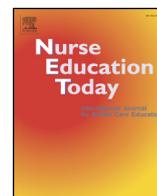




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Associations between emotional intelligence, depression and suicide risk in nursing students

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SUMMARY

Background: The most important factor which predisposes young people to suicide is depression, although protective factors such as self-esteem, emotional adaptation and social support may reduce the probability of suicidal ideation and suicide attempts. Several studies have indicated an elevated risk of suicide for health-related professions. Little is known, however, about the relationship between perceived emotional intelligence and suicide risk among nursing students.

Objectives: The main goals were to determine the prevalence of suicide risk in a sample of nursing students, to examine the relationship between suicide risk and perceived emotional intelligence, depression, trait anxiety and self-esteem, and to identify any gender differences in relation to these variables.

Method: Cross-sectional study of nursing students ($n = 93$) who completed self-report measures of perceived emotional intelligence (Trait Meta-Mood Scale, which evaluates three dimensions: emotional attention, clarity and repair), suicide risk (Plutchik Suicide Risk Scale), self-esteem (Rosenberg Self-esteem Scale), depression (Zung Self-Rating Depression Scale) and anxiety (Trait scale of the State-Trait Anxiety Inventory).

Results: Linear regression analysis confirmed that depression and emotional attention are significant predictors of suicidal ideation. Moreover, suicide risk showed a significant negative association with self-esteem and with emotional clarity and repair. Gender differences were only observed in relation to depression, on which women scored significantly higher. Overall, 14% of the students were considered to present a substantial suicide risk.

Conclusions: The findings suggest that interventions to prevent suicidal ideation among nursing students should include strategies to detect mood disorders (especially depression) and to improve emotional coping skills. In line with previous research the results indicate that high scores on emotional attention are linked to heightened emotional susceptibility and an increased risk of suicide. The identification and prevention of factors associated with suicidal behaviour in nursing students should be regarded as a priority.

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Introduction

Suicide is a public health problem of considerable importance, and over the last 45 years suicide rates have increased worldwide (World Health Organization, 2012). Notably, young people constitute the highest-risk group in one third of the world's countries, and between the ages of 10 and 24, suicide is the second most frequent cause of death. In one US study the lifetime prevalence of suicidal ideation and suicide attempts in adolescents aged between 13 and 18 years was 12.1% and 4.1%, respectively, and one-third (33.9%) of adolescents with suicidal ideation had made at least one attempt (Nock et al., 2013). Eisenberg et al. (2007), in a study involving 2483 university

students, reported that 2.5% of undergraduates and 1.6% of graduate students had reported suicidal thoughts in the four weeks prior to the study.

Several studies have indicated an elevated risk of suicide for health-related professions, especially nurses and physicians (Hawton et al., 2011; Meltzer et al., 2008), although the reasons for this are unknown. One proposed explanation for the increased risk of suicide in medical occupational groups is the higher rate of psychiatric disorders compared with other occupations (Hawton et al., 2002, 2011). In the specific case of nurses, their working conditions and the nature of the job make them especially vulnerable to problems such as burnout, anxiety, depression and low self-esteem. These aspects play a decisive role in making nursing one of the professions with the highest prevalence of suicidal behaviour (Hawton et al., 2002). In relation to nursing students, Goetz (1998) suggests that they may be at higher risk for suicide than are other college students because they are subjected to a stressful academic curriculum. Specifically, nurse training includes both clinical placements and theory-based classes, and among other

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stressful situations, nurses must also learn to cope with suffering and death (Pryjmachuk and Richards, 2007; Pulido-Martos et al., 2012). In a recent study of 142 Greek nursing students, 10% reported suicidal thoughts and 1.4% stated that they might attempt suicide if they had the chance (Melissa-Halikiopoulou et al., 2011). At present, however, few data are available with which to estimate the prevalence of suicidal behaviour among nursing students.

Previous studies have clearly shown that mental disorders, particularly depression (Cavanagh et al., 2003; Wang et al., 2011) and anxiety (Choi et al., 2011), are among the strongest risk factors for both attempted and completed suicide. A study of US university students estimated that the prevalence of depressive or anxiety disorders was 15.6% for undergraduates and 13.0% for graduate students (Eisenberg et al., 2007). Most theoretical models of suicidal behaviour propose a diathesis-stress model in which certain psychiatric, psychological and biological factors would make a person more predisposed to such behaviour, while stressful life events would interact with these factors to increase the risk (Nock et al., 2012). The experience of persistent stress might therefore explain, at least in part, why some professionals such as physicians, nurses and students on health-related courses present higher rates of suicidal behaviour.

Whatever the case, there is evidence to suggest that both psychological characteristics and stressful life events are contributory factors in deliberate self-harm among young people. Severity of self-harm history has been shown to be associated with higher levels of depression, anxiety and impulsivity, with lower levels of self-esteem, and with stressful life events in multiple areas of young people's lives (Madge et al., 2011). In this context, self-esteem, emotional adaptation, positive social support and experiential well-being are powerful factors that may reduce the risk of suicidal behaviour among at-risk adolescents (Sharaf et al., 2009; Wang et al., 2011).

In the nursing context several authors have ascribed a key role to emotional intelligence, and it has been suggested that the nursing curriculum should include the teaching of specific strategies for managing emotions, as well as social and communication skills training. The purpose of these skills would be to help nursing students and professionals cope with emotionally stressful situations (Görgens-Ekermans and Brand, 2012; Montes-Berges and Augusto-Landa, 2007).

According to the model of Mayer and Salovey (1997, p.10) emotional intelligence is "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth". The first instrument developed to assess perceived emotional intelligence was the Trait Meta-Mood Scale (TMMS; Salovey et al., 1995). The TMMS has three subscales that measure attention to emotions, emotional clarity, and emotional repair. Attention to emotions refers to a person's tendency to notice and think about his/her feelings and emotions. Emotional clarity refers to the ability to understand and discriminate one's emotions and feelings. Finally, emotional repair refers to a person's ability to moderate his/her emotional responses and to fix negative mood states.

Although there is limited evidence about the relationship between emotional intelligence and suicidal behaviour, research conducted with young students has concluded that emotional intelligence is a protective factor against suicidal ideation and behaviour (Cha and Nock, 2009; Ciarrochi et al., 2002). With regard to emotional regulation, there is a sequential process whereby a certain level of attention to feelings is necessary in order to understand emotional states and a certain level of clarity of feelings is required in order to moderate or regulate those (Palmer et al., 2003). Interestingly, however, Ciarrochi et al. (2002) showed that emotionally perceptive people appear to be more strongly impacted by stress than are their less perceptive counterparts. In line with this, generic research in the field of emotional intelligence has suggested that people who score high on emotional attention are more likely to experience depressive and anxiety disorders and to

report more physical symptoms (Salovey et al., 2002; Thompson et al., 2007). In this regard, a recent study of 243 nursing students found that those who scored high on emotional attention found it harder to cope with the idea of death (Aradilla-Herrero et al., 2012–2013).

Some researchers have found differences between men and women in relation to the TMMS dimensions. Specifically, women tend to score higher than men on emotional attention (Salguero et al., 2010). There is also evidence that women are more emotionally responsive and expressive than men, and that they process emotional information more efficiently (Thayer et al., 2003). Paradoxically, however, women show a greater tendency to engage in rumination than do men, and they present higher levels of depression and anxiety (Nolen-Hoeksema, 2012). The women in this latter study used a wider range of strategies than did men, including rumination, reappraisal, active coping, acceptance and social support. Nolen-Hoeksema and Aldao (2011) suggest that although women may use adaptive strategies more than men do, this does not help in terms of preventing distress and depressive symptoms; furthermore, women's increased use of maladaptive strategies makes them more vulnerable than men to distress and depression.

In an attempt to provide a detailed description of the factors that influence suicide risk in nursing students, the present study sought to determine the prevalence of suicide risk in a sample of these students, to examine the relationship between suicide risk and perceived emotional intelligence, depression, trait anxiety and self-esteem, and to identify any gender differences in relation to these variables. The specific hypothesis tested was that perceived emotional intelligence and self-esteem protect against the risk of suicide, whereas depression and anxiety are predisposing factors.

Method

Participants

First-year nursing undergraduates from a university nursing school in Catalonia (Spain) were invited to participate in the study. Of the 140 students enrolled, a total of 105 were present in class on the day of test administration, and of these, 93 completed the questionnaire and 12 returned it blank. Therefore, the study sample corresponded to 66.43% of the total number of first-year nursing students enrolled at that time.

Ethical Considerations and Data Collection

A descriptive, cross-sectional study was carried out. Ethical approval was obtained from the research ethics committee of the School of Nursing. All the participants received oral and written information about the aims of the study. It was made clear to them that their participation was voluntary and that all data would remain confidential. Research participants could not be personally identified and they were assured that participation would in no way affect their academic results.

Instruments

The students responded anonymously to a self-report questionnaire, which in addition to gathering information about age and sex contained the Spanish versions of the following scales:

Trait Meta-Mood Scale (TMMS-24) (Fernández-Berrocal et al., 2004; Salovey et al., 1995). This instrument evaluates perceived emotional intelligence, i.e. people's knowledge about their own emotional abilities. The Spanish version of the TMMS contains 24 items that are responded to on a five-point Likert scale (anchored by 1 = strongly disagree and 5 = strongly agree) and which assess levels of

perceived emotional intelligence (PEI) across three dimensions: Attention, Clarity and Repair. There are eight scale items for each of these dimensions. Responses are analysed by taking into account the scores obtained on each of the three subscales or dimensions, not the overall score. The internal consistency of the subscales in the original validation study was 0.90 for Attention, 0.90 for Clarity and 0.86 for Repair. In the present sample we obtained Cronbach's alpha values of 0.87, 0.85, and 0.86 for Attention, Clarity and Repair, respectively.

Rosenberg Self-esteem Scale (RSES) (Rosenberg, 1965; Martín-Albo et al., 2007). The RSES is a brief and easy-to-administer instrument that is widely used in the Spanish-speaking population. It comprises 10 questions presented in a four-point Likert format. The reported internal consistency, test-retest reliability, and convergent and discriminant validity are all adequate. In this study Cronbach's alpha was 0.81.

Plutchik Suicide Risk Scale (SRS) (Plutchik et al., 1989). The SRS is one of the few instruments available in Spanish for assessing suicide risk. It is a self-report instrument containing 15 dichotomous (yes/no) items. Scores range from 0 to 15, with higher scores indicating a higher risk of suicide. In the validated Spanish version (Rubio et al., 1998) the cut-off point indicating substantial suicide risk is set at 6. This scale has shown good reliability and validity, and it can be used with attempters and non-attempters. In the present study Cronbach's alpha was 0.70.

Zung Self-Rating Depression Scale (SDS) (Zung, 1965). The SDS is a classic instrument that is widely used in the Spanish-speaking population to assess depression. It is a self-report scale comprising 20 statements related to depression, with half being formulated in positive terms and half in negative terms. The scores obtained are interpreted according to the following categories: normal (not depressed, raw score < 40), mild (raw score 40–47), moderate (raw score 48–55) and severe (raw score > 55) (Passik et al., 2001). In this study Cronbach's alpha was 0.78.

Trait scale of the State-Trait Anxiety Inventory (STAI-T) (Spielberger et al., 1983). In the Spanish-speaking population the STAI is the most widely used instrument for evaluating state and trait anxiety. The Trait scale of the STAI is designed to assess trait anxiety and comprises 20 items, each with a 4-point item response scale. Possible total scores therefore range between 20 and 80, with higher scores indicating greater levels of anxiety. Cronbach's alpha in the present study was 0.85.

Data Analysis

The data were tabulated and analysed by means of SPSS 18.0 for Windows (SPSS Inc., Chicago, IL, USA), which was used to calculate descriptive indices and Pearson correlation coefficients, as well as to conduct a multiple linear regression analysis.

Results

The 93 participants had a mean age of 20.49 years ($SD = 3.75$; range 18–42), with 75 (80.6%) being female and 18 (19.4%) male. Total scores on the 15-item Plutchik Suicide Risk Scale (SRS) ranged from 0 to 10, with a mean of 3.03 ($SD = 2.29$). The analysis showed that 86% of the 93 nursing students obtained a total score of 5 or less (Fig. 1). Thus, applying the cut-off score of 6 that has been established for the Spanish version of the SRS (Rubio et al., 1998) would mean that 14% of these students presented a substantial suicide risk. In terms of the students' responses to individual items on the SRS, 19 students (20.4%) had a relative who had attempted suicide, 13 (14%)

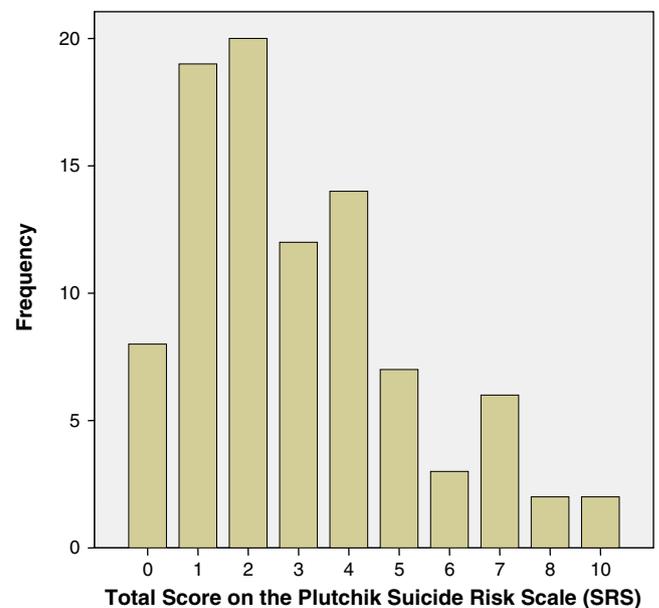


Fig. 1. Frequency distribution of total scores on the Plutchik Suicide Risk Scale (SRS) in the total sample of nursing students.

had at some point thought about committing suicide, and 6 (6.5%) had made a previous attempt to take their own life.

Table 1 shows the means and standard deviations for the scores obtained by the total sample and by male and female students separately on the three subscales of the TMMS (Attention, Clarity and Repair) and on the measures of suicide risk (SRS), self-esteem (RSES), depression (SDS) and anxiety (STAI-T). It can be seen that women scored higher on suicide risk, depression, anxiety and emotional attention, whereas men scored higher on self-esteem and emotional clarity and repair. However, these differences were only significant in relation to depression ($t = 2.25$, $p < 0.05$). Applying Cohen's criteria the effect size can be regarded as moderate ($d = 0.61$). It can also be seen in Table 1 that the mean scores on the Zung Self-Rating Depression Scale were all < 40. A more precise analysis revealed that 55.9% of the students scored < 40, 31.2% scored between 40 and 47, 9.7% between 48 and 55, and 3.2% > 55.

Table 2 shows the Pearson correlation coefficients between suicide risk and the three components of emotional intelligence (Attention, Clarity and Repair), self-esteem, depression and anxiety. Note particularly that the first column shows significant and positive correlations between suicide risk and depression ($p < 0.01$), anxiety ($p < 0.01$) and emotional attention (one of the three subscales of the TMMS) ($p < 0.01$). Conversely, there are significant and negative correlations between suicide risk and both self-esteem ($p < 0.01$) and emotional clarity and repair ($p < 0.05$).

Table 1

Means, standard deviations, t values and significance (p) for the scores obtained by the total sample and by male and female students separately on the three dimensions of perceived emotional intelligence (Attention, Clarity and Repair) and on the measures of suicide risk (SRS), self-esteem (RSES), depression (SDS) and anxiety (STAI-T).

Scale	Mean (SD) Total sample N = 93	Mean (SD) Women N = 75	Mean (SD) Men N = 18	t	p
Attention	30.01 (5.17)	30.44 (5.10)	28.22 (5.20)	0.73	ns
Clarity	28.52 (4.73)	28.39 (4.70)	29.06 (4.97)	-0.53	ns
Repair	29.32 (5.46)	29.31 (5.48)	29.39 (5.57)	-0.05	ns
RSES	29.55 (4.34)	29.44 (4.40)	30.00 (4.14)	-0.48	ns
SRS	3.03 (2.28)	3.07 (2.28)	2.89 (2.34)	0.29	ns
SDS	39.03 (6.97)	39.81 (6.93)	35.78 (6.30)	2.25	<0.05*
STAI-T	43.56 (8.34)	44.18 (8.45)	41.05 (7.55)	1.43	ns

* Cohen's $d = 0.61$.

Table 2
Pearson correlation coefficients (*r*) between suicide risk (SRS) and the three dimensions of perceived emotional intelligence (Attention, Clarity and Repair), self-esteem (RSES), depression (SDS) and anxiety (STAI-T).

	SRS	Attention	Clarity	Repair	RSES	SDS
SRS						
Attention	0.32**					
Clarity	−0.20*	0.14				
Repair	−0.21*	0.02	0.23*			
RSES	−0.43**	−0.09	0.24*	0.40**		
SDS	0.61**	0.17	−0.17	−0.41**	−0.53**	
STAI-T	0.55**	0.34**	−0.29**	−0.48**	−0.64**	0.66**

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

Finally, we conducted a multiple linear regression analysis (stepwise method), entering suicide risk as the dependent variable and taking as independent variables all those factors which had shown a significant correlation in the bivariate analysis. The variables were introduced into the model according to the size of their correlation with suicide risk (largest first). As shown in Table 3, the model that explains the highest percentage of the total variance ($R^2_{adj} = 0.39$) includes two predictor variables, depression followed by emotional attention. This model accounted for almost 40% of the explained variance (the coefficient of determination was 0.39) and the effect size can therefore be considered to be moderate.

Discussion

The main finding of this study is that depression and emotional attention are shown to be significant predictors of suicidal ideation. The results partially support the initial hypothesis, since depression but not anxiety emerged as a predictor of suicide risk. A possible explanation for this could be the high levels of anxiety that have been detected among nursing students during their clinical placements (Melo et al., 2010). However, our students were all in their first year of training and had yet to begin their hospital placements. This aspect needs to be explored further in future research.

The results relating to depression are consistent with the findings of a study of Greek nursing students by Melissa-Halikiopoulou et al. (2011), who reported a significant relationship between depression and suicidal ideation. Similarly, a recent study of Taiwanese medical students carried out by Fan et al. (2012) found that those who scored as depressed were significantly ($p < 0.01$) more likely to experience suicidal ideation.

Emotional attention, a component of perceived emotional intelligence, was also shown to be a predictor variable. In line with previous studies, this suggests that high scores on emotional attention are linked to heightened emotional susceptibility and an increased risk of suicide. In this regard, Augusto-Landa et al. (2009), in a sample of nursing students, reported that attention to emotions was negatively associated with self-esteem and self-concept. Conversely, high levels of clarity and emotional repair have been related to better mental

Table 3
Multiple linear regression analysis.

Suicide risk (DV)	B	SE B	Beta	<i>t</i>	<i>p</i>	Confidence interval (95%)	
<i>Step 1</i>							
Constant	−4.68	1.11		−4.21	<0.01	−6.88	−2.47
Depression (SDS)	0.20	0.03	0.59	6.97	<0.01	0.14	0.25
<i>Step 2</i>							
Constant	−7.05	1.40		−5.05	<0.01	−9.83	−4.28
Depression (SDS)	0.18	0.03	0.55	6.62	<0.01	0.13	0.24
Attention (TMMS)	0.10	0.04	0.22	2.67	<0.01	0.02	0.17

For Step 1: $R = 0.59$; $R^2_{adj} = 0.35$; $F_{1,89} = 48.57$; $p < 0.01$.

For Step 2: $R = 0.63$; $R^2_{adj} = 0.39$; $F_{2,88} = 29.50$; $p < 0.01$.

adjustment, greater life satisfaction and less stress (Extremera et al., 2009; Thayer et al., 2003). In this context, a study of nursing students by Montes-Berges and Augusto-Landa (2007) showed that emotional repair was the main predictor of mental health. Similarly, a recent study of South African nurses by Görgens-Ekermans and Brand (2012) suggested that improving emotional intelligence may help to reduce the likelihood of burnout in the face of chronic stress.

It should be noted that in the only study, to our knowledge, to have examined the relationship between emotional intelligence (assessed by an ability performance-based test) and suicidal behaviour among adolescents, Cha and Nock (2009) found that emotional intelligence was a protective factor against suicidal ideation and suicide attempts. In the present study, although clarity and repair showed negative and significant correlations with suicide risk, they were not identified as predictive factors for this risk. Further research is clearly needed to analyse this relationship in greater depth. Indeed, the ability to predict suicidal behaviour through the continued identification of specific risk factors represents one of the most important directions for future studies in this area (Nock et al., 2012).

We also hypothesized that self-esteem would protect against suicidal ideation. The results would seem to support the idea that self-esteem has a positive influence in terms of preventing suicidal behaviour. High self-esteem has been shown to act as a protective factor against mental health problems in young adults and adolescents (Sharaf et al., 2009; Willburn and Smith, 2005), and Karatzias et al. (2006) suggested that self-esteem and affectivity are important predictors of well-being.

Another aim of the present study was to determine the prevalence of suicide risk in a sample of nursing students. The analysis revealed that 14% of students could be classified as high suicide risk, 14% had at some point thought about suicide, and 6.5% had made a previous suicide attempt. These results are in line with those of other studies carried out with students of nursing and other disciplines (Garlow et al., 2008). Garlow et al. (2008) reported that 11.1% of college undergraduates endorsed current suicidal ideation and 16.5% had a lifetime suicide attempt or self-injurious episode. This underlines the idea that university students are an at-risk population in which the identification of early signs and appropriate treatment is important in order to achieve better outcomes (Cleary et al., 2011).

As regards gender, we found no significant differences in relation to suicide risk or on any of the components of emotional intelligence. Previous studies that have examined the relationship between gender and mental disorders suggest that women experience higher levels of depression and anxiety (Essau et al., 2010). In our study, female students scored significantly higher on depression than did their male counterparts, and the effect size was moderate. However, some authors have suggested that men's depression is not captured by self-report measures (Addis, 2008), and future studies therefore need to examine these differences in greater depth.

Implications For Nursing Education

The results of this study highlight the importance of nurse educators being able to recognize mental health problems among their students so as to initiate referral and early interventions (Cleary et al., 2011). A further priority would be to develop training programmes that can help nursing students improve their personal skills, self-esteem and life satisfaction. Indeed, programmes that teach emotional skills such as self-esteem enhancement and strategies to mobilize support are likely to benefit youth at risk for suicide. Research also suggests that enhancing students' awareness of personal assets and positive aspects of self is fundamental to building intrapersonal skills for coping with intrusive suicidal thoughts in the context of low external support resources (Sharaf et al., 2009). In this regard, the prolonged contact that nurse educators have with students during their clinical placements makes them ideally placed to implement prevention and early detection programmes of this kind.

These aims are further supported by recent empirical evidence suggesting that emotional intelligence training programmes can improve emotional intelligence among university students (Dacre Pool and Qualter, 2012). The premise here is that the skills associated with emotional intelligence not only help individuals to deal effectively with unpleasant emotions but can also promote positive emotions, thereby fostering both personal growth and well-being (Brackett et al., 2011).

Suicide, and all that it implies on the individual, family and social levels, remains a taboo subject in many European societies, and particularly in Spain. Consequently, few studies have been conducted in our country into the characteristics of suicide and the factors that might prevent it. A more public debate about the problem, the development of information campaigns, and increased awareness among students and teachers could all help in preventing suicidal behaviour, not least as the social network plays an important role in detecting warning signs and risk behaviour.

Limitations

Firstly, the correlational design does not allow any causal inferences to be made among the factors studied, and neither can the findings be generalized to nursing professionals as a whole. Indeed, all the participants were first-year students from the same university and this means that the sample was very limited, not least because they had yet to begin their clinical placements, an experience that is known to be stressful and which would need to be taken into account as a study variable. A further limitation concerns the use of self-report measures to assess emotional intelligence (TMMS) and depression (SDS): the results obtained with the former may have been subject to social desirability bias, whereas the latter might not have captured depression in young men. Despite these limitations, the data obtained are relevant to the field of nursing education and confirm the need for further research.

Recommendations For Further Research

In general, further research is needed to understand how emotions interact with suicidal ideation and suicide attempts. As regards the present study, the findings now need to be replicated and validated in a more diverse sample of nursing students. It would also be useful to conduct longitudinal studies in order to establish causal relationships between the variables. Finally, any gender differences related to risk factors for suicide among nursing students need to be examined in greater depth.

Conclusions

The present study supports the hypothesis that depression and emotional attention impact upon the risk of suicide among nursing students. In addition, the results suggest that interventions to reduce suicidal ideation among these students should include, as part of the nursing curriculum, strategies to enhance self-esteem and improve emotional intelligence.

The findings should, however, be treated with caution, not least because suicidal behaviour is a highly complex phenomenon that is influenced by a multitude of variables, not only personal but also those of a social and cultural nature. Nonetheless, the study does highlight that in terms of nurse education there is a clear need to establish programmes that are able to improve the psychological well-being of students and to offer early detection of mental health problems, especially those associated with mood disorders.

The study adds to existing knowledge about an issue that is regarded as a serious public health problem, namely the risk of suicide among young people.

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