



Emotional intelligence: Its relationship to stress, coping, well-being and professional performance in nursing students

Jitna Por^{*}, Louise Barriball, Joanne Fitzpatrick, Julia Roberts

King's College London, United Kingdom

ARTICLE INFO

Article history:

Accepted 27 December 2010

Keywords:

Emotional intelligence
Stress
Coping
Well-being
Nursing students

SUMMARY

Emotional intelligence (EI) has been highlighted as an important theoretical and practical construct. It has the potential to enable individuals to cope better and experience less stress thus contributing to a healthy and stable workforce.

The study aimed to explore the EI of nursing students ($n = 130$, 52.0%) and its relationship to perceived stress, coping strategies, subjective well-being, perceived nursing competency and academic performance. Students were on the adult pathway of a nursing diploma or degree programme in one Higher Education Institution (HEI) in the United Kingdom (UK). A prospective correlational survey design was adopted. Three methods of data collection were used: i) A self-report questionnaire; ii) an audit of students' academic performance; and iii) mapping of EI teaching in the curricula.

Emotional intelligence was positively related to well-being ($p < 0.05$), problem-focused coping ($p < 0.05$) and perceived nursing competency ($p < 0.05$), and negatively related to perceived stress ($p < 0.05$). The findings suggest that increased feelings of control and emotional competence assist nursing students to adopt active and effective coping strategies when dealing with stress, which in turn enhances their subjective well-being. This study highlights the potential value of facilitating the EI of students of nursing and other healthcare professions.

© 2011 Elsevier Ltd. All rights reserved.

Introduction

Nursing is regarded as a demanding and stressful profession (Jones and Johnson, 2000; Watson et al., 2008). Several studies have found that high levels of occupational stress experienced by nurses have contributed to feelings of inadequacy, self-doubt, lowered self-esteem, irritability, depression, somatic disturbance, sleep disorders and burnout (Chang et al., 2005; Watson et al., 2008). Supernumerary nursing students have to cope with stress associated with academic demands, clinical placements and financial constraints. It is estimated that up to 25% of the UK's nursing students drop out of their nurse preparation programme (Buchan, 2006) and stress has been highlighted as an important risk factor for attrition (Evans and Kelly, 2004; Evans et al., 2007). Many nursing students appear to experience considerable emotional distress leading to gradual disengagement and voluntary withdrawal later in the programme (O'Donnell, 2009).

There is increasing interest in how people process emotionally relevant information. The ability to process it efficiently and accurately can have an effect on an individual's life outcomes such as achieving success at work and their general well-being (Salovey

and Grewal, 2005). The suggestion that people differ in their emotional skills and that such skills can be measured has attracted much attention and research (Segal, 2002; Schutte et al., 2007). The meta analysis by Schutte et al. indicated that emotional intelligence (EI) is associated with better health and dealing effectively with emotions contributes to one's well being. Schutte et al.'s work was expanded by Martins et al. (2010). Based on 105 effect sizes and 19,815 participants, their results support previous findings in regarding the value of EI as a plausible health predictor. Having the ability to read and manage emotions would seem to be an important skill and research in the EI level of nursing students is, therefore, important.

Background literature

The concept of EI was first proposed by Salovey and Mayer (1990). They argued that EI is a type of social intelligence that involves a person's ability to monitor their own and others' emotions, to discriminate among them and to use that information to guide their thinking and actions. EI has its roots in the notion of social intelligence as first proposed by Thorndike (1920). This early work was largely overlooked until Gardner (1983) developed his theory of 'multiple intelligence'. Gardner (1983) and other contemporary scholars on intelligence (Sternberg et al., 2000) recognized that a model of intelligence based only on intellectual capacity is insufficient to

^{*} Corresponding author. Florence Nightingale School of Nursing, King's College London, JCMB, 57 Waterloo Road, London SE1 8WA, United Kingdom. Tel.: +44 20 7848 3590; fax: +44 20 7848 3555.

E-mail address: jitna.por@kcl.ac.uk (J. Por).

explain human capabilities and behaviour in real life. Gardner's (1983) theory of multiple intelligence established the importance of 'intrapersonal' and 'interpersonal' intelligence and described interpersonal intelligence as the ability to understand other people and to work cooperatively with them, while intrapersonal intelligence involves the capacity to form a truthful model of oneself and to use this to operate successfully in life.

Emotional intelligence encompasses the human skills of empathy, self-awareness, motivation, self-control and adeptness in relationships (Bar-On, 1997). It involves verbal and non-verbal assessment, expression of emotions and the use of emotions in solving problems (Mayer and Salovey, 1993). Mayer and Salovey (1997) subsequently revised their model to emphasize the cognitive components of EI in the tradition of standard intelligence to reflect the potential for intellectual as well as emotional growth.

There are two main approaches to the study of EI, namely: the ability approach and the mixed approach. Those who adopt the ability approach conceptualise EI as a form of cognitive ability separated from personality construct (Salovey and Mayer, 1990; Mayer and Salovey, 1997), while those who advocate the mixed approach define EI as a mixture of abilities and other personality traits (Goleman, 1995; Bar-On, 1997). The different approaches have resulted in different types and dimensions used in the development of various measures (Gowing, 2001). The Schutte Emotional Intelligence Scale (SEIS) (Schutte et al., 1998), a reliable and valid measure of EI as conceptualised by Salovey and Mayer (1990) is used in this study.

Emotional intelligence brings together the fields of emotions and intelligence by viewing emotions as useful sources of information that help individuals to make sense of and navigate the social environment (Salovey and Grewal, 2005). It is important for nurses and nurse educators to understand the concept of EI and be aware of the research and theoretical constructs upon which it is based. Furthermore, the application of EI concepts in pre-registration nursing may provide fresh insights into nursing recruitment, retention and ultimately patient/client outcomes.

There is evidence to indicate that EI is associated with health status and health behaviour (Spence et al., 2004; Gannon and Ranzijn, 2005). A direct link has been demonstrated between EI and both physical and psychological health (Slaski and Cartwright, 2003; Tsaousis and Nikolaou, 2005). Individuals who can regulate their emotional states are healthier and EI appears to be potentially useful in reducing stress (Pau and Croucher, 2003; Gerits et al., 2005). Health benefits are linked to the ability to accurately perceive and appraise one's emotional state, know how and when to express feelings and effectively regulate mood states, thus reducing negative health outcomes (Ciarrochi et al., 2002).

Other key studies indicate that EI predicts some unique variance in life satisfaction beyond personality and demographic variables (Bastian et al., 2005; Gannon and Ranzijn, 2005). These studies used a cross-sectional correlational design which does, however, raise difficulties in establishing the causal direction of each correlation. Each approach to measuring EI can influence the validity of the construct as some characteristics overlap with personality traits. A recent meta-analysis investigating the relationship between EI and health by Schutte et al. (2007) indicates that overall, there are significant relationships between EI and mental health, psychosomatic health and physical health.

There is an existing research base that links EI with stress management, problem-solving skills, well-being and mental health (Ciarrochi et al., 2002; Gerits et al., 2005). The majority of studies reviewed indicate a relationship between EI, stress, coping strategies and health (Ciarrochi et al., 2002; Pau and Croucher, 2003). For example, individuals in the study by Pau and Croucher (2003) with high EI suffered less perceived stress and experienced better health and well-being. Conversely, those with low EI cope less well with stressors and therefore experience more stress. Gohm et al. (2005)

concluded that EI may protect people from stress as high EI is related to active coping and better adaptation. The use of EI concepts may, therefore, provide insights into strategies to help foster nurses' engagement in practice and improve nurse retention with subsequent positive impacts on patient outcomes.

A substantial body of literature has been devoted to establishing whether measures of EI act as predictors of student academic success. Several studies have found a positive association between EI and academic achievement (Schutte et al., 1998; Jaeger, 2003; Parker et al., 2004). Other studies, focusing specifically on first year university students have produced mixed results (Newsome et al., 2000; O'Connor and Little, 2003). To date, the evidence is equivocal and few empirical studies have investigated the direct relationship between EI and nursing practice.

Rochester et al.'s (2005) study ($n = 17$) of graduate adult nurses in Australia used backward mapping to identify a range of EI capabilities as significant factors for high early career performers. Methodological issues detracted however from the rigour of the study. The study was part of a larger project evaluating undergraduate programmes which involved a number of professional disciplines. There were no specific criteria for sample selection and the selection was based solely on the opinion of the manager who identified a particular nurse as functioning at a level of excellence in comparison to their peers. Similar issues apply to studies by Humpel and Caputi (2001) and Akerjordet and Severinsson (2004), with small sample sizes and limited details regarding both the data collection methods and the tools employed. What is clear, however, is that EI in the context of nursing practice raises many questions including, for example, its impact on how nurses behave in clinical situations and professional decision-making. At present, the association between EI and nursing practice also remains equivocal.

Methods

The present study

The aim of the study was to measure the EI of nursing students registered on adult nursing programmes and explore its relationship with their perceived stress, coping strategies, subjective well-being, perceived nursing competency and academic performance. The study also included examination of programme curricula for evidence of EI content/teaching. Ethical approval for the study was granted by the Research Ethics Committee of the participating HEI.

Design

The study adopted a prospective correlational survey design with three methods of data collection: i) a self-report questionnaire, ii) an audit of students' academic performance; and iii) mapping of EI teaching in the curricula.

Data collection instruments

The questionnaire was divided into six sections. The first five sections included established measurement instruments and the last section focused on demographic data. All five instruments had well established reliability and validity, the key features of which are described below.

The Schutte Emotional Intelligence Scale (SEIS) (Schutte et al., 1998)

The SEIS is a reliable and valid measure of EI developed by Schutte et al. (1998) through principal component, orthogonal-rotation and factor analysis. The 33 items loading on factor one represent all features of the early conceptual model of EI developed by Salovey and Mayer (1990). Participants rate their agreement with each of the 33

statements using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The total score can range from 33 to 165. Higher total scores indicate higher EI.

The Perceived Stress Scale (PSS-10) (Cohen et al., 1983)

The PSS-10 comprises 10 items measured on a 5-point Likert scale (0 = never, 4 = very often). It measures the degree to which situations in life are appraised as stressful within a month preceding the completion of the scale. Possible scores range from 0 (no stress) to 40 (high stress).

The Ways of Coping Scale Revised (WCS) (Folkman and Lazarus, 1986)

The WCS scale contains a wide range of thoughts and acts that people use to deal with the internal and external demands of specific stressful encounters. It consists of 66 items comprising eight subscales. The problem-focused subscales include, planful problem solving, confrontive coping and seeking social support. The emotion-focused subscales include positive reappraisal, self-controlling, escape-avoidance, accepting responsibility, and distancing. The scale is scored on a 4-point Likert scale from not used (0) to used a great deal (3). The WCS items were analysed using alpha and principal factoring with oblique rotation (Folkman and Lazarus, 1986).

The Satisfaction with Life Scale (SWLS) (Diener et al., 1985)

The SWLS is a 5-item self-report measure used to assess a person's global judgment of life satisfaction. Respondents indicate the extent to which they agree or disagree with each item on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). High scores indicate more life satisfaction. The scale does not assess satisfaction with specific life domains such as health or finance, but allows the respondent to judge, integrate and weigh these domains in terms of their own values.

The Short Nursing Competence Questionnaire (SNCQ) (Watson et al., 2002)

This scale consists of 18 items that assess the perceived nursing competence of the participants. Participants are asked to indicate their response to each item as 'always', 'usually', occasionally' or 'never' with scores of 4, 3, 2 and 1 respectively. The possible range of scores is 18 to 72.

Demographic data collected included participants' age, gender, ethnic background and highest educational qualification at the point of entry to the programme. Academic performance data were collected from the participants' academic profiles.

Sampling strategy and data collection procedure

The sample consisted of pre-registration adult branch nursing students ($n = 130$) representing a response rate of 52.0%. A pack containing the participant information sheet, consent form as required by the Ethics Committee, questionnaire, and a self-addressed envelope were distributed to all eligible nursing students ($n = 250$) at the end of a keynote lecture on *Literature search* by the researcher. Potential participants were asked to complete and return it to the investigator by internal mail, using the pre-addressed envelope. Participants signed a consent form to allow access to their examination grades. The Grade Point Average (GPA) comprised of the mean grade of five modules taken in the first year of study.

Data analysis

Data were entered into an SPSS for Windows 15.0 database. Descriptive and inferential statistical analyses were used including Spearman's rho, Kruskal–Wallis Test, stepwise multiple regressions

and Cronbach's alpha. Programme documentation was analysed using a modified version of Miles and Huberman's (1994) and Woods et al.'s (2002) analysis framework. The deductive analysis framework facilitated inductive category formation. The analysis was continued by combining the specific categories with similar content into more generic categories.

Results

Description of the respondents

A total of 130 student nurses (117 females; 13 males) completed the questionnaire. The sample was predominantly female with a mean age of 28 years (SD 9.5). Half the sample ($n = 66$, 50.8%) were enrolled on a three year nursing diploma programme, a third ($n = 43$, 33.2%) were undertaking a three year nursing degree programme and less than one fifth ($n = 21$, 16.0%) a two year accelerated diploma programme for graduates. The educational profiles of participants at the point of entry were varied from non vocational qualification level 3 to graduates at master's level. The majority of the sample considered themselves to be British ($n = 62$, 47.7%), while the remainder of the sample reported themselves as African ($n = 24$, 18.5%), Caribbean ($n = 7.5$, 4%), Asian ($n = 6$, 4.6%), or other ($n = 31$, 23.8%) which included mixed race respondents and non-British Europeans.

Reliability testing

Cronbach's alpha was calculated and was high in all the five instruments providing evidence of internal reliability. This ranged from 0.82 for SEIS to 0.91 for WCS-Revised with 0.86 for SWLS, 0.87 for PSS-10 and 0.90 for SNCQ. The results support the previous reliability findings of the instrument developers.

Respondents' perceived EI, stress, ways of coping, well-being and nursing competence

In Table 1, the mean score of EI for the sample ($n = 130$) was 124.9 (SD 11.6). Although male students scored slightly higher than the female students (127.9 and 124.6 respectively), the Mann–Whitney test found no significant gender difference in EI scores ($Z = -0.780$, $p > 0.05$).

The mean score of PSS was 15.9 ($n = 130$). The degree students reported the highest level of perceived stress compared to the accelerated students or diploma students which was statistically significant ($p < 0.01$). The most frequently used coping strategy was reported to be 'planful problem-solving' ($n = 69$, 52.8%) and the least frequently used was 'escape-avoidance' ($n = 39$, 30.2%). Almost two-thirds of the participants reported that they were satisfied with their life ($n = 89$, 68.0%) with less than a fifth rating themselves as not satisfied ($n = 17$, 14.0%). The mean score of SWLS from the sample was 23.7, ($n = 130$, SD 4.2).

The mean score of SNCQ for the sample ($n = 130$) was 57, (SD 7.9). Almost all participants reported 'usually' to 'always' striving for optimal standards of care ($n = 126$, 97.0%), communicating concise and appropriate information as necessary to members of the healthcare team ($n = 126$, 97.0%) and recognizing legal responsibilities in clinical practice ($n = 124$, 95.0%). The least reported nursing competencies were related to teaching and community care. There were significant differences in the EI score, perceived stress, coping strategies and perceived nursing competency between the participants from the different educational pathways. The diploma students had the highest EI score and the lowest level of perceived stress, whereas the degree students had the lowest EI score and the highest level of perceived stress.

Table 1

Descriptive statistics of EI, perceived stress, subjective well-being, perceived nursing competency, age and gender.

	Age	EI	Perceived stress	Subjective well-being	Perceived nursing competency
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
<i>Gender</i>					
Female (n = 117)		124.6 (11.5)	15.9 (7.1)	23.7 (4.2)	57.1 (8.1)
Male (n = 13)		127.9 (12.7)	15.7 (4.8)	23.9 (4.8)	55.9 (6.6)
<i>Educational pathway</i>					
Diploma (n = 66)	31.9 (10.7)	127.8 (11.1)*	14.2 (6.1)**	22.9 (3.8)	58.9 (7.7)**
Degree (n = 43)	24.7 (7.1)	121.1 (12.5)	18.7 (8.1)**	24.0 (4.4)	53.4 (7.8)
Accelerated (n = 21)	27.7 (5.6)	123.6 (9.2)	15.5 (5.1)	25.7 (4.7)	58.0 (6.8)
Total (n = 130)	28.8 (9.5)	124.9 (11.6)	15.9 (6.9)	23.7 (4.2)	57.0 (7.9)

* $p < 0.05$.** $p < 0.01$.

Correlations of EI, perceived stress, subjective well-being, perceived nursing competency and GPA

Table 2 shows the correlation of EI, participants' age, highest educational qualification at the point of programme entry, perceived stress, subjective well-being, perceived nursing competency and GPA. Spearman's rho was used for all the correlation tests. Students with the highest educational background had the strongest correlation with EI ($r_s = 0.23$, $p < 0.01$), followed by age ($r_s = 0.18$, $p < 0.05$). There was a strong negative correlation between EI and perceived stress ($r_s = -0.40$, $p < 0.01$). Perceived nursing competency was the most positively related to EI ($r_s = 0.32$, $p < 0.01$), followed by subjective well-being ($r_s = 0.27$, $p < 0.01$).

The relationships between EI and the subscales of the WCS showed that planful problem-solving had the strongest correlation with EI ($r_s = 0.35$, $p < 0.01$) followed by positive reappraisal ($r_s = 0.32$, $p < 0.01$), self-controlling ($r_s = 0.29$, $p < 0.01$) and seeking social support ($r_s = 0.19$, $p < 0.05$) and was negatively related to escape-avoidance ($r_s = -0.26$, $p < 0.05$).

EI and the programme curricula

Analysis of the programme curricula, and individual module handbooks indicated that there was limited evidence of the incorporation of EI components into the pre-registration curricula. Only two out of five modules undertaken by students included some aspect of self-awareness, interpersonal skills, stress and coping.

Predictors of EI

Table 3 presents the predictors of EI using simultaneous multiple regression as the predictors are of comparable importance to the research problem and there is no basis for considering any particular predictor as causal (Polit and Beck, 2008). All the available independent variables and the top three out of eight most frequently used coping strategies were directly entered into the equation. Almost 40% of variation in EI can be explained by a set of independent variables including age, gender, subjective well-being, perceived

stress, perceived nursing competency and coping styles ($R^2 = 0.39$). Among these predictors, perceived stress had the strongest impact on EI, which explained 15.5% of the variance in EI followed by perceived nursing competency (9.2%), planful problem-solving and subject well-being (5.1%, 2.1% respectively).

Discussion

Emotional information is one of the primary forms of information which communicates the state of basic feelings from one individual to another and EI is an intelligence that has to do with discerning and understanding emotional information (Mayer and Salovey, 1997). The findings of this study revealed that the level of EI among student nurses was comparable with those studies using the same SEIS tool with undergraduates in Australia and those found in year 1 to year 5 dental students in the U.K. (Pau and Croucher, 2003; Spence et al., 2004) but lower than the professional psychotherapists who are experts in helping clients deal with emotional issues. The results conform to expected between-group differences on EI and one would expect psychotherapists to have higher EI than psychotherapy clients (Schutte et al., 1998).

Nursing is a stressful occupation and clinical placements expose students at an early stage in their studies to the realities of working as a healthcare professional. Student nurses need to develop the ability to control their emotions and channel their moods constructively as an inability to self-regulate emotions can lead to an increase in stress and anxiety (Humpel and Caputi, 2001). Two-thirds of the sample reported that they often felt nervous and stressed. This high level of stress may be attributable to individual differences in EI. It appears that students who scored high on EI are better at managing the emotions evoked by the demands of their nursing programme and, therefore, experienced less stress. The degree students reported a significantly higher level of perceived stress than the accelerated or the diploma students. The reason for the particularly high scores for the degree pathway participants is unclear. It is possible that the demanding degree curriculum, the lack of non-means tested bursary and the high expectation from parents and lecturers all contributed to the level of stress perceived by the degree nursing students.

Table 2

Correlations of EI, age, highest education, perceived stress, subjective well-being, perceived nursing competency and GPA.

	EI	Age	Highest education	Perceived stress	Subjective well-being	Perceived nursing competency	Grade Point Average
EI	–						
Age	0.18(*)	–					
Highest education	0.23(**)	0.14	–				
Perceived stress	–0.40(**)	–0.33(**)	–0.14	–			
Subjective well-being	0.27(**)	–0.25(**)	–0.17	–0.24(**)	–		
Perceived nursing competency	0.32(**)	–0.06	0.13	–0.02	0.19(*)	–	
Grade Point Average (GPA)	–0.11	0.02	–0.36 (**)	–0.13	0.18(*)	–0.22(*)	–

* $p < 0.05$. ** $p < 0.01$.

Table 3
Model of EI— simultaneous multiple regression.

Model ^{a,b}	Unstandardized coefficients		Standardized coefficients	t	P
	Beta	Std. Error			
Age	0.102	0.104	0.083	0.982	0.328
Gender	4.730	2.926	0.122	1.616	0.109
Subjective well-being	0.587	0.226	0.214	2.597	0.011*
Grade Point Average	−0.173	0.109	−0.121	−1.593	0.114
Perceived stress	−0.510	0.139	−0.305	−3.677	0.000**
Perceived nursing competency	0.230	0.115	0.157	1.994	0.048*
Planful problem-solving	0.105	0.050	0.185	2.123	0.036*
Seeking social support	0.110	0.043	0.210	2.525	0.013*
Accept responsibility	−0.059	0.039	−0.120	−1.527	0.129

^a R² = 0.390, adjusted R² = 0.344.

^b DV: EI.

* p < 0.05.

** p < 0.001.

The relationship between EI and perceived stress is congruent with previous studies (Pau and Croucher, 2003; Tsaousis and Nikolaou, 2005). Indeed, Pau and Croucher (2003) found that dental students with high EI were more able to manage challenging emotional encounters with patients and thus experienced less stress. Fewer symptoms of burnout have been reported by female nurses with a relatively high EI profile (Gerits et al., 2005). It would appear that individuals with high EI are better able to regulate and express their own emotions and read the deeper emotional meanings of others with whom they interact. As a consequence, they are less likely to be overwhelmed by stress and are at a lower risk of developing mental health problems (Cherniss and Adler, 2000). The level of perceived stress in this study suggests that there is a need to monitor the emotional demands of students' work. The provision of adequate support structures such as link lecturer, clinical supervision and mentorship for nursing students while on clinical placements is imperative, enabling students to recognize and deal with their emotional responses to work and to the emotions of others (Akerjordet and Severinsson, 2004; Freshwater and Stickley, 2004).

Recognizing explicitly that one is anxious or angry may lead to constructive appraisal of one's fears and to the formulation of an effective coping strategy. Planful problem-solving was the most frequently reported coping strategy used by students. Such findings are not unexpected given that coping with the cost of emotional labour in nursing requires specific skills (Jones and Johnson, 2000). A significant positive association was found between the use of planful problem-solving strategies and EI. According to Mathews and Zeidner (2000), people with high EI scores adopt a more active problem focused style of coping, tend to seek social support when they need it and are, therefore, less likely to develop a depressive reaction when confronted with problems. Salovey et al. (1999) suggest that individuals with high EI may have advantages in terms of their regulation of self referent thoughts and emotions that protect against mental disengagement.

Salovey et al. (1995) suggest that individuals who can perceive and experience their emotions are better at monitoring their emotions and moods. It is possible that students with high EI were able to maintain positive moods longer and generate positive moods even in negative situations. Nursing students must ensure that their feelings are not dismissed or suppressed but acknowledged, as the ability to handle difficult and powerful emotions and redirect them in a positive manner allows them to work in a calm and professional manner (Evans and Allen, 2002). The present study considered only nursing students and further research is needed to include qualified nurses.

Student nurses with high EI scores also had a high perceived nursing competency score. Stratton et al. (2005) found it difficult to explore the

role of EI in the development of clinical skills but, nevertheless, their study showed that standardized patients' ratings of medical students' communication abilities assessed in an OSCE (Objective Structured Clinical Examination) were related to the Trait Meta-Mood Scale subscale of 'attention to feelings' (Salovey et al., 1995). The latter assessed the extent to which the medical student attends to a patient's verbal and non verbal appraisal and expression of emotion.

In contrast to Jaeger's (2003) and Parker et al.'s (2004) study, no relationship was found between EI and GPA in this present study. This finding concurs with those of O'Connor and Little (2003) and Newsome et al. (2000) in that there was little association between academic success and EI. Austin et al. (2005) also found limited evidence to support a link between EI and academic performance in first year medical students. The reasons for this could be due to methodological differences and the differences in the samples used as some of the studies conducted recruited mainly mature psychology students. The sample in this study consisted of a mixture of young, mature and graduate students which is similar to Newsome et al. (2000) sample of heterogeneous students. Parker et al. (2004), on the other hand, had a very homogeneous sample of young adults who were in transition to tertiary education.

Documentary analysis indicated that there is little explicit input on EI components and emotional competency in the nursing curricula. Students had few opportunities or guidance to develop their emotional and social skills. According to Bellack (1999), cognitive understanding and technical skills are necessary but not sufficient in a profession as complex as nursing. Self-awareness and emotional regulation are skills that contribute to the professionalism of nurses (Wells and Mathews, 1994). These attributes which are encapsulated in EI, enable individuals to cope better with stress, contributing positively to health maintenance and career development (McMullen, 2003) and it should be included in the curricula.

Limitations of the study

There are certain limitations inherent within this study which includes the fact that the study was completed in a nursing and midwifery school situated in a single HEI and with one cohort of students. The sample size is relatively small and, therefore the study findings may not be generalizable to other HEIs. However, the study site recruits nursing student that parallel those of other HEIs located in an inner city area, particularly regarding demographic profiles. The use of a survey with data collected at a single point in time means that potential changes in participants over time were not captured and it is recommended that a longitudinal study would usefully contribute to the body of research investigating EI and its importance to nursing. Although the concept of EI is still relatively new, it provides an organizing heuristic that helps us to understand the relationships among reported findings and guides directions for future research (Salovey and Grewal, 2005). In depth exploration using qualitative interview methods would be useful to ascertain how students with different levels of EI, cope with stress in general and in their clinical placements in particular.

Conclusions

Emotions provide a unique source of information for individuals and play a key role in shaping individuals' thoughts, actions and subsequent feelings (Ekman, 1999). This study provides some interesting preliminary findings which suggest that an increased feeling of control and emotional competence assist student nurses to adopt an active and effective coping strategy to deal with stress, which in turn enhances their subjective well-being. The direct association between high EI and low stress highlights the potential value of facilitating the development of EI among nursing students. Emotional competence is a learned capability (Horton-Deutsch and Sherwood,

2008). Nursing curricula need, therefore, to incorporate the competencies associated with EI such as self-awareness, into programme outcomes. Such an initiative may help students to deal with stress more effectively. A nursing curricula with EI as a core component may contribute to the development of a well balanced nursing workforce.

Acknowledgement

Acknowledgement is due to Professor Ann-Marie Rafferty Head of Florence Nightingale School of Nursing and Midwifery for allowing access to the students and examination data.

References

- Akerjordet, K., Severinsson, E., 2004. Emotional intelligence in mental health nurses talking about practice. *International Journal of Mental Health Nursing* 13, 164–170.
- Austin, E.J., Evans, P., Goldwater, R., Potter, V., 2005. A preliminary study of emotional intelligence, empathy and exam performance in first year medical students. *Personality and Individual Differences* 39, 1395–1405.
- Bar-On, R., 1997. *Bar-On Emotional Quotient Inventory: Technical Manual*. Multi Health Systems, Toronto.
- Bastian, V., Burns, N., Nettelbeck, T., 2005. Emotional intelligence predicts life skills, but not as well as personality and cognitive abilities. *Personality and Individual Differences* 39, 1135–1145.
- Bellack, J., 1999. Emotional intelligence: a missing ingredient? *The Journal of Nursing Education* 38, 3–4.
- Buchan, J., 2006. Evidence of nursing shortages or a shortage of evidence? *Journal of Advanced Nursing* 56, 457–458.
- Chang, E.M., Handcock, K.M., Johnson, A., Daly, J., Jackson, D., 2005. Role stress in nurses: review of related factors and strategies for moving forward. *Nursing & Health Sciences* 7, 57–65.
- Cherniss, C., Adler, M., 2000. Promoting Emotional Intelligence in Organizations: Make Training in Emotional Intelligence Effective. American Society of Training and Development, Alexandria, VA.
- Ciarrochi, J., Deane, F., Anderson, S., 2002. Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences* 32, 197–209.
- Cohen, S., Kamarck, T., Mermelstein, R., 1983. A global measure of perceived stress. *Journal of Health Social Behaviour* 24, 385–396.
- Diener, E., Emmons, R., Larsen, R., Griffin, S., 1985. The Satisfaction with Life Scale. *Journal of Personality Assessment* 49, 71–75.
- Ekman, P., 1999. *Handbook of Cognition and Emotion*. John Wiley & Sons Ltd., Chichester, Sussex.
- Evans, D., Allen, H., 2002. Emotional intelligence: its role in training. *Nursing Times* 98 (27), 41–42.
- Evans, W., Kelly, B., 2004. Pre-registration diploma student nurse stress and coping measures. *Nurse Education Today* 24, 473–482.
- Evans, W., Brown, G., Timmins, F., Nicholl, H., 2007. An exploratory study identifying the programme related stressors amongst qualified nurses completing part-time degree courses. *Nurse Education Today* 27, 731–738.
- Folkman, S., Lazarus, R.S., 1986. *Manual for the Ways of Coping Questionnaire*. Palo Alto. Consulting Psychologists Press, California.
- Freshwater, D., Stickley, T., 2004. The heart of the art: emotional intelligence in nurse education. *Nursing Inquiry* 11, 91–98.
- Gannon, N., Ranzijn, R., 2005. Does emotional intelligence predict unique variance in life satisfaction beyond IQ and personality? *Personality and Individual Differences* 38, 1353–1364.
- Gardner, H., 1983. *Frames of Mind: The Theory of Multiple Intelligence*. Basic Books, New York.
- Gerits, L., Derksen, J., Verbruggen, A., Katzko, M., 2005. Emotional intelligence profiles of nurses caring for people with severe behaviour problems. *Personality and Individual Differences* 38, 33–43.
- Gohm, C., Corser, G., Dalsky, D., 2005. Emotional intelligence under stress: useful, unnecessary, or irrelevant? *Personality and Individual Differences* 39, 1017–1028.
- Goleman, D., 1995. *Emotional Intelligence: Why It Can Matter More Than IQ*. Bloomsbury Publishing, London.
- Gowing, M., 2001. Measurement of individual emotional competence. In: Cherniss, C., Goleman, D. (Eds.), *The Emotionally Intelligent Workplace: How to Select for, Measure and Improve Emotional Intelligence in Individuals, Groups and Organizations*. Jossey-Bass, San Francisco, CA, pp. 83–131.
- Humpel, N., Caputi, P., 2001. Exploring the relationship between work stress, years of experience and emotional competency using a sample of Australian mental health nurses. *Journal of Psychiatric and Mental Health Nursing* 8, 399–403.
- Horton-Deutsch, S., Sherwood, G., 2008. Reflection: an educational strategy to develop emotionally competent nurse leaders. *Journal of Nursing Management* 16, 946–954.
- Jaeger, A.J., 2003. Job competencies and the curriculum: an inquiry into emotional intelligence in graduate professional education. *Research in Higher Education* 44, 615–639.
- Jones, M.C., Johnson, D.W., 2000. Reducing stress in first level and student nurses: a review of the applied stress management literature. *Journal of Advanced Nursing* 26, 475–482.
- McMullen, B., 2003. Emotional intelligence. *British Medical Journal* 326, S19.
- Martins, A., Ramalho, N., Morin, E., 2010. A comprehensive meta-analysis of the relationship between emotional intelligence and health. *Journal of Personality and Individual Differences* 49, 554–564.
- Mathews, G., Zeidner, M., 2000. Emotional intelligence, adaptation to stressful encounters and health outcomes. In: Bar-On, R., Parker, J. (Eds.), *The Handbook of Emotional Intelligence*. Jossey-Bass, San Francisco CA, pp. 459–489.
- Mayer, J.D., Salovey, P., 1993. The intelligence of emotional intelligence. *Intelligence* 17, 433–442.
- Mayer, J.D., Salovey, P., 1997. What is emotional intelligence? In: Salovey, P., Sluyter, D. (Eds.), *Emotional Development and Emotional Intelligence: Educational Implications*. Basic Books, New York, pp. 3–31.
- Miles, M., Huberman, A., 1994. *Qualitative Data Analysis*, 2nd ed. Sage, Thousand Oaks.
- Newsome, S., Day, A., Catano, V., 2000. Assessing the predictive validity of emotional intelligence. *Personality and Individual Differences* 29, 1005–1016.
- O'Connor, R.M., Little, I.S., 2003. Revisiting the predictive validity of emotional intelligence: self-report ability-based measures. *Personality and Individual Differences* 35, 1893–1902.
- O'Donnell, H., 2009. The emotional impact of nursing student attrition rates. *The British Journal of Nursing* 18, 745–754.
- Parker, J.D.A., Summerfeldt, L.J., Hogan, M.J., Majeski, S.A., 2004. Emotional intelligence and academic success: examining the transition from high school to university. *Personality and Individual Differences* 36, 1321–1330.
- Pau, A., Croucher, R., 2003. Emotional intelligence and perceived stress in dental undergraduates. *Journal of Dental Education* 67, 1023–1028.
- Polit, D.F., Beck, C.T., 2008. *Nursing Research: Principles and Methods*, 8th ed. Lippincott Williams & Wilkins, Philadelphia.
- Rochester, S., Kilstoff, K., Scott, G., 2005. Learning from success: improving undergraduate education through understanding the capabilities of successful nurse graduates. *Nurse Education Today* 25, 181–188.
- Salovey, P., Bedell, B., Derweiler, J., Mayer, J.D., 1999. Coping intelligently: emotional intelligence and the coping process. In: Snyder, C. (Ed.), *Coping: the Psychology of What Works*. Oxford Psychology Press, New York, pp. 141–164.
- Salovey, P., Grewal, D., 2005. The science of emotional intelligence. *American Psychological Society* 14, 281–285.
- Salovey, P., Mayer, J.D., Goldman, S., Turvey, C., Palfai, T., 1995. Emotional attention, clarity and repair: exploring emotional intelligence using the Trait Meta-Mood Scale. In: Pennebaker, J.W. (Ed.), *Emotion, Disclosure and Health*. American Psychological Association, Washington DC, pp. 125–154.
- Salovey, P., Mayer, J.D., 1990. Emotional intelligence. *Imagination, Cognition and Personality* 9, 185–211.
- Schutte, N.S., Malouff, J.M., Thorsteinsson, E., Bhullar, N., Rooke, S., 2007. A meta-investigation of the relationship between emotional intelligence and health. *Personality and Individual Differences* 42, 921–933.
- Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J., 1998. Development and validation of a measure of emotional intelligence. *Personality and Individual Differences* 25, 167–177.
- Segal, J., 2002. Good leaders use emotional intelligence. Emotionally intelligent leadership is a skill that can be learned and taught throughout life. *Health Progress* 83, 44–46.
- Slaski, M., Cartwright, S., 2003. Emotional intelligence training and its implications for health, stress, and performance. *Stress and Health* 19, 233–239.
- Spence, G., Oades, L., Caputi, P., 2004. Traits emotional intelligence and goal self-integration: important predictors of emotional well-being? *Personality and Individual Differences* 37, 449–461.
- Sternberg, R., Forsythe, G., Hedlund, J., Horvath, J., Wagner, R., William, W., Snook, S., Grigorenko, E., 2000. *Practical Intelligence in Everyday Life*. Cambridge University Press, New York.
- Stratton, T., Elam, C., Murphy-Spencer, A., Quinlivan, S., 2005. Emotional intelligence and clinical skills: preliminary results from a comprehensive clinical performance examination. *Academic Medicine* 80, 534–537.
- Thorndike, E.L., 1920. Intelligence and its uses. *Harper's Magazine* 140, 227–235. Cited in Landy, F.J., 2005. Some historical and scientific issues related to research on emotional intelligence. *Journal of Organizational Behaviour* 26, 411–424.
- Tsaousis, I., Nikolaou, I., 2005. Exploring the relationship of emotional intelligence with physical and psychological health functioning. *Stress and Health* 21, 77–86.
- Watson, R., Calman, L., Norman, I., Redfern, S., Murrells, T., 2002. Assessing clinical competence in student nurses. *Journal of Clinical Nursing* 11, 554–555.
- Watson, R., Dreary, I., Thompson, D., Li, G., 2008. A study of stress and burnout in nursing students in Hong Kong: a questionnaire survey. *International Journal of Nursing Studies* 45, 1534–1542.
- Wells, A., Mathews, G., 1994. *Attention and Emotion: A Clinical Perspective*. Erlbaum, Hove, Sussex.
- Woods, L., Priest, H., Roberts, P., 2002. An overview of three different approaches to the interpretation of qualitative data. Part 2: practical illustration. *Nurse Researcher* 10, 43–51.