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**Title:** Beyond the job demand control (-support) model : explaining stress reactions in nurses  
**Date:** 2012-06-19

Published as:

Abstract

This paper is a report of a study to develop and test the psychometric properties of the Occupational Coping Self-Efficacy for Nurses Scale. Coping self-efficacy beliefs are defined as self-appraisals of capabilities to cope with environmental demands. People with higher levels of coping self-efficacy beliefs tend to approach challenging situations in an active and persistent way, whereas those with lower levels of coping self-efficacy beliefs tend to direct greater energy to managing increasing emotional distress.

In 2006, 1383 nurses completed the following measures: Occupational Coping Self-Efficacy Questionnaire for Nurses, Coping Inventory for Stressful Situations Short Form, and Maslach Burnout Inventory. Based on a randomized split of the data, we conducted exploratory factor analysis on group 1 data (n = 691) and confirmatory factor analysis within the framework of structural equation modeling on group 2 data (n = 692).

The exploratory results revealed two factors: Coping Self-Efficacy to cope with the occupational burden (Cronbach alpha = 0.77) and Coping Self-Efficacy to cope with the relational burden (alpha = 0.79). In the confirmatory group, the two factor structure was tested against an alternative one-factor structure and confirmed as the best solution. Correlation patterns between the Occupational Coping Self-Efficacy for Nurses Scales, and both coping and burnout variables, supported the criterion-related validity of the Occupational Coping Self-Efficacy for Nurses dimensions.

Nurses can have two basic and distinct coping self-efficacy beliefs: beliefs about occupational burden and beliefs about relational difficulties in the workplace. Research is needed into how efficacy evaluations shift as a result of specific stress management interventions.

Keywords: Coping Inventory for Stressful Situations Short Form, instrument validation, Maslach Burnout Inventory, nurses, Occupational Coping Self-Efficacy Questionnaire for Nurses
4.1. Introduction

Among healthcare workers, nursing is one of the occupations identified as particularly stressful (McVicar 2003). The research evidence from studies of nurse stress carried out in different countries not only attests to the endemic and crossnational nature of the phenomenon, but also to how serious the problem is. For example, a study on a large sample of Swedish nurses revealed that >80% of the nurses reported high- or very high-job strain (Petterson et al. 1995). Moreover, two epidemiological studies showed that approximately 25% of European nurses are affected by burnout symptoms (Landau 1992), and 28% of Canadian nurses declared suffering from high psychological distress (Bellerose et al., 1995). The implications of the problem go beyond the concern for the nurse’s well-being because of the adverse effects that the prolonged experience of stress may have on his/her mental and physical health. As several authors (e.g. Garman et al. 2002) have argued, it is not unreasonable to expect nurse stress to interfere with the nurse’s performance and consequently with the care process.

To study the impact of emotionally charged relationships on stress and burnout, the Lazarus cognitive-mediation theory of stress is a possible conceptual framework (Lazarus 1991). According to this model, negative reactions to chronic occupational stressors stem from cognitive appraisal, which is the process that mediates between the environment’s demands, constraints and resources, and the individual’s goal hierarchy and personal beliefs. Lazarus (1999) identifies two simultaneous processes of appraisal influencing individual well-being: primary and secondary appraisal. Primary appraisal involves evaluating the personal relevance of a stressful situation (its motivational relevance) and the extent to which the situation is in keeping with personal goals (its motivational congruence). The fundamental question in primary appraisal is ‘whether anything is at stake’; if the answer is positive, a person will strive hard to attain the goal, despite discouragement or adversity (goal commitment). Possible appraisal outcomes are harm/loss (damage already occurred), threat (possibility of damage in the future) and challenge (an opportunity for growth, mastery or gain). Secondary appraisal refers to the evaluation of both coping options and outcomes in terms of accountability (who/what is responsible for the situation), future expectancy (likelihood of change), problem-focused coping (options for influencing the situation) and emotion-focused coping (ability to emotionally adapt to the situation). The main consequence of secondary appraisal is the type of coping strategy that an individual adopts (Lazarus 1991). Coping strategies are defined as ongoing cognitive and behavioural efforts to manage specific external and/or internal demands appraised as taxing or exceeding the resources of a person (Lazarus, 1999).
This theoretical framework is consistent with Bandura’s (1986) social cognitive theory, which emphasizes the relevance of self-efficacy beliefs. Both theories acknowledge the importance of self-appraisal beliefs. Indeed, appraisal may influence coping by directing attention towards certain environmental features or opportunities as well as internal resources such as coping self-efficacy (CSE) beliefs. A person’s CSE, i.e. someone’s self-appraisals of their ability to cope with environmental demands may influence their reaction to stress and its outcomes (Bandura et al. 1985). Efficacy beliefs can determine whether people will invest effort, and how long they will persist in their effort in the face of obstacles and aversive experiences. People with higher levels of CSE beliefs tend to approach challenging situations in an active and persistent way, whereas those with lower levels of CSE beliefs tend to direct greater energy to managing increasing emotional distress (Bandura 1986, 1997). High CSE has been related to a wide range of physiological measures including lower catecholamine responsivity during stress (Bandura et al. 1985) and reduced blood pressure response to behavioural challenge (Bandura et al. 1982). Higher CSE values were also associated with better psychological adjustment to highly stressful events such as abortion (Meuller & Major 1989) and physical assault (Ozer & Bandura 1990). Within occupational stress studies, Schwarzer (2003) showed that the stronger one’s perceived efficacy, the more proactive and persistent one’s efforts will be (proactive coping). Moreover, several researchers have investigated the additive, mediator and moderator role of CSE between stress and strain using both cross-sectional and longitudinal designs (e.g. Benight et al. 1999, Benight & Harper 2002, Krají et al. 2002, Benight & Bandura 2004). Krají et al. (2002), conducted a cross-sectional study in a community sample of 194 older people to evaluate the impact of CSE and coping strategies on stress. They demonstrated that CSE may have both a direct and an indirect effect on emotional well-being, as it influences distress levels as well as coping strategies: respondents with higher CSE used statistically significantly more task-oriented coping strategies and less emotion- and avoidance-oriented strategies. The authors suggest including self-beliefs of ability to cope with environmental demands when studying stress-coping processes. Benight et al. (1999) showed that perceived CSE works as a key mediator between disastrous events and traumatic, enduring distress symptoms. In addition to resource loss, the self-efficacy to cope with the aftermath of a hurricane was included as a second factor, as both a direct and mediating determinant of posttraumatic stress. Self-efficacy beliefs are domain-specific (Bandura 2001), i.e. they are very likely to differ depending on the activity to which they are related. That is why it is essential to include a sample of relevant cues in the development of a self-efficacy instrument.
4.2. The study

Aim

The aim of the study was to develop and test the psychometric properties of the Occupational Coping Self-Efficacy for Nurses (OCSE-N) Scale.

Instrument development

Item generation

For the item generation phase, a semi-structured interview was conducted with 62 nurses who were participating in a larger study on quality of working life in nurses. The participants were recruited from two general hospitals. To obtain a comprehensive item pool, sampling occurred across different wards (e.g. emergency, medical, surgical and community). Most (82%) participants were female, which approximates the distribution of nurses in the Italian healthcare context. The mean age was 40,11 years (SD = 9,2). To generate items, open-ended interviews were conducted to elicit information on the occupational stressors of nurses. Participants were asked ‘Excluding the problems that do not depend on your action and on your colleagues – e.g. salary –what is the main working problem that a nurse has to cope with today?’ and ‘What is your main problem at work?’ The participants’ responses were written down by the interviewer and a list of occupational stressors was developed. The list was reduced to nine occupational stressors by removing redundant answers and by grouping together similar responses. These nine occupational stressors were transformed into items by taking participants’ remarks and rewording them to encapsulate the self-appraisal of one’s ability to cope with each stressor. Eleven experienced health professionals (one psychologist, eight nurses and two head nurses) reviewed the questions before the scale was finalized (see Appendix).

Validity and reliability testing

The dimensionality of the scale was estimated through both exploratory and confirmatory approaches. Internal consistency of each resulting scale was estimated by computing Cronbach. Concurrent validity was assessed by estimating correlations between the OCSE-N dimensions and two external criteria: burnout dimensions and coping styles.
**Participants**

In consultation with the Umbria and Lazio Regional Departments of Health Care, nine hospitals were selected on the basis of their representative characteristics. All managers agreed to participate in the study. We randomly selected 2186 nurses, who were representative of nurses of the Central Italy (Umbria and Lazio regions) and 1405 nurses agreed to take part in the study, which was conducted in 2006. The sample represented a 64% response rate, fairly typical for surveys of this length (Gelsema et al. 2006). Participants were contacted at their place of work and received a questionnaire and an accompanying letter in which they were invited to participate in the study. The accompanying letter explained that the goal of the study was to examine ‘nurses’ quality of working life’. They were asked to leave their completed anonymous questionnaires in a sealed box placed in their room. Twenty-two incomplete protocols were excluded. Thus, the final sample consisted of 1383 nurses. We compared respondents with non-respondents on demographic parameters of gender and age. The 1383 participants were representative of the 2186 nurses who were asked to participate as regards these variables.

**Instruments**

**Demographic data**

Data on gender, age, marital status, working age and the area of nursing (critical area, medical/surgical area and community area) were collected using a specially designed form.

**Occupational Coping Self-Efficacy Scale for Nurses**

The items of the OCSE-N were developed on the basis of the previous item generation phase. The final version consisted of nine questions (see Appendix for the item content) with answers presented on a 5-point Likert type scale where 1 means ‘not at all easy to cope with’ and 5 means ‘totally easy to cope with’. Instructions were given as follows: ‘the following statements describe occupational stressful situations which nurses may cope more or less easily with. For each situation, please rate how confident you feel you can easily cope with it’.

**Coping strategies**

Ways of coping were measured using the Coping Inventory for Stressful Situations – Short Version (CISS-SV), a 21-item shortened version of the CISS (Endler & Parker 1999). For each coping item, the nurses indicated on a 5-point scale (1 = not at all and 5 = very much) the extent to which they had used that strategy in a stressful situation at work. Scores were calculated for the three scales: task-oriented coping (7 items, e.g. ‘Determine a course of action and follow it’), emotion-oriented coping (7...
items, e.g. ‘Become very upset’) and avoidance-oriented coping (7 items, e.g. ‘Go out for a snack or meal’). The Cronbach alpha reliability estimates were 0.75 for task-oriented coping, 0.82 for emotion-oriented coping and 0.78 for avoidance-oriented coping.

**Burnout measure**

To assess the nurses’ level of burnout, the Italian version of the Maslach Burnout Inventory (MBI) (Sirigatti & Stefanile, 1991) was employed. Participants were asked to rate, from 0 (never) to 6 (daily), how often they experienced feelings like those described in each of the 22 items. The questionnaire consisted of three dimensions: emotional exhaustion (9 items), such as ‘I feel frustrated by my job’; depersonalization (5 items), such as ‘I don’t really care what happens to some patients’; and personal accomplishment (8 items), such as ‘I feel very energetic’. The Cronbach alpha reliability estimates were the following: 0.88 for emotional exhaustion; 0.72 for depersonalization and 0.82 for personal accomplishment.

**Ethical considerations**

The study was approved by national and regional ethics committees. Informed consent was obtained from all participants. Data were anonymously gathered and the voluntary nature of the study was emphasized. Data were stored in accordance with the Italian Data Protection Act (2006) (http://www.garanteprivacy.it/garante/document?ID=1311248).

**Data analysis**

We tested the following hypotheses:

- the OCSE-N’s dimensions should be positively associated with coping strategies aimed at changing the situation (e.g. direct action or planning) and negatively associated with both emotion-focused (e.g. self-preoccupation) and avoidant strategies (e.g. behavioural withdrawal);

- the OCSE-N scores should also correlate with the burnout dimensions. Namely, as the burnout syndrome (Maslach 1993) represents a combination of an affective response (emotional exhaustion) that is similar to depression, a cynical and skeptical attitude towards work, colleagues and clients (depersonalization), as well as an evaluation of one’s efficacy in the job (personal accomplishment), the OCSE-N scores should be negatively correlated with both emotional exhaustion and depersonalization, and positively associated with personal accomplishment. Moreover, consistent with results of a meta-analysis (Pfenning & Husch 1994) and of a study by Glass and McKnight (1996), the sizes of the correlation estimates were expected to range from low to medium, according to Cohen’s classification of
effect sizes (Cohen 1988). After a screening of their quality, the data were randomly split into two
independent groups and then tested using exploratory factor analysis (EFA) for group 1 (n = 691) and a
confirmatory factor analysis (CFA) approach for group 2 (n = 692). According with the guidelines of
Tabachnick & Fidell (2001), in both groups the adequacy of sample size is considered very good (n >
500). As regards EFA, the maximum likelihood (ML) extraction was used with preliminary estimates of
 communalities obtained from the square of the multiple correlation coefficient of each variable with all
the other variables. Oblique promax rotation was chosen as the rotation method. The factor model
structure derived in the EFA was then tested for model fit using CFA. The CFA method enables making
comparisons of differing factor structures for a given set of data and can be used for both developing and
refining measurement instruments (Floyd & Widaman 1995). CFA was conducted with the AMOS
(Analysis of Moment of Structure) statistical software (version 5, SmallWaters Corporation, SPSS Inc,
Chicago, IL, USA; Byrne 2001) using ML estimates. Each of the specified models were compared with
the most restrictive model (the so-called null-model M0) (Byrne 2001). In the present case, M0
corresponds with the hypothesis that there are just as many uncorrelated factors as there are items, i.e. a
model without a factor structure. The model fit was assessed using the following reported fit indices: chi-
square, the rootmean-square error of approximation (RMSEA), the Comparative Fit Index (CFI) and
Akaike's information criterion (AIC). Chi-square tests the null hypothesis of perfect model fit where the
residual covariance equals zero. Unfortunately, the application of chi-square to large samples is
problematic because it is highly sensitive to even small amounts of unexplained covariance (Thompson
2004) so that, with a sufficient sample size, almost any model tested will have a statistically significant chi-
square value. The overall chisquare was included here for comparison purposes because it is widely
reported. The RMSEA examines the probability of close model fit and is considered a more appropriate
test, as it has been shown to be less affected by sample size (Floyd & Widaman 1995). RMSEA values
represent a covariance that is not explained by the model so that smaller values indicate better model fit.
Most investigators interpret the RMSEA as indicating a poor model fit when it is above some upper
bound, typically set between 0.05 and 0.08 (Thompson, 2004). The CFI, a revised version of the Bentler–
Bonett (Bentler & Bonnett 1980) normed Fit Index that adjusts for degrees of freedom (d.f.), ranges in
value from 0 to 1.00. It is derived from the comparison of a restricted model (i.e. one in which structure is
imposed on the data) with an independence (or null) model (one in which all correlations among variables
are zero) in the determination of goodness-of-fit. A CFI value of 0.90 has served as the rule-of-thumb
lower limit cutpoint of acceptable fit. To facilitate the comparison of different models, AIC is reported. A
difference of two or more in the AIC is required for each d.f. used to determine the best model, and the
model with the lowest AIC, given parsimony considerations, is the preferred model (Loehlin, 2004). All
subsequent testing of the data were based on the full sample (n = 1383). We explored possible
demographic differences on the scale(s) through the examination of t-test (gender) and Pearson's
estimates (age). Internal reliability was estimated by calculating the Cronbach alpha coefficient for the
scale(s) derived from the analysis and by checking whether every item increased Cronbach alpha.
Criterion validity was estimated using the stress model that was applied to the development of the scale.
Relations between the OCSE-N scores and the CISS-SV variables and the MBI dimensions were
examined using the Pearson product–moment correlations.

4.3. Results

The mean age of the respondents was 39.1 years (SD = 8.4); 22.6% (n = 312) were men and
77.2% (n = 1067) were women. Participant demographics are shown in Table 4.1.

Construct validity

Exploratory factor analysis.

Data screening showed that the assumptions of normality were not severely violated (-0.34 < skew
< 0.43; -0.34 < Kurtosis > -1.08; West et al. 1995). Both the Kaiser–Myer–Olkin Measure of Sampling
Adequacy (0.83) and Bartlett’s Test of Sphericity (χ²(36) 1989.63; P < 0.0000) indicated the factoriability
of the correlation matrix (Tabachnick & Fidell, 2001). Two factors met the commonly used Kaiser
criterion (eigenvalue values >1) for determining the number of factors to extract in factor analysis (χ²(19) = 90.71). Following the suggestions of Graham et al. (2003), Table 4.2, presents the factor loadings
included both in the pattern and in the structure matrix.

The two rotated factors accounted for 46.9% of the total variance. The first factor accounted for
34.4% (Eigenvalue = 3.09) of the total variance and consisted of six items that tapped the perception of
'CSE to manage the occupational burden'. The second factor accounted for 12.5% (Eigenvalue = 1.12) of
the total variance and contained three items that reflected the 'CSE to manage relational difficulties in the
workplace' (conflicts with colleagues, supervisors and healthcare workers).
Table 4.1: Demographics and characteristics of participants (N=1383)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>312 (22.6)</td>
</tr>
<tr>
<td>Female</td>
<td>1067 (77.2)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>169 (12.0)</td>
</tr>
<tr>
<td>30-39</td>
<td>578 (42.4)</td>
</tr>
<tr>
<td>40-49</td>
<td>419 (30.7)</td>
</tr>
<tr>
<td>50-59</td>
<td>183 (13.4)</td>
</tr>
<tr>
<td>60-69</td>
<td>17 (1.2)</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>3 (0.2)</td>
</tr>
<tr>
<td>Type of employment contract</td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>95.2</td>
</tr>
<tr>
<td>Temporary</td>
<td>4.8</td>
</tr>
<tr>
<td>Years of experience as nurses (%)</td>
<td></td>
</tr>
<tr>
<td>&lt; 5</td>
<td>199 (15.0)</td>
</tr>
<tr>
<td>5-9</td>
<td>212 (15.9)</td>
</tr>
<tr>
<td>10-14</td>
<td>292 (22.0)</td>
</tr>
<tr>
<td>15-19</td>
<td>173 (13.0)</td>
</tr>
<tr>
<td>&gt; 20</td>
<td>454 (34.1)</td>
</tr>
<tr>
<td>Type of clinical placement</td>
<td></td>
</tr>
<tr>
<td>General hospital</td>
<td>555 (41.7)</td>
</tr>
<tr>
<td>University hospital</td>
<td>608 (45.6)</td>
</tr>
<tr>
<td>Oncological hospital</td>
<td>169 (12.7)</td>
</tr>
<tr>
<td>Ward Type</td>
<td></td>
</tr>
<tr>
<td>Surgical wards</td>
<td>26.7</td>
</tr>
<tr>
<td>Medical wards</td>
<td>21.9</td>
</tr>
<tr>
<td>Emergency wards</td>
<td>13.0</td>
</tr>
<tr>
<td>Mixed wards</td>
<td>11.7</td>
</tr>
<tr>
<td>Psychiatric wards</td>
<td>3.2</td>
</tr>
<tr>
<td>Obstetric-Paediatric wards</td>
<td>12.2</td>
</tr>
<tr>
<td>Other Wards</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Confirmatory factor analysis

Although the EFA findings suggested that a two-dimensional construct underlies the OCSE-N, a careful examination of the factor loadings included in the structure matrix suggested that the possibility of considering one dimension could not be ruled out. Two-factor analytical models for the OCSE-N were specified: the one-factor model, which assumes that all OCSEN items load on a general composite CSE factor (M1); the two-factor oblique model, in which the CSE with general nursing burden and CSE concerning relational difficulties in the workplace, constitute two separate correlated dimensions (M2). The fit of the specified models are shown in Table 4.3.
Table 4.2: Factor loadings for specified two factor solution: exploratory factor analysis of the OCSE-N Items with promax rotation (N = 691).

<table>
<thead>
<tr>
<th>Item</th>
<th>F1</th>
<th>F2</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.74</td>
<td></td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.77</td>
<td></td>
<td>.42</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>.56</td>
<td></td>
<td>.66</td>
</tr>
<tr>
<td>4</td>
<td>.59</td>
<td></td>
<td>.61</td>
<td>.34</td>
</tr>
<tr>
<td>5</td>
<td>.46</td>
<td></td>
<td></td>
<td>.48</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>.60</td>
<td>.39</td>
</tr>
<tr>
<td>7</td>
<td>.68</td>
<td></td>
<td></td>
<td>.64</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>.92</td>
<td>.33</td>
<td>.85</td>
</tr>
</tbody>
</table>

Note: only factor loadings > 0.30 are shown.

Table 4.3: Comparison of OCSE-N confirmatory factor analytic models: Goodness of Fit Statistics (N = 692).

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>CFI</th>
<th>AIC</th>
<th>RMSEA</th>
<th>90% RMSEA CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0</td>
<td>1805.85</td>
<td>36</td>
<td>---</td>
<td>1823.85</td>
<td>.27</td>
<td>.26; .28</td>
</tr>
<tr>
<td>M1</td>
<td>464.40</td>
<td>18</td>
<td>.75</td>
<td>500.37</td>
<td>.15</td>
<td>.14; .16</td>
</tr>
<tr>
<td>M2</td>
<td>163,100</td>
<td>26</td>
<td>.92</td>
<td>201,10</td>
<td>.08</td>
<td>.07; .09</td>
</tr>
</tbody>
</table>

Note. CFI = comparative fit index; AIC = Akaike information criterions; RMSEA = root-mean-square error of approximation; $M_0 =$ independence model (i.e., in which all correlations among variables are zero); $M_1 =$ One factor model; $M_2 =$ Two factor model.

The best relative fit was found for M2. The comparison of the fit indices suggested that the two-factor model was better than the alternative ones. Specifically, the $\chi^2$ statistic was 163.10 based on 36 d.f., which was statistically significant. The CFI was 0.92, which is slightly higher than 0.90, the value typically considered as evidence of good fit (Hu & Bentler 1999). Similarly, RMSEA was 0.08, which falls within the cut-off points recommended by Hu and Bentler (1999), indicating acceptable model fit. Finally, the M2 model, given parsimony considerations, reported the lowest AIC. Examination of the modification
indexes (MIs) for clues to further model improvement demonstrated the error correlation between items 4 and 6 to be consistently large (MI = 24.61). However, as the M2 solution achieved an acceptable fit, and to avoid the acceptance of an overfitted model (Byrne 2001), we stopped including additional parameters. Among demographic differences, only age showed statistically significant differences with both scales: CSE to manage general nursing burden r = 0.14 (P < 0.001), CSE to manage the relational difficulties in the workplace r = 0.12 (P < 0.001).

**Reliability**

Cronbach alpha value estimates were satisfactory for the two subscales. For ‘CSE to manage general nursing burden’ alpha = 0.77; and for ‘CSE to manage the relational difficulties in the workplace’, alpha = 0.79.

**Criterion-related validity**

Table 4.4. shows the relationship of the OCSE-N factors with the CISS-SF dimension scores and the levels of burnout measured by the MBI. In accordance with our hypotheses, Pearson’s correlation coefficients between the OCSE-N dimensions and both the MBI variables and CISS-SF dimensions were all statistically significant. The OCSE-N dimensions were positively associated with task coping strategies and negatively associated with both emotion-focused and avoidant strategies. The OCSE-N Scales also correlated with the burnout dimensions. They were negatively correlated with both emotional exhaustion and depersonalization, and positively associated with personal accomplishment. These patterns of correlations support the construct validity of the OCSE-N.
Table 4.4 Pearson correlations between OCSE-N scales and MBI dimensions (N = 1383).

<table>
<thead>
<tr>
<th>Burnout Dimensions</th>
<th>Coping Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emotional</td>
</tr>
<tr>
<td></td>
<td>Exhaustion</td>
</tr>
<tr>
<td>1. CSE general nursing burden</td>
<td>-.31**</td>
</tr>
<tr>
<td>2. CSE about the relational difficulties on workplace</td>
<td>-.21**</td>
</tr>
</tbody>
</table>

Note. * p < 0.05; ** p < 0.01;

4.4. Discussion

Study limitations

This study has limitations that should be acknowledged. First, reliance on self-report data may have biased the results. Gathering self-reports on coping strategies, self-efficacy beliefs and burnout in the same questionnaire could lead to artefacts such as priming and consistency effects associated with the bias of common method variance which is expected to inflate the correlations between measures in our questionnaire. However, James et al. (1979) suggested that claims of method variance have more legitimacy and support when there appears to be something operating that results in a general and a widespread spurious inflation of the obtained relationships. This would imply that if method variance is evident and problematic, the correlation matrix should reflect this tendency by showing consistently high correlations across variables. Inspection of the Table 4.4. suggests that such a general artificial inflating mechanism is not evident. Nevertheless, our findings need to be replicated with additional studies in this area using more objective reports of occupational strain (e.g. diastolic blood pressure, levels of serum lipids, serum uric acid levels, etc.) and job performance (measures of turnover, absenteeism). Second, the generalizability of our results may be limited because the study was based on a selection of healthcare organizations in Italy; hence, the results are not representative for Italy as such. However, consistent with previous research, we found that CSE beliefs and coping strategies were negatively related to burnout.
dimensions. These outcomes offer some confidence that our sample and data were not greatly unrepresentative of other samples and data.

Factor structure and internal consistency.

We identified and tested the factor structure of the OCSE-N for two independent samples of randomly split data using EFA and CFA. Two different and correlated factors ($r = 0.52$) emerged that described the nurses’ self-appraisals of their ability to cope with occupational demands: ‘CSE to cope with the occupational burden’ and ‘CSE to cope with the relational difficulties in the workplace’. We found that the two-factor model fits significantly better than a single factor model, indicating the existence of an underlined bidimensional conceptual structure. Although a close inspection of MIs revealed one parameter representing correlated errors to account for misfit (between errors of items 4 and 6) we did not re-specify the model to avoid producing an overfitted solution. Indeed, following the suggestion of MacCallum et al. (1992, p. 501), ‘when an initial model fits well, it is probably unwise to modify it to achieve even better fit because modifications may simply be fitting small idiosyncratic characteristics of the sample’. The subscales were shown to be empirically distinct; an attribute which is regarded as desirable in self-efficacy instruments (Bandura, 2001) because interpretation is greatly simplified. The subscales showed adequate internal consistency estimates (0.77 and 0.79).

Criterion-related validity of the OCSE-N.

As predicted, the OCSE-N dimensions are related to the CISS-SV dimensions. All OCSE-N scores gave statistically significant results: (i) negative correlations with both the emotion-oriented coping and the avoidance-oriented coping scores; (ii) positive correlations with the task-oriented coping score. In sum, the coping strategies viewed as less adaptive (i.e., emotion-oriented and avoidant coping strategies) were associated with fewer CSE beliefs and the opposite pattern was found between OCSE-N dimensions and the more adaptive coping strategies (i.e., task-oriented coping). These results are consistent with expectations based on previous research on adaptive personality traits and coping (e.g., Hewitt & Flett, 1997), and provide support for the construct validity of the OCSE-N.

The pattern of associations between the OCSE-N and MBI Scales provides additional support for the construct validity of the OCSE-N dimensions. Based on these results, it appears that, in line with the theoretical construct, nurses with weaker perceptions of CSE report more burnout symptoms (high emotional exhaustion and depersonalization, and lower personal accomplishment) than their colleagues feeling more confident with their ability to cope with occupational stressors. One may state that,
considering the sample size, the amount of variance shared by the variables is fairly weak. They are, however, comparable with those reported by other authors in studies measuring similar constructs. Perhaps the low-variance shared by CSE dimensions and burnout dimensions may depend on an indirect relationship. As we saw above, self-efficacy beliefs may influence behaviours that decrease the likelihood of increased environmental stress, thus indirectly affecting distress symptoms (Bandura, 1997).

Finally, it seems that occupational CSE occurs more frequently among older employees, who have more working beliefs and burnout in the same questionnaire could lead to artefacts such as priming and consistency effects associate with the bias of common method variance which is expected to inflate the correlations between measures in our questionnaire. However, James et al. (1979) suggested that claims of method variance have more legitimacy and support when there appears to be something operating that results in a general and a widespread spurious inflation of the obtained relationships. This would imply that if method variance is experience. This is in line with the observation that among healthcare workers positive states and job satisfaction are positively related to age and work experience (Swanson et al., 1996). However, a cautionary note should be added because survival bias cannot be ruled out: those with lower self efficacy beliefs and/or higher burnout early in their careers are likely to quit their jobs, leaving behind the survivors, who exhibit higher levels of self-efficacy.

**Importance of occupational CSE beliefs**

It should be noted that many other self-regulation models also incorporate the dimensions identified by the OCSE-N. Ford (1992) makes a distinction between capability and context beliefs. Capability beliefs refer to whether one has the personal skills needed to function effectively ('Will I be able to do sport daily?'). Context beliefs refer to whether one has the responsive environment needed to support goal attainment ('Will my colleagues support me to attain this goal?).

Kagitcibasi (1994) argued that autonomy and relatedness to others are dual human needs, and self-regulation theory must recognize the interaction and the need to synthesize the two characteristics to explain goal-oriented action and to promote optimal human functioning. Furthermore, the evaluation of the construct of perceived CSE should find benefits from recognizing a subject who engages in individual efforts to address (occupational) group-based needs and goals. Indeed, people do not function in a social vacuum ‘...the behaviour of one person influences the behavioural options of another in ways that are not random...Self-regulation simply proceeds with regard to the group as a system concept rather than to the self-image’ (Carver & Scheier 1982, p. 131). Finally, the constructs detected by the OCSE-N are in accordance with the nursing perspective of Orem’s Self-Care Deficit Theory (Orem 1995), which posits the concept of nursing agency as a central construct. It refers to the knowledge and skills possessed by
nurses and used to help others understand their self-care demands or to use their self-care agency. Nursing agency includes specific actions, teaching, or provision of a supportive environment. A self-care deficit exists when self-care agency is less than that required to meet self-care requisites, and nursing agency is required to meet self-care demands.

Conclusion

Our findings suggest that nurses can have two basic and distinct CSE beliefs: beliefs about general occupational burden and beliefs about the relational difficulties in the workplace. They occur simultaneously to shape adjustment to occupational stress. In this regard, the OCSE-N may be useful in refining the stress-coping model; moreover, the theoretical and practical value of the occupational CSE construct could be evaluated also within stress management interventions among healthcare workers. Indeed, a particularly important area for future investigation will be the study of how efficacy evaluations shift as a result of specific stress management interventions.

4.5. References


Appendix

Instructions and items content of the Occupational Coping Self Efficacy Questionnaire for Nurses (OCSE-N).

“The following statements describe occupational stressful situations which nurses may cope more or less easily. For each situation, please rate how confident you feel you can easily cope with it”....

1) Difficulties with the patients;
2) Relational difficulties with your supervisor;
3) Insufficiently defined procedures
4) Relational difficulties with patient relatives
5) Difficulties in deciding how to do the work
6) Physical tiredness
7) To do a lot of tasks in the same time
8) Relational difficulties with colleagues
9) Relational difficulties with the others health care workers (physicians, etc).