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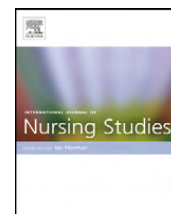
Stress, coping and burn-out in nursing students

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ABSTRACT

Aim: To explore the relationship between sources of stress and psychological burn-out and to consider the moderating and mediating role played sources of stress and different coping resources on burn-out.

Background: Most research exploring sources of stress and coping in nursing students construes stress as psychological distress. Little research has considered those sources of stress likely to enhance well-being and, by implication, learning.

Method: A questionnaire was administered to 171 final year nursing students. Questions were asked which measured sources of stress when rated as likely to contribute to distress (a hassle) and rated as likely to help one achieve (an uplift). Support, control, self-efficacy and coping style were also measured, along with their potential moderating and mediating effect on burn-out.

Findings: The sources of stress likely to lead to distress were more often predictors of well-being than sources of stress likely to lead to positive, eustress states. However, placement experience was an important source of stress likely to lead to eustress. Self-efficacy, dispositional control and support were other important predictors. Avoidance coping was the strongest predictor of burn-out and, even if used only occasionally, it can have an adverse effect on burn-out. Initiatives to promote support and self-efficacy are likely to have the more immediate benefits in enhancing student well-being.

Conclusion: Nurse educators need to consider how course experiences contribute not just to potential distress but to eustress. How educators interact with their students and how they give feedback offers important opportunities to promote self-efficacy and provide valuable support. Peer support is a critical coping resource and can be bolstered through induction and through learning and teaching initiatives.

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What is already known about the topic?

- Research into stress in nursing students frequently uses the term stress to denote psychological distress.
- Little research considers those sources of stress likely to enhance well-being and, by implication, learning.
- Little research considers the moderating and mediating effects between sources of stress and coping measures.

What this paper adds

- Measuring course demands rated as sources of eustress as well as distress is critical to reducing burn-out and maintaining effective learning in nurse education.
- From the range of coping resources available, those that look to bolster self-efficacy, control and support are likely to be most beneficial.

1. Introduction

Some of the sources of stress experienced by nursing students are experienced by students generally. Sources of academic stress include exams and assessments (Howard,

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2001; Kipping, 2000) and the timing of exams, as an element of the curricula, impacts particularly on the work-life balance of female students with children. This is a characteristic more common among nursing students compared to other student groups (Pryjmachuk and Richards, 2007). In relation to workload, nursing students experience longer hours of study and an associated lack of free time (Jones and Johnston, 1997; Lo, 2002; Mahat, 1998).

The main clinical sources of stress relate to placement. Some of these are common to those reported by practicing nurses, such as working with dying patients; conflicts with other staff; insecurity about clinical competence; inter-personal problems with patients and work overload (Rhead, 1995; Snape and Cavanagh, 1995). Additional stressors faced by nursing students include developing particular clinical skills and, more broadly, a perceived lack of practical skills (Hamill, 1995; Mahat, 1996, 1998). The time pressures in which they are expected to operate on placement, together with the evaluations of clinical experience are frequently reported (Jack, 1992). Student status on placement has been reported and aligned to this are the attitudes held by nursing staff towards students on placement (Mahat, 1996, 1998; Kirkland, 1998; Howard, 2001). Initial placements also produce disproportionate anxiety (Jack, 1992).

1.1. Coping with stress

In Lazarus and Folkman's (1984) Transactional model of stress, the primary appraisal refers to the initial perception about a stressor and whether it is judged to be positive (leading to eustress), negative (leading to distress) or benign. The secondary appraisal refers to the coping responses the individual draws on. Interacting between the perception of stressors and how one responds are a number of moderators. These include self-efficacy (Schau-broeck and Merritt, 1997; Lo, 2002); perceived control, support and coping style (e.g. Folkman, 1997; Karasek and Theorell, 1990; Van der Doef and Maes, 1998, 1999).

Lazarus and Folkman (1987) identified two types of coping – problem and emotion based. Both can be used to effect but emotion based coping is more frequently expressed in ineffective ways. Ceslowitz (1989) found a beneficial effect to clinical performance and to the health consequences of stress as a result of problem-based coping and others claim similar benefits to nursing student learning, performance and well-being (Hamill, 1995; Lindop, 1999; Tully, 2004). Chang et al. (2006) summarise evidence that emotion-focused coping is more likely to be detrimental to health and Lambert et al. (2004), found escape-avoidance coping correlated with reduced mental health in a sample of Japanese nurses.

Lo (2002) explored stress and coping in over 100 Australian and New Zealand nursing students in a three-year longitudinal study. As well as finding similar results on coping, Lo found friends, family and spouses or partners were important sources of emotional support and often, with family and spouses, financial support too. Payne (2001) claimed that it was the support available more than the type of coping used that was the strongest predictor of nurses' well-being. Lucas et al. (1993) attributed the low

psychological distress and high job satisfaction among nurses working on intensive and critical care units to the level of support available. This, in turn, was attributable to the nature of the work. Other research also claims a beneficial effect among nurses who have a strong sense of control in the work they do. Boey (1999) found that nurses in Singapore who scored high on well-being reported a strong internal locus of control, though they were also much more likely to report strong family support too.

As with control, support and coping behaviour, students high in self-efficacy are much more likely to achieve in their academic and clinical work (Harvey and McMurray, 1994; Laschinger, 1996; Andrew, 1998). However, it is important to note that self-efficacy, as well as being a dispositional attribute, is a quality affected by experience. Greenglass and Burke (2000), for example, found that nurses working in Canadian hospitals undergoing change were much more likely to report a strong sense of self-efficacy if they believed they had been adequately consulted and informed on the need for change compared to those nurses who believed they had not. It is possible, however, that it was the self-efficacy characteristic that affected how those changes were appraised rather than variations in how different managers introduced the changes affecting self-efficacy. In short, one cannot assume a causal relationship – measures of support, control, coping style and self-efficacy are likely to be affected by as well as affect what is perceived as a source of stress and, in turn, its subsequent impact on well-being.

Wu et al. (2007) explored the relationship between burn-out and professional efficacy in 495 nurses in China. It is one of the few studies that attempts to consider these different coping resources and moderators. An inverse relationship was found between control and emotional exhaustion. Younger nurses were more likely to report burn-out and those low in educational status were more likely to report low professional efficacy. Interestingly, they found that control, support and coping style were strong predictors not just of burn-out but of professional efficacy.

1.2. Measuring stress

Many of the inventories used to measure sources of stress in nursing students have been accused of not being psychometrically rigorous (Jones and Johnston, 1999).

Moreover, what is common to all the existing inventories to explore sources of stress (including the BSSI, Beck and Srivastava, 1991; the Expanded Nursing Stress Scale, Clarke and Ruffin, 1992; the SNSI, Jones and Johnston, 1999 and the Stress in Nursing Students questionnaire, Deary et al., 2003) is that their main focus is to ask respondents to rate perceived stressors in terms of the extent to which they are distressing. The assumption is that if course and placement experiences are reported as less distressing the students' well-being, insofar as it is caused by the demands of the course, will be healthier and that they will learn more. Such an approach ignores the fact that those stressors may, at different times, contribute to eustress or a level of stress that enhances performance. Deary et al. (2003), for example, measured burn-out and stress in nursing students and found increased perceived stress combined with increased levels

of personal achievement, suggesting that stress experiences can contribute to eustress. They found that burn-out, while usually used with qualified rather than nursing students, was a significant outcome measure: all three components – emotional exhaustion, depersonalization and personal achievement were related to aspects of coping, distress and attrition levels.

Gibbons et al. (2009a) developed and tested an inventory on sources of stress in nursing students. This instrument required respondents to rate sources of stress twice, once in terms of their potential to cause distress (a hassle) and once in terms of their potential to help one achieve (an uplift). An exploratory factor analysis revealed that the sources of stress were grouped into three factors: Learning and teaching; Placement-related and Course organisation. They found that nursing students reporting caseness on the GHQ, or who were at risk of developing a transient stress related illness, did not report sources of stress as more distressing than those not reporting caseness but they did rate those sources of stress as providing far fewer opportunities to achieve. This finding challenges the traditional view – that reducing distress will improve well-being, rather, what is more important, is perceiving opportunities to achieve. Such a result questions the assumption that stress denotes psychological distress, a conception common to much earlier research.

1.3. Aim

The aim of this study was to explore stress and coping in nursing students. The Transactional model of stress underpinned the assumptions tested. The model allows for a stressor to be rated in terms of its potential negative effects (distress) and its positive effects (eustress). Both were measured along with some important coping resources – self-efficacy, control, support and coping style. Unlike earlier research, this study explores the effect of these coping resources as moderators and mediators between the appraisal of sources of stress and their effect on burn-out.

The two principle hypotheses were: There will be significant correlations between the sources of stress, as a potential for eustress and distress, and burn-out in nursing students. The second stated: Self-efficacy, control, support and coping style will have a significant moderating and mediating effect between perceptions of stress and burn-out.

2. Methods

A convenience sample of 280 nursing students were invited to take part by the researcher at the start of a course lecture and 171 (61%) consented. The inclusion criteria were students from all nursing specialisms in one institution in their final year.

2.1. Measures

The *Index of Sources of Stress in Nursing students* (ISSN) consisted of 29 items measuring sources of stress in three factors – learning and teaching, placement-related and course organisation demands and were followed by items measuring support. A continuous response scale was used, with each item rated twice – once from its perceived distress, called a 'hassle', and once from its perceived eustress, called an 'uplift'. A non-applicable option was also included. A rating scale from 0 to 5 was used, 0 indicating that it was no source and 5 an extreme source of distress or eustress.

This was followed by four items generated by the author measuring context control or one's sense of control in a given situation, and dispositional control, and a further four measuring course and career satisfaction. Respondents answered the support, control and satisfaction items on a five point Likert response scale from strongly agree to strongly disagree. All these items had earlier undergone reliability and validity analyses. The Cronbach's Alpha for these items groups as factors, for control, support and satisfaction each exceeded .7 and were judged to have face validity (Gibbons, 2008).

The three hassle and uplifting factors and the support factor had been subjected to an exploratory and later confirmatory factor analyses (Gibbons et al., 2009a,b). The exploratory factor analysis on the support items showed they loaded well on to one factor, explaining 53.4% of the variance in hassles ratings and 63.3% in uplifting ratings.

2.2. The Generalized Self-Efficacy Scale (Schwarzer, 1992)

This scale consists of ten items and participants respond on a four point scale from 'not at all true' to 'exactly true'. It is a context free measure of self-efficacy.

2.3. The Maslach Burn-out inventory (Maslach and Jackson, 1986)

This 22 item scale measures the three components of burn-out – emotional exhaustion, depersonalization and personal achievement. Participants responded on a seven point scale from 'never' to 'Everyday', scored 0–6, on how frequently they experienced the state described. The cut-off points in the Maslach Burn-out inventory were used (Maslach and Jackson, 1986).

2.4. The Marlowe–Crowne Social Desirability (10 item version) (Crowne and Marlowe, 1960)

This measure required students to choose whether a series of statements were true or false for them. A score of 1 was given for each answer concordant with the scoring algorithm. It measured a response tendency and was used to establish a possible social desirability bias across the instrument.

2.5. The Brief COPE (Carver, 1997)

This 28 item scale measures a broad range of coping responses. The items are context free and respondents answer on a four point frequency scale from 'I usually don't do this at all' to 'I usually do this a lot'. Carver (1997) recommends that researchers using the instrument subject it to their own factor analysis. This was done in a previous study and four coping factors were identified.

These were labeled approach coping; avoidance coping; altering consciousness and seeking support. They explained 57.99% of the variance in coping scores. The Cronbach's Alpha exceeded .8 for each factor and they were judged to have face validity (Gibbons, 2008).

Reliability and validity studies with a range of populations are described by the authors of the Generalized Self-Efficacy Scale; the Maslach Burn-out inventory; and the Marlowe–Crowne Social Desirability. The remaining items measured demographics.

2.6. Procedure

After being briefed during a course lecture on the project by the researcher, they were invited to attend a computer suite later that week. At that point the aims were re-iterated along with the ethical considerations.

2.7. Ethical considerations

The study was approved by the University ethics committee. The information sheet handed to students emphasized that participation was entirely voluntary; that they were free to leave at any time; that being involved would have no affect on course progression and that confidentiality would be maintained at all times. These points were re-iterated verbally by the researcher before the students began the questionnaire, especially that participation or non-participation would not affect course progression. The researcher was unknown to the students and was not one of the lecturers. This is important as it could otherwise have introduced a perceived power dimension affecting students' decision to participate or not.

2.8. Data analysis

The data were analysed using SPSS version 15.1. The Transactional model of stress (Lazarus and Folkman, 1984) informed the order in which the variables were entered into the hierarchical multiple regression analyses. The sources of stress, relating to the primary appraisal, were entered in block one: Learning and teaching, placement demands and course organisation issues when rated as both a hassle and uplift, along with support when rated as a hassle. Measures on sex, age and social desirability were also added. If this final variable was found to be a significant predictor it would suggest a possible social desirability affect but it was not. The secondary appraisal relates to coping resources and the coping and moderator factors were entered here – in block two those factors that related to the cognitive appraisal: support rated as an uplift; dispositional control, context control and self-efficacy, and in block three the four cope factors. These were entered separately from those in block two because they relate more to how one responds to stress rather than primarily being part of the cognitive appraisal. Entered in the final block were the moderators that had been identified following a process testing for interaction effects between each predictor and potential moderator variables.

To establish the moderators that were the result of interaction effects, separate regression were carried out following the guidelines proposed by Baron and Kenny (1986): The three sources of stress factors and support as a hassle were combined individually with each of the moderator variables, i.e. with support as an uplift; with self-efficacy; dispositional control and context control; and with each of the four cope factors. Those interaction variables that explained a significant amount of variance in burn-out were fed into the final block of the hierarchical multiple regression. If the moderator identified as a result of this interaction process was the product of random error it would be unlikely to explain a significant variance when tested in the final multiple regression analysis for each well-being measure.

The variables with the lowest Beta values were then removed one at a time and the regression analysis repeated until the final model was judged to be the most parsimonious – until the Adjusted R squared approximated the R squared with the greatest amount of variance explained. The regression coefficients table for the final model in each case is shown below. In each case, the

Table 1
Correlations between factors, support and burn-out.

Factor/predictor	Burn-out		
	Emotional exhaustion	Depersonalization	Personal achievement
Learning and teaching hassles	.329[*]	.239[**]	−.282[**]
Learning and teaching uplifts	−.301[**]	.001	.229[**]
Placement-related hassles	.252[**]	.305[**]	−.179[*]
Placement-related uplifts	−.215[**]	−.113	.222[**]
Course organisation hassles	.275[**]	.255[**]	−.172[*]
Course organisation uplifts	−.161[*]	.120	.151
Support hassles	.231[**]	.307[**]	−.158[*]
Support uplifts	−.299[**]	−.130	.137
Self-efficacy	−.384[**]	−.050	.316[**]
Dispositional control	−.505[**]	−.089	.212[*]
Context control	−.456[**]	−.131	.199[*]
Approach coping	.264[**]	.322[**]	.091
Avoidance coping	.521[**]	.296[**]	−.193[*]
Altering consciousness	.332[**]	.286[**]	.039
Seeking support	.199[*]	.208[**]	.051

[*] $p < .05$.
[**] $p < .01$ (*n* ranged between 159–171).

Table 2
Multiple regression with emotional exhaustion (burn-out).

Model	Un-standardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	5.508	.764		7.214	<.001
Learning and teaching hassles	.117	.079	.091	1.486	.139
Age	−.166	.070	−.138	−2.366	.019
Support uplifts	−.166	.076	−.134	−2.191	.030
Avoidance coping	.508	.125	.275	4.052	<.001
Altering consciousness	.264	.114	.143	2.320	.022
Dispositional control	−.338	.083	−.268	−4.074	<.001
Self-efficacy	−.583	.190	−.191	−3.065	.003
Course Organisation Hassles-Dispositional Control Moderator	.258	.087	.168	2.958	.004

a Dependent variable: emotional exhaustion.
R squared = .533, Adjusted R squared = .508.

assumptions for using regression were checked and confirmed (Table 1).

3. Results

The model explained 50.8% of the variance in emotional exhaustion scores. The variance is explained in the Beta values in Table 2. The largest variance in emotional exhaustion scores was explained by avoidance coping – as this type of coping increased so did scores on emotional exhaustion; conversely, the stronger the evidence of dispositional coping the lower were the scores on emotional exhaustion. While not quite as strong, a similar picture was found with self-efficacy and, to a lesser degree, with support uplifts and age.

In relation to the predictor, Course Organisation Hassles-Dispositional Control, in Table 2, Fig. 1 shows that when dispositional control is high (the bottom line), as course organisation hassles increase, so too does emotional exhaustion. When dispositional control is average, as course organisation hassles increase, to a moderate amount so too do emotional exhaustion scores (the middle line). When dispositional control is low (the top line), as course organisation hassles increase emotional exhaustion declines somewhat. This suggests dispositional control is not effective in helping to buffer the effects of course organisation hassles on emotional exhaustion.

The model explained 22% of variance in depersonalization scores. The more support was rated as a hassle the higher were scores on depersonalization; as avoidance coping increased so did depersonalization and the more placement opportunities were perceived as an opportunity to achieve the lower were scores on depersonalization.

In relation to the predictor, placement-related hassles-approach coping, in Table 3, Fig. 2 shows that when approach coping is high (the top line), as placement-related hassles increase, so too does depersonalization. When approach coping is average, as placement-related hassles increase, to a moderate amount so too does depersonalization (the middle line). When approach coping is low (the bottom line), as placement-related hassles increase depersonalization falls. This suggests approach coping is not effective in
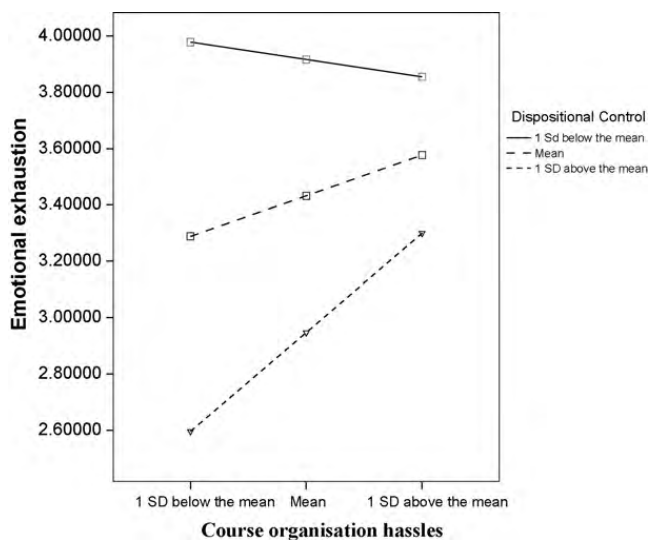

Fig. 1. Slope graph testing the interaction between dispositional control and course organisation hassles on emotional exhaustion.
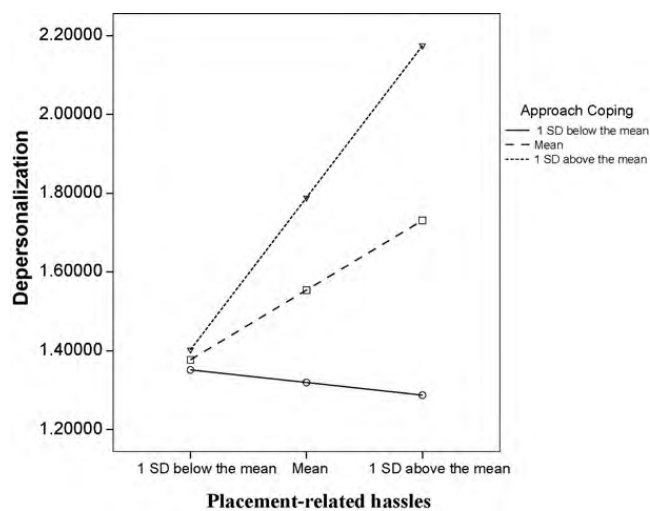

Fig. 2. Slope graph testing the interaction between approach coping and placement-related hassles on depersonalization.
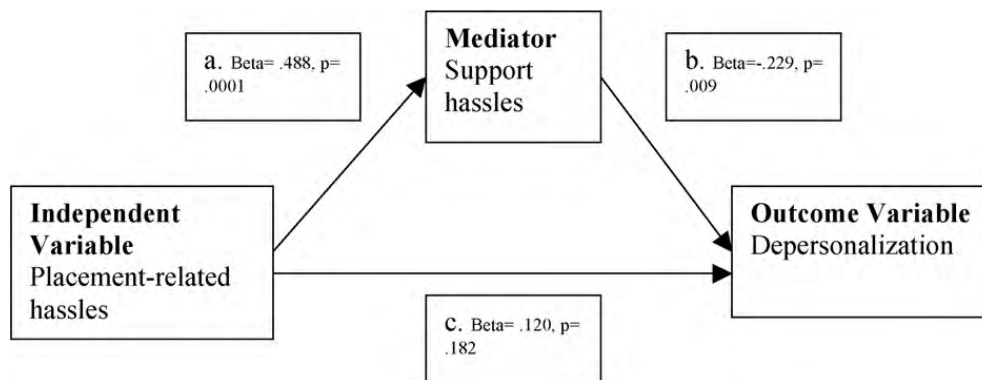
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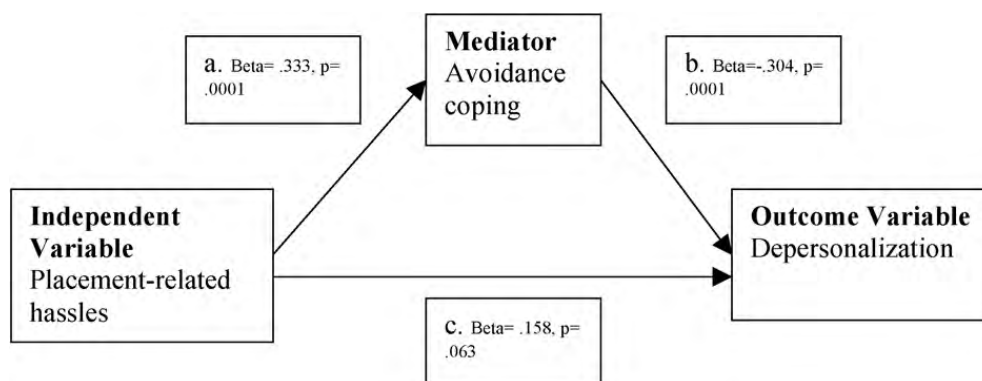**Fig. 3.** Support hassles mediator.

Fig. 4. Avoidance coping mediator.

Table 3
Multiple regression with depersonalization (burn-out).

Model	Un-standardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	1.131	.537		2.106	.037
Learning and teaching uplifts	.129	.094	.123	1.371	.173
Placement-related hassles	−.078	.078	−.095	−1.002	.318
Placement-related uplifts	−.258	.114	−.213	−2.272	.025
Age	−.114	.065	−.135	−1.754	.082
Support hassles	.220	.070	.278	3.136	.002
Approach coping	.170	.105	.150	1.612	.109
Avoidance coping	.251	.117	.193	2.142	.034
Altering consciousness	.155	.111	.120	1.397	.165
Course organisation uplifts support uplifts moderator	−.147	.089	−.128	−1.651	.101
Placement-related hassles-approach coping moderator	.223	.099	.168	2.243	.027

a Dependent variable: depersonalization.
R squared = .284, Adjusted R squared = .220.

helping to buffer the effects of placement-related hassles on depersonalization.

Placement-related hassles was significant in block one but not in block two of the regression. Two of the four variables introduced into block two were significant and were tested as possible mediators. Figs. 3 and 4 below report the mediating effects of support hassles and avoidance coping between placement demands and depersonalization. Tables 4 and 5 show the mediated and unmediated values.

The unmediated paths in Tables 4 and 5 suggest that placement-related demands, when rated as a hassle, is a

good predictor of depersonalization. However, Figs. 3 and 4 demonstrate that there are two underlying variables that explain this apparent relationship. These are support, when that support is rated as a hassle, and avoidance

Table 4
Unmediated and mediated values between placement-related hassles and depersonalization (with support hassles mediator).

	Beta value	p value
Unmediated path	.246	.002
Mediated path	.120	.182

Table 5
Unmediated and mediated values between placement-related hassles and depersonalization (with avoidance coping mediator).

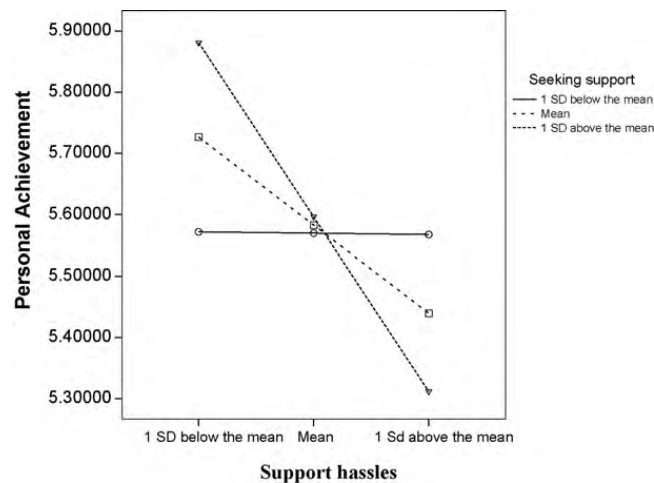|	Beta value	p value
Unmediated path	.263	.002
Mediated path	.158	.063

Fig. 5. Slope graph testing the interaction between seeking support and support hassles on personal achievement.

coping. When these predictors are tested in regressions, placement-related hassles is no longer significant (the unmediated paths).

The model explained 20.7% of the variance in personal achievement scores.

The stronger students' self-efficacy the higher their personal achievement; the more learning and teaching demands were rated as distressing the lower scores on personal achievement.

In relation to the predictor, support hassles-seeking support, in Table 6, Fig. 5 shows that when seeking support is high (the top line), as support hassles increase, personal achievement decreases dramatically. When seeking support is average (the middle line), as support hassles increase, personal achievement declines. When seeking support is low (the horizontal line), as support hassles increase, personal achievement remains unchanged. This suggests that increases in support hassles have the most adverse affect on personal achievement for those who express a preference for support.

4. Discussion

This study sought to explore the sources of stress that are likely to contribute not just to distress but to eustress and to look at the relationship between sources of stress and burn-out. Earlier research with nursing students had only explored stress as a potential for distress and burn-out (e.g. Deary et al., 2003). This is the first study to explore the role of coping and self-efficacy not just as a predictor of burn-out but in terms of the extent to which these predictors might have a moderating and mediating role with stress as a potential for eustress as well as distress.

The correlations between the predictors – the sources of stress and coping resources and burn-out (Table 1) support the assumptions of the Transactional model (Lazarus and Folkman, 1987). As the factors – learning and teaching demands, placement demands and course organisation demands – rated as hassles, increased, emotional exhaustion and depersonalization increased and personal achievement decreased. When the factors were rate as uplifts the opposite was found. This section will discuss, in turn, the regression findings and evidence of moderation and mediation with each component of burn-out.

5. Emotional exhaustion

As shown in Table 2, as avoidance coping increased so did the scores on emotional exhaustion. With the exception of avoidance coping, on all these measures the relationship was inverse – the stronger the evidence of dispositional control and self-efficacy, the more support was rated as an uplift or potential for eustress, the lower were the scores on emotional exhaustion. Similarly, older students reported lower emotional exhaustion. This may suggest that the greater life experience mature students bring the less inclined they are to use avoidance coping and the more confident they are at being selective in the support they seek on the course and on placement. This interpretation concurs with the correlations between the predictors and burn-out (Table 1) and with the results of an earlier study which found that the support valued most was from peers and from tutors able to offer not necessarily more time but a better quality of interaction in the time they did offer (Gibbons et al., 2008).

Dispositional control and self-efficacy were also significant predictors (Table 2) and it is likely that those

Table 6
Multiple regression with personal achievement (burn-out).

Model		Un-standardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
3	(Constant)	2.647	.879		3.010	.003
	Learning and teaching hassles	−.226	.078	−.221	−2.908	.004
	Placement-related uplifts	.143	.097	.110	1.474	.143
	Social desirability	.876	.400	.160	2.191	.030
	Self-efficacy	.619	.173	.266	3.587	<.001
	Support hassles-seeking support moderator	−.231	.091	−.185	−2.529	.012

a Dependent variable: personal achievement.
R squared = .232, Adjusted R squared = .207.

stronger in these qualities are not just more likely to have a tendency to be pro-active and to exercise mastery in different situations but will also be more selective in utilizing the support that is the most effective from the range of support available. Conversely, those lower in dispositional control and self-efficacy may be less assertive in seeking the support that could offer most help. This may go hand-in-hand with a tendency to employ more avoidance coping. Interestingly, the converse was not true – approach coping was not a significant predictor of any component of burn-out.

Employing altering consciousness explained a significant variance in emotional exhaustion scores. Items for this factor referred to alcohol and drug use and religion and meditation. It might be that those who turned to alcohol and drugs were more likely to experience higher emotional exhaustion, and it is possible that this type of coping was one of the means for expressing avoidance coping. This would concur with the variance in emotional exhaustion explained by avoidance coping. There is considerable evidence here and more broadly across the literature for nurses and nursing students, that avoidance coping is ineffective coping (Lazarus and Folkman, 1987; Hamill, 1995; Chang et al., 2006).

Dispositional control is ordinarily regarded as an effective coping resource (e.g. Fisherman, 1987; Lindop, 1999; Antai-Ontong, 2002), however, for the interaction between course organisation hassles and dispositional control (Fig. 1) the Beta value is positive. This suggests that the more the moderator is used the *higher* the score on emotional exhaustion. It may be that those with a stronger dispositional control are frustrated more by experiences where they are unable to exert control – such as listening to other students present, cancelled classes, how tutors respond, the timing of feedback on assignments – compared with those low in dispositional control.

6. Depersonalization

The smaller variance the instrument explained in relation to depersonalization (Table 3) concurs with other findings. Schaufeli et al. (1996), suggest, for example, that depersonalization is unlikely to be experienced by nursing students because they are early in their nursing career. However, some studies have found it predictive of attrition and well-being in nursing students (e.g. Deary et al., 2003). Ratings on support hassles explained the largest variance in depersonalization scores – the more the support available was rated as a hassle the higher tended to be the score on depersonalization. Conversely, the more placement-related experiences were rated as uplifting the less students felt depersonalized and alienated from those they work with, be that nursing colleagues, patients and university staff visiting them on placement.

The interaction between placement-related hassles and approach coping (Fig. 2) suggests that those who were more likely to engage in approach coping experienced *greater* depersonalization from higher placement-related demands. This is interesting because as nursing

programmes have changed from the apprenticeship to the academic model reported stress has increased as the course progresses (Jerlock et al., 2003). However, the stresses often relate more to the academic challenges than to placement demands and yet for the findings on this outcome measure it is not learning and teaching demands but placement-related ones that form part of this moderator. It could be that, as a vocational course, when the demands on placement, compared to those related to their university studies, become more distressing students used more approach based coping as they attempt to develop and put into practice the broad range of clinical skills they need. While approach coping may reap longer term benefits to learning and reduced burn-out it can be distressing in the short-term. This could account for high scores on depersonalization. Conversely, it is possible that the students' responses reflected a critical and intense period in their studies and it was not so much that the approach coping used was less than effective but that placement and university demands were high.

Support hassles was found to have a mediating effect between placement-related hassles and depersonalization (Fig. 3 and Table 4). Whilst placement-related hassles appeared to account for a significant variance in depersonalization, the test for mediation suggested it related more to how support was rated: If the support from nursing colleagues, placement mentors and personal tutors, was rated as ineffective and contributing to their distress then this appeared to compound the difficulty in completing placement tasks, leaving the student feeling disenfranchised and alienated (depersonalized) from patients and from those they work with.

It seems logical that a student might respond to such a pattern of experience by employing more avoidance coping – and if one is using avoidance strategies when placement demands increase those demands are more likely to contribute to distress, in the form of depersonalization (Fig. 4 and Table 5).

It is important to be aware that experiences and relationships outside the course also contributed to burn-out. For some, the demands of the course might put a strain on existing relationships outside the course. For others those high demands will consolidate and strengthen relationships between the student and their friends, partner and family. A sense of meaningfulness in these relationships might have a positive impact on reducing burn-out.

Avoidance coping might be used more if one's attempts to seek support have been unsuccessful. If either the coping strategy or the support available is inefficient it is likely to compromise the extent to which the other is effective.

7. Personal achievement

The relatively small amount of variance explained in personal achievement (Table 6) suggests that the instrument was not as sensitive at detecting those factors that were the main contributors to levels of personal achievement. It could be that the experiences that contribute most

to personal achievement relate to factors outside the course. Or, as a component of burn-out, and therefore a syndrome of distress, personal achievement may not be a measure sensitive to positive states of eustress.

Of the three factors – learning and teaching, placement-related and course organisation – it was learning and teaching experiences that were the strongest predictor of personal achievement. This seems at odds with some of the earlier regression findings, for example the regression with depersonalization found placement demands a significant predictor (Table 5). However, that it related to learning and teaching demands here may be because, in the university, students can turn to other students. For this reason they feel less depersonalized but if, in the university, a teaching experience is perceived as less than effective, the missed learning opportunity could compound students' attempts to achieve, leading to lower personal achievement. It could also be that ratings of learning and teaching are affected by the work demands faced by the teaching staff. Faculty in this School, as in many other Schools of Nursing, teach, tutor and assess more students more frequently than teaching staff elsewhere in the university. This School also has two intakes of undergraduate students a year. This may add to staff burn-out as the academic year progresses and this may, in turn, affect the quality of teaching.

Earlier studies had found that as ratings of distress increased in some areas, personal achievement actually increased (Deary et al., 1996, 2003; Gibbons, 1998; Murray-Gibbons and Gibbons, 2007) but there was no such evidence here, not just when the stressors were rated as potential hassles but as potential uplifts. It was anticipated that the factors as uplifts would have been significant predictor. That few were is psychologically significant. Both uplifts and hassles were rated on a five point scale and the uplifting mean (3.045) is higher than for hassles (2.449), suggesting respondents did not have a difficulty in construing and rating stress as a potential to achieve. Nevertheless, the sources of stress, when rated as a hassle, were a stronger predictor of burn-out compared to when rated as an uplift. This may indicate that the burn-out well-being measure used was more sensitive and responsive to distress, or that the predictor variables are utilized more in response to experiences likely to lead to distress than eustress. However, when support was rated as an uplift it was a significant predictor of lower emotional exhaustion and placement-related demands, rated as an uplift, were a significant predictor of reduced depersonalization. This suggests that these areas offer important opportunities to help students achieve.

The tendency to give socially desirable answers was also a predictor of personal achievement. The items on this scale focus on one's reactions to others, such as 'I have never intensely disliked anyone' (item 116) and how one reacts to others is likely to have some impact on, as well as be affected by, levels of personal achievement.

The 'support hassles-seeking support' interaction (Fig. 5) predicted a significant variance in measures of personal achievement. This suggests that support hassles had a negative impact on personal achievement for those who sought support as a coping strategy. It seems that

being cognizant of why a potential source of support, such as a personal tutor or nursing colleague, is not helpful causes more distress compared to those who know the support is ineffective but do not reflect on why. It is not surprising that avoidance coping was such a strong predictor, though its low mean compared to other types of coping indicates the strong adverse affect it can have, even when used only periodically.

Course organisation features relate to the smooth running of the course and it is more likely that they will contribute to distress when those features are rated as ineffective and less likely that they will be rated as a source of eustress when those features are acceptable. The course organisation demands are analogous to Herzberg's Hygiene factors in his theory of motivation (1959). These are features that, if present, do not increase motivation or satisfaction but if absent do contribute to dissatisfaction. This could explain why course organisation demands, as a potential for eustress, was not a predictor. That course organisation as a factor significantly interacted with other predictors (e.g. in Fig. 1) does suggest that the items that make up this factor remain in the instrument but are rated on the hassles scale only.

It was anticipated that learning and teaching as an uplift would predict healthy well-being measures but this was not found. This may reflect the point that burn-out measures may be more responsive to distress than eustress. It may be that, as the course nears its completion, the students are prioritizing course demands and focusing on this means that experiences of good teaching have less of an impact. They may have become accustomed to good teaching and therefore find it less uplifting. It might also be that the quality of learning and teaching has changed because of the accumulative demands on the teaching staff.

Previous research suggested that dispositional control was a good predictor of coping but, in relation to emotional exhaustion, when dispositional control was combined with course organisation hassles, it was a significant predictor of *higher* emotional exhaustion. It seems that those with this tendency are frustrated more by experiences where they are unable to exert this tendency. Overall, however, the evidence here suggests that those high in dispositional control, self-efficacy and more mature students may be more pro-active and assertive in selecting from the available support that which they judge to be most effective. It may be that those lower in these tendencies may be less discriminating in the support they use.

There were some limitations to the study: It relied on self-reported responses and respondents were final year students. These were selected because they had more academic and clinical experience to draw on but that very experience is likely to affect the appraisals and responses given compared to students earlier in their studies. A longitudinal methodology, beginning with first year students would negate this problem and the weaknesses associated with the cross-sectional design used here.

8. Recommendations

All students can improve their coping. These results suggest that support opportunities and placement

demands can offer important eustress experiences that help students achieve and learn.

The evidence suggests that initiatives that look to bolster student self-efficacy, control and support would help. For example, through induction, social events and learning and teaching initiatives involving peer interaction; through the support offered by personal tutors, tutors and lecturers.

Student self-efficacy could be bolstered by validating student learning verbally in response to contributions in lectures and tutorials; in the feedback given to students during and after simulated and real clinical experiences, and in the written comments made on students' work. Making it a policy to learn students' names in tutorials and referring to them by name in response to comments will help students feel validated and valued. None of this is recommending what is likely to be established practices but it serves to beg the question if more can be done, remembering that small changes can have large effects.

Promoting Problem Based Learning has been shown to be effective not just for pedagogic reasons but because of the sense of control and empowerment students experience as well as the support benefits that come from co-operative learning (Dunlap, 2005).

The evidence here on avoidance coping shows that ineffective strategies can have adverse effects even when used infrequently. Awareness of this is important and such information could usefully be conveyed to students, along with strategies to promote effective coping. This could be done through stand alone workshops early in the course as well as being built into the psychology component of their nursing degree.

Approach coping was not found to be predictive. This is not to question the efficacy of this coping and not to argue against its inclusion in any stress management initiative. Rather to recognize that its benefits are likely to become evident in the medium to long term and other strategies such as promoting support, control and self-efficacy are likely to have more immediate benefits.

These findings suggest that teaching colleagues, while managing considerable teaching and research workloads, must not lose sight of the fact that changes, even small changes, in how they interact with their students in teaching and pastoral roles can have dramatic effects. Becoming or remaining cognizant of one's coping style and the small positive changes they could make will contribute to improvements in student well-being and learning.

The evidence that uplifts as well as hassles are important predictors suggests that attempts to understand sources of stress must consider both if one wants to understand the main influences on student well-being. This is critical within higher education because of its implications for student learning and attrition and because, for nursing students, their performance has a direct bearing on fitness to practice and patient safety.

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