of conscience and exhaustion compared to men.

Conclusion: Further research seems needed to investigate what the high levels of stress of conscience is caused by. A combined intervention consisting of work-directed measures against burnout and measures aiming at reducing stress of conscience is suggested.

KEYWORDS

burnout, home care, perception of conscience, residential care of older people, social support, stress of conscience

BACKGROUND

Conscience may be described as either a state or act of sharing knowledge, awareness and apprehension [1], and as central to a human being with important tasks [2]. Care providers (CP) perceive conscience amongst other things as an authority, a warning signal, an asset, a burden and as demanding sensitivity [3]. Since conscience may be perceived as an asset and a driving

force, it may contribute to act in accordance with it. However, when CPs perceive that their conscience is far too strict that they cannot live up to the standards they set for themselves, and if they have to deaden their conscience in order to keep working in health care, conscience is perceived as a burden [4]. Juthberg [5] showed that 22% of CP had to deaden their conscience to keep working in health care. About five years later, the corresponding figure was 37.7% [6]. A burdened conscience may give rise to stress of conscience (cf. [7]).

The concept 'stress of conscience', that is stress related to troubled conscience, was created in the year 2006 when the researchers tested and published 'The Stress of Conscience Questionnaire' (SCQ) [8]. The SCQ has also been used amongst staff in psychiatric care [9,10], emergency care [11], palliative care [12] and in residential care for older people (RCOP) [6,13–16]. The results have shown to be similar across settings; the item 'lacking time to provide the care a patient need' engenders the highest score of stress of conscience amongst CPs [4–6,8,9,13,16,17]. Åhlin et al. [6] found that levels of stress of conscience were higher than has been previous reported in studies amongst CPs in RCOP. The concept has also been investigated in qualitative studies as 'troubled conscience' [18–20].

In RCOP, stress of conscience is also studied in relation to health complaints and gender. CPs with higher degrees of stress of conscience report significantly more health complaints than those with lower degrees [14]. Female care providers in RCOP report higher levels of stress of conscience compared to men [16]. Similar results are reported by Padyab et al. [21] who found that levels of stress of conscience were significantly higher amongst female patrolling police officers compared to males in the same profession. Studies of stress of conscience amongst CPs in home care (HC), as a single group, have not been found in database searches. However, in Sweden CPs in HC have over the last decades obtained a decreased room for action. All work tasks are nowadays planned and time is predetermined and often slim, which means that their possibilities to adapt the care to the person's individual needs have decreased [22]. CPs in HC report job strain related to that they want to do much more for the older persons than the management allow [23]. They are meeting older people with complex personal needs, and they describe unclear and undefined responsibilities and are often working alone [24]. CPs in HC describe time-consuming administrative tasks and that they confront needs that cannot be met. They also describe lack of time and lack of continuity [25]. Together, these findings point to the danger of developing stress of conscience amongst CPs in HC.

Stress of conscience has been found related to the main factors of burnout, that is, emotional exhaustion and depersonalisation [26].[5] Åhlin et al. [6] confirmed this relationship in a longitudinal study. A review states that burnout is increasing in health care personnel all around the world [27]. Rezaei et al. [28] report in their review that the prevalence of burnout amongst Iranian nurses was estimated to be 36%. Aiken et al. [29] found that nurses in 12 European countries self-rated their burnout levels from 10% in Netherlands to 78% in Greece. Shin et al. [30] found in their meta-analysis that higher nurse-to-patient ratio was related to higher degree of burnout amongst nurses. Another review found a significant relation between higher burnout levels and increased adverse events [31]. A meta-analysis consisting of 63 studies found that higher burnout was significantly related to poorer patient satisfaction [32].

In a healthcare context, insufficient social support from supervisors is associated with stress of conscience [33]. At the same time, results have shown that social support from supervisors can be a protecting factor against stress of conscience [6,33]. Social support from supervisors has been found related to less emotional exhaustion and higher levels of personal accomplishment [34]. Emotional social support is found to moderate the relation between emotional job demands and emotional exhaustion [35]. Insufficient support in difficult care situations is generating troubled conscience amongst staff working in RCOP [20].

Studies above points to that levels of stress of conscience are increasing amongst staff in various healthcare contexts, which may jeopardise their work-related health. Studies above also point to that burnout may seriously affect CPs health and quality of care, as well as social support seems to prevent stress-related ill health. It is therefore important to continually follow levels of stress of conscience, burnout and dimensions of social support. To our knowledge, there are no studies that compare assessments of stress of conscience, burnout and social support amongst CPs in RCOP and HC.

Aim

The aim of the study was to compare assessments and associations of stress of conscience, perceptions of conscience, social support and burnout amongst care providers working in home care respectively residential care for older people.

METHODS

Study design

The study was performed in care for older people. A quantitative approach with a cross-sectional, descriptive comparative design was used to answer the aim of the study.

Participants and setting

This study was performed amongst all CPs, that is, all registered nurses (RNs) and nurse assistants (NAs) working in

RCOP and home care (HC) in a municipality in northern Sweden were invited to participate. The CPs worked in 21 homes for RCOP and in 25 home care areas in the municipal. There were no changes of greater importance regarding staffing during the study. The CPs working in RCOP and HC worked only days, only nights, or shift (i.e. day/evening and eventually some nights). The CPs obtained written information about the study and that participation was voluntary. To answer the questionnaires and return them were considered as giving informed consent to the study.

Data collection

The data were collected using four different questionnaires. The questionnaires were sent to all CPs working within the municipal out of which 669 worked in HC and 1121 worked in RCOP. The questionnaires were sent to the CPs working in HC during March 2018 and to those working in RCOP during October of 2018. The data collection was made online and e-mails containing information about the study were sent to all CPs work email addresses. Two reminders were sent to the CPs after four and eight weeks. Managers were also encouraged to remind CPs about the study during the data collection period. In total, 581 (32.5%) CPs answered the questionnaires.

Questionnaires

SCQ

The Stress of Conscience Questionnaire (SCQ) consists of 9 A- and B-questions. The A-questions describe different situations of ethical difficulty in healthcare and the respondents are asked to assess how often they experience the situations. In the B-questions, the degree to which the situations give rise to troubled conscience is rated. The A-questions are ranges from 0 that represents 'Never' to 5 that represents 'Every day'. The B-questions are rated on a 10 cm visual analog scale that ranges from 0 = 'No, it gives me no troubled conscience at all' to 5 = 'Yes, it gives me very troubled conscience'. The stress of conscience index has values from 0 to 25 points for each question in the questionnaire and is calculated by multiplying scores of each A-question with the scores of its equivalent B-question. The SCQ has been validated in Sweden [4,8].

PCQ

The Perceptions of Conscience Questionnaire (PCQ) consists of 16 questions, where perceptions of conscience in terms of its origin, function and significance are rated on a scale that ranges from 1 that denotes 'No, totally disagree' to 6 which corresponds to 'Yes, entirely agree'. Dahlqvist and coworkers performed the first validation of the questionnaire, and at that time, the PCQ ended up with 15 items [3]. Since then a revalidation of the questionnaire has been performed in which an additional question was added [4]. The questionnaire consists of six factors about perceiving one's conscience as an authority, as a warning signal, as demanding sensitivity, as an asset, as an burden and as depending on culture. In this study, the16-item version of the questionnaire was used.

OLBI

The Oldenburg Burnout Inventory (OLBI) consists of 16 items and is used to assess levels of burnout. In the OLBI, burnout is conceptualised as a syndrome of negative work-related experiences. The OLBI contains two factors, exhaustion and disengagement, comprising eight items each, four negatively and four positively worded. Responses on each item are rated on a scale that ranges from 1 totally disagree to 4 totally agrees. The OLBI has been validated for Swedish settings [36].

SocIS

Social support (SocIS) consists of nine items that is used to measure support from co-workers, managers, family and friends regarding the social and psychological working environment. The questionnaire is composed of three factors that contains three statements each about support from one's immediate manager, co-workers, family and friends. The assessments are made on a scale ranging from 1 'Very seldom or never' to 5 'Very often or always'. The SocIS has been validated for Swedish settings [37].

Statistical procedures

Statistical analysis was performed with The Statistical Package for the Social Sciences (SPSS), version 25 for windows (SPSS, Chicago, IL, USA, and the programming language R (R version 3.5.1, 2018-07-02). Missing values on each item in the questionnaires were 13.8–14.5% (SCQ index), 29.1–29.3% (PCQ), 31.7% all items (OLBI) and 32.9% all items (SocIS). Missing values in the B questions of the SCQ were replaced with zero when the respondent had answered zero on the A question; otherwise, no missing values were replaced. Missing values were not missing at random, approximately 15% of the respondents did not answer any more questions after they had answered questions on the

SCQ. Item 7 in the SCQ was excluded from all analysis because of a technical error during the data collection. No other items were affected by the technical error. The reliability measure Cronbach's alpha for the total scales was 0.84 for the SCQ, 0.80 for the PCQ, 0.70 for SocIS, 0.83 for the OLBI subscale Ex and 0.82 for the OLBI subscale Dis. *t*-Tests and Chi-square tests were used to estimate differences and relationships in demographic variables (Table 1) and during univariate analysis. All variables were investigated with various types of descriptive statistics, and comparisons of different measures of central tendency and variance. Effects were also analysed using the effect size measures Phi coefficient (ϕ), Cramer´s V (V) and Cohen's d (d).

Partial Least Square Regression (PLSR) was used to assess the most important items in the SCQ, PCQ, SocIS and the OLBI subscales in relation to belonging to the group of CPs working in HC or the group of CPs working in RCOP. A main reason for using PLSR is that it is a relatively robust technique when there is a relatively large number of variables in relation to a small number of cases [38]. It was verified by examining various validations plots that three components were sufficient and the variables could explain 16.94% of the variance in the response variable (CPs working in HC/CPs working in RCOP). A figure was produced that shows the importance of each item and the subscales associated with workplace belonging (HC/RCOP) as it is indicated in a plot of Jackknife 95% confidence intervals around the regression coefficients (Figure 1). Items and subscales that were found to be of importance in relation to the two workplaces in the PLSR model were also investigated further with univariate analysis.

RESULTS

The characteristics of the participants are shown in Table 1. There was a significant larger proportion of men working in HC compared with RCOP with an effect size regarded as small according to Cohen's criteria ($p = 0{,}021$, $\phi = 0.101$) [39]. There were no other significant differences regarding the characteristics of the participants between the two workplaces.

TABLE 1 Characteristics of the participants.

Characteristic	Home care for older people (n = 227)	Residential care for older people* (n = 354)
Sex		
Male	34 (15.0%)	30 (8.5%)
Female	193 (85.0%)	324 (91.5%)
Age		
Mean years (SD)	46.1 (12.2)	45.8 (12.5)
Missing	3 (0,9%)	6 (1.7%)
Employment		
Full time	111 (48.9%)	143 (40.4%)
Part time	116 (51.1%)	210 (59.3%)
Missing	0	1 (0.3%)
Time in health care		
Mean years (Sd)	18.4 (10.8)	19.7 (11.9)
Missing	5 (2.2%)	1 (0.3%)
Time at current workplace		
Mean years (SD)	10.6 (8.6)	10.6 (9.8)
Missing	1 (0.4%)	2 (0.6%)
Working schedule		
Day	125 (55.1%)	186 (52.5%)
Night	30 (13.2%)	51 (14.4%)
Shift	72 (31.7%)	117 (33.1%)
Missing	0	0
Profession		
Registered nurses (RNs)	0 (0.0%)	37 (10.5%)
Nurse assistants (NAs)	227 (100%)	317 (89.5%)
Missing	0	0

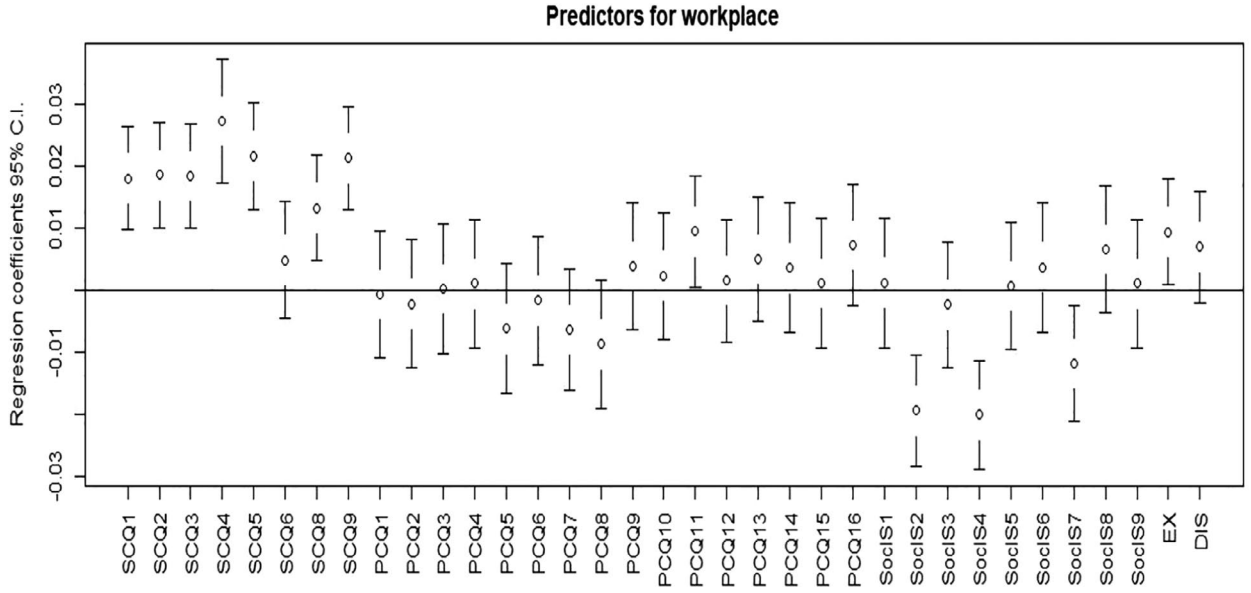

FIGURE 1 Plot of jackknife 95% confidence intervals (CIs) around the regression coefficients from PLSR for items in the SCQ, PCQ, SocIS and the OLBI-subscales EX and DIS. The regression model was fitted with the orthogonal scores algorithm, and three latent variables were used and explained 16.94% of the variance in the response variable workplace (CPs working in HC/CPs working in RCOP).

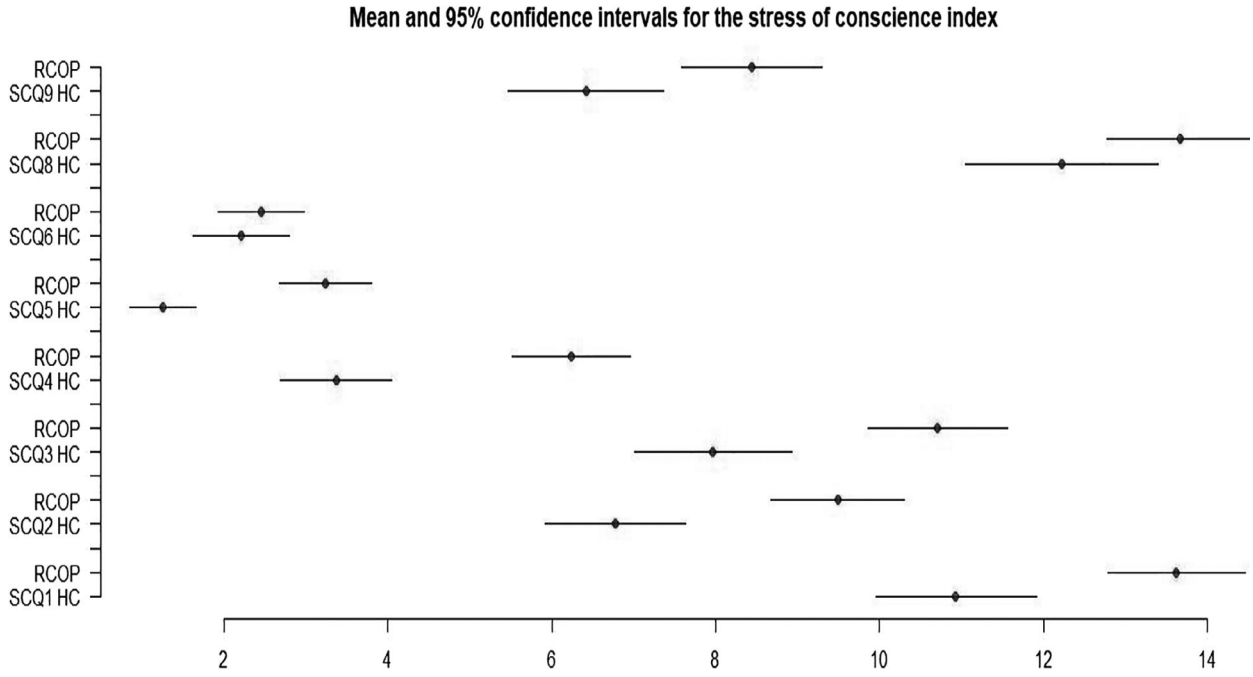

FIGURE 2 Mean values and 95% CIs of the SCQ index for CPs working in HC or RCOP.

Patterns of items in the SCQ, PCQ, SocIS and the OLBI subscales in relation to workplace belonging are shown in Figure 1. The most important indicators for belonging to the group of CPs working in RCOP were the items 'lacking time to provide the care the patient needs' (SCQ1), 'feeling forced to provide care that feels wrong' (SCQ2), 'having to deal with incompatible demands in one's work' (SCQ3), 'seeing patients being insulted and/or injured' (SCQ4), 'avoiding patients or family members who need help or support' (SCQ5), 'cannot live up to others' expectations of one's work' (SCQ8) and 'lower one's aspirations to provide good care' (SCQ9). In addition, the item 'having to deaden one's conscience in order to keep working in healthcare' (PCQ11) and the OLBI subscale exhaustion were also significantly associated with belonging to the group of CPs working in RCOP in relation to those working in HC. The most important

indicators for belonging to the group of CPs working in HC were 'getting support and help with one's work from one's immediate superior' (SocIS 2), 'having co-workers willing to listen to one's work-related problems' (SocIS 4) and 'having one's work achievements appreciated by one's immediate superior' (SocIS 7). The variables in the PLSR model explained 16.67% of the variance.

Care providers working in RCOP rated higher levels of stress of conscience compared with those working in HC (Figure 2). There were significant differences amongst six (SCQ 1, 2, 3, 4, 5, 9) of the eight items in the SCQ and effect sizes (Table 2) ranged from d = 0.38 to d = 0.51 amongst those items. This indicates that there were small and moderate effect sizes. Furthermore, women rated higher levels of stress of conscience compared with men. There were significant differences amongst six (SCQ 1, 2, 3, 4, 5, 8) of the eight items in the SCQ (Figure 3) and effect sizes (Table 2) ranged from d = 0.41 to d = 0.99 amongst the significant items. This indicates that there were small to large effect sizes. Women also rated significantly higher of levels of exhaustion compared to men ($p < 0.000$, d = 0.67). CPs working in HC rated significantly higher social support from one's immediate superior (SocIS 2) compared with those working in RCOP ($p = 0.005$, V = 0.20). They also assessed that they had co-workers willing to listen to their work-related problems significantly more often (SocIS 4) compared with those working in RCOP ($p = 0.002$, V = 0.21).

There were no significant differences regarding PCQ 11, the OLBI subscale exhaustion and SocIS 7 between the two workplaces. Results also showed that there were no significant differences between women and men regarding PCQ 11, SocIS 2, SocIS 4 and SocIS 7. Furthermore, results showed that differences between the two workplaces remained similar when conducting the analysis without the men in the sample. When all women were excluded, the results showed that there were no significant differences between the two workplaces regarding stress of conscience except on Item 6. The male CPs working in RCOP assessed significant higher levels of stress of conscience from perceiving one's private life so demanding that 'one does not have the energy to devote oneself to one's work as one would like' (SCQ 6) compared with those working in HC. This difference had a large effect (d = 0.81).

DISCUSSION

The mean values of the total SCQ index in this study were 43.34 for CPs working in HC and 61.22 for CPs working in RCOP. These values can be regarded as quite high compared to previously studies in RCOP that have reported the SCQ index to be 24.0 [15], 27.3 [14], 37.24 [40], and 45.6 [5]. Furthermore, in a longitudinal study undertaken in the same facilities for RCOP as in this study, the SCQ index was reported to be 61.0 in 2009 and 63.9 in 2010 [6]. It should be noted that the previous figures included all items in the SCQ unlike this study in which one item was excluded (SCQ 7). It is known from previous studies that 'perceiving one's work in healthcare to be so demanding that one does not have the energy to devote oneself to one´s family as one would like' (SCQ 7) is a burdensome issue for CPs working in RCOP positively associated with stress of conscience [8,13,16,41]. The results showed that women assessed significantly higher levels of stress of conscience and exhaustion compared to men. This is in line with previous findings that shows that women working in two different organisations for RCOP assess higher levels of stress of conscience compared to men [16]. Consequently, it is likely that levels of stress of conscience have not decreased from previous high levels and that women assess higher levels of stress of conscience than men. Gender differences in work-related stress have been found in other studies in various healthcare contexts.

TABLE 2 Mean values (m), standard deviations (Sd) and effect sizes according to criteria's set by Cohen (1988), small effects d ≥ 0,2, moderate effects ≥0,50, large effects ≥0,80.

SCQ Index Item	m (Sd) HC	m(Sd)RCOP	Effect sizes depending on differences in Workplace	m(Sd)Men	m(Sd) Women	Effect sizes depending on differences in Sex
SCQ 1	10.94 (6.79)	13.63 (7.48)	d = 0.38	6.84 (5.54)	13.27 (7.23)	d = 0.99
SCQ 2	6.78 (5.96)	9.50 (7.31)	d = 0.41	5.02 (5.50)	8.86 (6.70)	d = 0.61
SCQ 3	7.97 (6.76)	10.72 (7.63)	d = 0.38	5.79 (5.47)	10.12 (7.49)	d = 0.66
SCQ 4	3.36 (4.75)	6.24 (6.46)	d = 0.51	3.12 (4.31)	5.37 (6.15)	d = 0.42
SCQ 5	1.25 (2.86)	3.23 (5.02)	d = 0.48	1.13 (2.45)	2.62 (4.58)	d = 0.41
SCQ 6	2.20 (4.11)	2.45 (4.73)	d = 0.054	3.01 (6.20)	2.28 (4.26)	d = 0.14
SCQ 8	6.42 (6.68)	8.45 (7.69)	d = 0.28	4.24 (5.65)	8.07 (7.46)	d = 0.58
SCQ 9	4.22 (5.57)	6.96 (7.41)	d = 0.42	4.42 (6.28)	6.08 (6.94)	d = 0.25
SCQ total	43.34 (27.74)	61.22 (36.59)	d = 0.55	33.94 (28.03)	56.81 (34.52)	d = 0.73

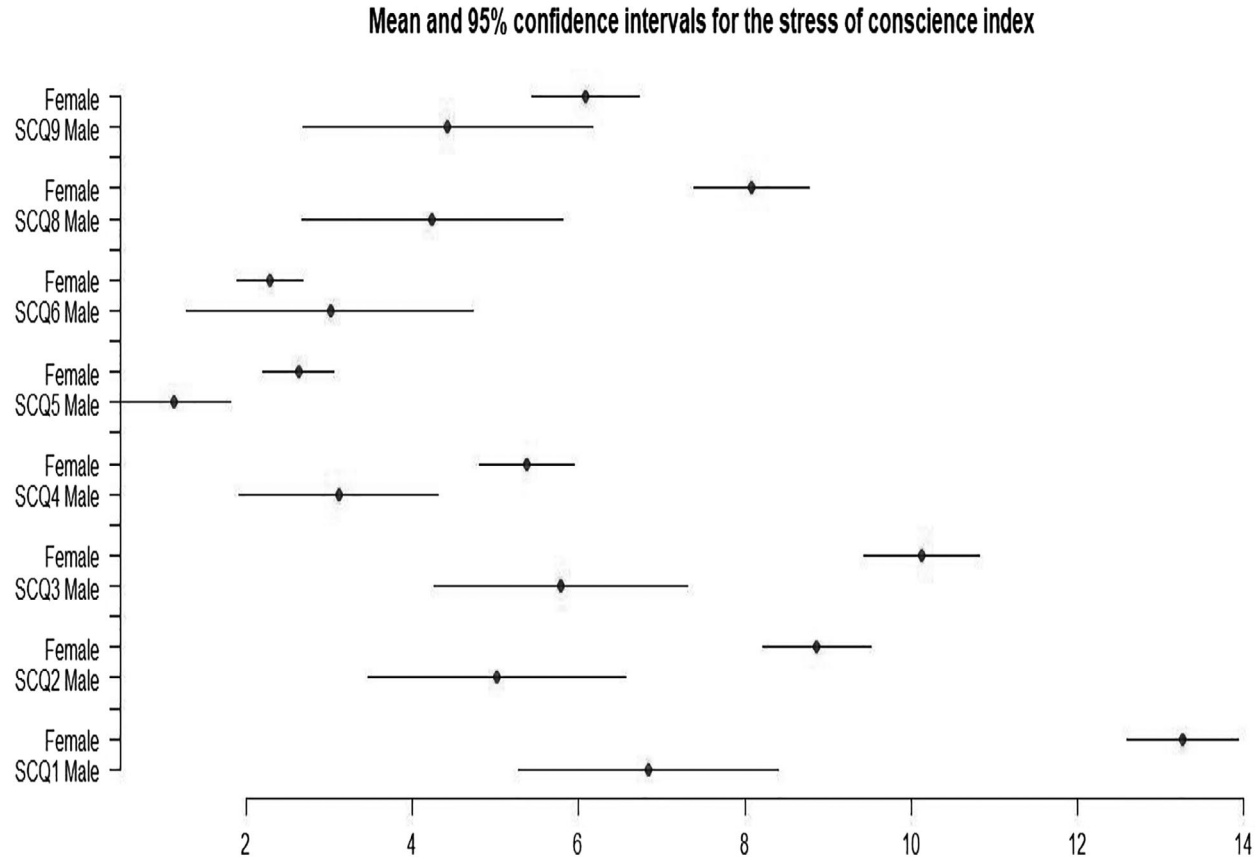

FIGURE 3 Mean values and 95% CIs of the SCQ index for female and male CPs.

For example, female critical care nurses reported significant higher levels of moral distress than males in the same profession [42]. Female psychiatric nurses scored higher levels of work-related stress than their male counterparts [43]. Levels of work-related stress were scored higher amongst female nursing staff and doctors in comparison to males in the same professions in a general hospital [44]. It is of great importance to continually follow gender differences in stress of conscience, it seems necessary to study which kind of support females may be in need of to reduce their levels of stress.

In the current study, the situation that generated the highest levels of stress of conscience amongst CPs both in HC and RCOP was 'lack of time to provide the care residents need' (SCQ-index item 1). This is line with previous results from numerous studies that have shown that this situation is what CPs assesses generates the highest levels of stress of conscience, and the figures have been shown to range from 9.4 to 12.94 [6,13,26,41]. In the current study, the corresponding figure was 13.63 amongst CPs working in RCOP, which is the highest figure reported so far. One possible contributing factor that partly might explain this high figure can be that CPs working in RCOP perceive that they are subjected to an increased workload and lack of time to perform their work tasks. The proportion of CPs working in RCOP that reported that they had too much to do in their work was 40% in the year 2005, this proportion had increased to 50% in 2015 [45]. No previous studies were found that have reported levels of stress of conscience amongst CPs working in HC, so no comparisons can be made. However, the CPs working in HC reported the SCQ-index item 1 to be 10.94 which also can be regarded as a relatively high figure as only one of the previous studies mentioned above has reported a higher number. The results are in line with previous results that have shown that CPs working in HC experience lack of time [25,46–47], and in 2005 36% of CPs working in HC reported that they had too much to do in their work, this figure had increased to 40% in 2015 [45]. As lack of time seems to be a common issue that generates high levels of stress of conscience amongst CPs working in both HC and RCOP, further research seems needed to investigate whether it is caused by residents caring needs due to multiple diseases and/or dementia, understaffing, poor work routines, lack of training/education or other factors.

Care providers working in RCOP assessed higher levels of stress of conscience compared with those working in HC. Results also showed that seven of the eight items in the SCQ were the most important items associated with the workplace RCOP. One study has shown that care providers working in RCOP in Sweden assess significant higher levels of work strain and work stress compared to CPs working in

HC [48]. In contrast, Sandberg et al. [23] show that personnel in HC assessed higher mean scores on job strain compared to a study amongst personnel working in RCOP [14]. It is possible that higher levels of work strain and work stress in RCOP to some extent can explain the higher levels of stress of conscience reported amongst CPs working in RCOP. However, it was unexpected that care providers in HC had lower levels regarding stress of conscience as they often work alone (cf. [49]), often must rely on their own competence and must leave the person (often alone) as the time schedule is tight (cf. [23]). Possible explanations can be that they at the same time can get some emotional distance towards the persons they care for as they continue to the next person on a different location and therefore do not know what is happening with the persons after they have left them (cf. [50]). A plausible understanding is that they do not witness things that can generate stress of conscience as often as CPs working in RCOP. To our knowledge, there are no studies available that have investigated CPs experiences of situations that generates stress related to troubled conscience in HC. However, it should be noted that the figures regarding stress of conscience in this study can be regarded as relatively high both in HC and in RCOP compared to previous results (see above). Results have shown that CPs working both in HC and RCOP report that they perceive that their working conditions have been deteriorating between the years 2005 to 2015 [45], thus, partly explaining the relatively high figures of stress of conscience both in HC and RCOP.

The results showed that the burnout dimension exhaustion was an important factor associated with the workplace RCOP. This result is not surprising since the CPs working in RCOP assessed higher levels of stress of conscience which in previous studies has been shown to be significantly associated with burnout [6,16,26]. Burnout has been shown to negatively affect the wellbeing of CPs and the care quality [51]. Consequently, it seems important to develop protective measures against burnout. Results from a systematic literature review pointed towards that work-directed and combined (i.e. work- and person-directed) interventions have potentially longer lasting effects on burnout compared with person-directed interventions amongst CPs working in RCOP. However, the authors concluded that the evidence is too scarce in order to make a clear recommendation for an intervention approach to prevent burnout amongst CPs [52]. One reflection is that it might be possible to reduce burnout levels with interventions aiming at reducing stress of conscience. Results have shown that interventions based on participatory action research (PAR) have been perceived by CPs to help them constructively deal with their troubled conscience in different situations [53–56]. A combined intervention consisting of both work-directed measures against burnout as well as measures aiming at reducing stress of conscience might be fruitful. To our knowledge, there are no studies available that have evaluated such interventions.

The results showed that the most important items associated with the workplace HC were social support from one's immediate superior (SocIS 2) and co-workers (SocIS 4 & 7). An understanding is that social support may have a buffering effect against stress of conscience and burnout, thus, partly explaining why CPs working in HC assessed lower levels of stress of conscience and exhaustion in comparison with CPs working in RCOP. It is possible that CPs working in HC perceive more social support partly because they have different expectations of getting support than CP's working in RCOP. Working in HC often means that CPs are working alone. In RCOP, CPs are typical working together with co-workers within one and the same residential care facility and often with one's immediate managers working within the same facility. Consequently, it is possible that CPs' expectations to have opportunities to meet one's co-workers or immediate manager and get social support from them might be higher amongst those working in RCOP compared with those working in HC. Studies have shown that there are two sides of expectations, when expectations are not met the negative feelings are stronger than the good feelings we get when expectations are met (cf. [57]). It is possible that the expectations regarding social support amongst CPs working in RCOP are not met, and in turn, this might generate negative feelings reflected in their assessments of social support. To our knowledge, there are no studies available that have investigated the role of expectations in relation to social support amongst CPs in HC and RCOP.

It is known that social support from supervisors can have a buffering effect against stress of conscience (e.g. [6]), but according to studies (e.g. [49]), relationships between CP and patients have been shown to be central. Building close, trusting relationships with clients and their families was supportive to HC' workers emotional well-being [49]. Trusting relationships in turn provide prerequisites for person-centred care. Perceived level of person-centredness has been shown to have a buffering effect on stress of conscience [58]. Relationships with agency supervisors and that HC workers work is valued have also been shown to be of importance. When care workers in HC felt seen and respected by clients and their families, they were better able to manage day-to-day challenges [49]. This kind of support and person-centredness might have a counteracting effect on stress of conscience.

Methodical considerations

The relatively low response rates are a cause of concern as it can be an indication that some bias can be present. It is not possible to make any conclusive comments about the non-respondents due to non-existing information about

them. However, according to anecdotal remarks made by managers, not all CPs use their work e-mail addresses and therefore did not answer the questionnaires. Another limitation that warrants consideration is the large proportion of missing values. One possible explanation for this might be the order in which the questionnaires were presented for the respondents. The PCQ was the second questionnaire and during a revalidation of the PCQ participants commented that some questions on the PCQ were hard to understand and difficult to answer [4]. Possibly, this might partly explain why approximately 15% of the respondents stopped responding at the point in which the PCQ was presented to them. It is not possible to perform any detailed evaluation of the potential bias that might be present due to these concerns raised above. However, the results are in line with previously results from a study conducted in the same municipal amongst the CPs working in RCOP [6]. Furthermore, in this study one item (SCQ 7) was excluded from the analysis due to a technical error. However, since the SCQ-index is a measure of stress of conscience on every single item, it can be used even when an item is excluded. The distribution of data was partly skewed and kurtosis (both positively and negatively depending in the item). However, this should not cause any substantial problems as the sample size was relatively large and the advantages of using PLSR. Advantages of using PLSR are that it can be used regardless of which scales of measurement data have and is robust regarding inadequacies, such as, skewness, multi-collinearity, misspecification of the structural model. Additional advantages of using PLSR are that it is usable when sample sizes are small in relation to many variables [38].

CONCLUSION

This study showed that CP in RCOP assessed higher levels of stress of conscience in comparison with those in HC. The burnout dimension exhaustion was found to be an important factor associated with the workplace RCOP. The most important items associated with the workplace HC were found to be social support from one's immediate superior and co-workers. Women assessed significantly higher levels of stress of conscience and exhaustion in comparison to men. Further research seems needed to investigate what the high levels of stress of conscience are caused by. It is of interest to continually follow levels of social support amongst CPs in RCOP as social support may act protective against stress of conscience. Person-centred care may be another protective factor that can buffer the effects of stress of conscience and thus need further investigation. Simultaneously, it is of great importance to continually follow gender differences in stress of conscience, it is also important to study which kind of support females may be in need of to reduce their levels of stress. Finally, a combined intervention consisting of both work-directed measures against burnout as well as measures aiming at reducing stress of conscience might be fruitful.

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AUTHOR CONTRIBUTIONS

Gunilla Strandberg was responsible for the study design. Johan Åhlin performed the statistical analysis. Johan Åhlin, Eva Ericson-Lidman and Gunilla Strandberg drafted the manuscript.

ETHICAL APPROVAL

Ethical approval to conduct the study was given by the Regional Ethical Review Board in Umeå for ethical vetting of research involving humans (dnr 2016/474-32).

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