Abstract

Introduction. The present study adds to the existing international evidence on psychological distress in the student population by focusing on student nurses. It quantitatively assesses psychological distress with comparative norms and investigates service uptake in a single study.

Aim. Investigate the level of psychological distress in students and compare this with population norms and highlight potential facilitators and barriers to help seeking.

Methods. This study recruited N=121 student nurses from one university in a cross sectional design. Data were analysed using descriptive statistics, independent t-tests and one-way ANOVA’s.

Findings. The key findings show high levels of psychological distress which is above levels seen in the general population. The main barriers to seeking support was fear of disclosure and the perceived impact on their suitability as a student nurse.

Discussion. The study highlights that high levels of distress identified in the literature are seen in student nurses and that fear of disclosure may account for some not seeking support.

Relevance. The fear of disclosure and low levels of seeking support suggest there is a need for mental health nurses and academics to play a key role in mental health literacy and evidence-based interventions such as mindfulness to combat these issues.
Accessible summary

What is known on the subject?

- Psychological distress is a major health concern, and university student populations are at a risk due to high academic, economic and interpersonal demands at this time. While a number of studies have been conducted looking at distress and service uptake among university students, there is a lack of comparative information in the student nurse population. Therefore, this study focuses on level of psychological distress and service uptake in student nurses during their training.
- Student nurses in training are acknowledged as particularly vulnerable to anxiety and depression.
- Anxiety and depression can interfere with educational achievement and interfere with working relationships which are an important aspect to clinical practice.

What this paper adds to existing knowledge

- This study investigates psychological distress and service uptake in student nurses, in a single study, by measuring the level of distress and comparing this with adult non-patient norms.
- The key findings suggest high levels of anxiety and depression and poor uptake of support in student nurses.
- The main barrier to seeking support was the fear of disclosure about their anxiety and/or depression, and feared impact on their suitability to train as a nurse.

What are the implications for practice?

- Due to the fear of disclosure and low levels of support seeking, mental health nurses and academics have a key role to play in mental health literacy.
It seems reasonable, given the key findings, to suggest that interventions be directed at decreasing anxiety and depression such as mindfulness training and other evidence-based strategies.

It is recommended that psychological distress needs due attention from Higher Education sector and those health professionals involved in mental health service provision to support evidence-based strategies that target these issues.

Relevance statement
The significance of anxiety and depression occurring during nurse training has implications for the mental health profession and academics. The current findings demonstrate that anxiety and depression is a significant issue. Interestingly, the present study found that fear of disclosure was linked to reduced help seeking behaviour. It seems reasonable to suggest that mental health literacy and evidence-based interventions be directed at decreasing psychological distress and enhancing help seeking behaviour. Thus, there seems to be a need for greater openness on psychological distress in all health professionals, especially those involved in mental health service provision, to support student nurse training.

Introduction
The psychological health of university students is recognised internationally as an important issue for provision of student support in higher education (Alzayyat & Al-Gamal, 2014). Psychological distress is an emotional state typically characterised by symptoms of anxiety and depression (Arvidsdotter, 2016). The strategic importance of addressing the psychological distress of students is highlighted in a recent report by the General Medical Council (GMC, 2015) and similar issues are likely to be important for nurse training given the similarities in terms of academic and practice based components.
The present study seeks to add to the international evidence on psychological distress in students by assessing psychological distress and service uptake in student nurses in a single study. Existing literature that has focused on psychological distress has looked at practice based stressors in health professionals and teacher education programmes (Deasy, Coughlan, Pironom, Jourdan, & Mannix-McNamara, 2016). The existing studies have primarily used qualitative methods or focused on a specific samples such as mental health nurses (Galvin, Suominen, Morgan, O'Connell, & Smith, 2015). The Deasy et al study was a mixed method study with a main focus on psychological distress and coping. Studies from the United States (Eisenberg, Gollust, Golberstein, & Hefner, 2007), Australia (Martin, 2010 and Stallman, 2010), Iceland (Bernhardsdóttir & Vilhjalmsson, 2013) and China (Xu et al., 2014) have a broader focus on stressors, rather than psychological distress, and focus on a wider student population, rather than student nurses in training. The present quantitative study will focus on all fields of nursing practice with psychological distress and service support as its focus.

Student nurse training has educational and clinical practice components which are integral to a student’s educational experience. To meet these training requirements, students must be psychologically and physically able to fulfil their working roles. Psychological distress can interfere with academic educational achievement (Deasy et al., 2016) and interfere with working relationships (Kato, 2014) which are an important aspect to clinical practice. Anxiety and depression have been found to significantly correlate with intention to leave the profession (Heinen et al., 2013). Furthermore, the reasons why students, in general, do not seek support for psychological distress are the fear of experiencing stigma and being treated differently (Wynaden et al., 2014). The avoidance of help-seeking amongst students experiencing psychological distress is of strategic importance to universities as social inclusion is central to good mental health and engagement with their educational studies (Universities UK/MWBHE, 2015).
Student populations have been suggested to be at greater risk of life stressors because of the known factors associated with going to university, such as separating from family life, career or role changes, financial constraints and pressure for educational achievement (Verger et al., 2009, Stallman, 2010). The stressors specific to nurses’ educational experiences include the dual nature of meeting educational and clinical demands of training, working hours and shift work when undertaking clinical duties, changes in clinical environment and working environment to meet learning needs and interpersonal demands upon students dealing with sick and vulnerable individuals (Pryjmachuk & Richards, 2007a, Pryjmachuk & Richards, 2007b). Therefore, it is crucially important to evaluate psychological distress in student nurses to secure retention rates and a healthier workforce (Health Education England, 2015).

The studies that compare psychological distress with the general population have, in the main, been done in overseas studies. A study in the United States by Eisenberg et al. (2007), conducted on 2843 university students, indicated that 15.6% of undergraduate students reported psychological distress. The study reported the prevalence of anxiety and depression as 4.2% and 13.8%, respectively. The prevalence of anxiety in female students was twice that of male students. However, the study suggested that further research is required to confirm the gender differences in levels of reporting.

A 2010 study by Stallman conducted on 6479 Australian students reported high prevalence of serious psychological distress (19.2%) among university students, with the prevalence of elevated distress among university students double that of the general population. Eighty four percent of students reported elevated distress levels, suggesting that university students are a very high-risk population. The study indicated that students reported a reduced capacity for study with increased levels of psychological distress.
Another study reporting the prevalence of anxiety and depression in female university students in Iceland by Bernhardsdóttir and Vilhjalmsson (2013), conducted on 743 students, indicated the prevalence of above-threshold anxiety was 21.2% and the prevalence of above-threshold depression was 22.5%. The prevalence rates of elevated depression were not significantly different amongst university students compared to the general population matched for age. However, the mean level of depression was significantly lower amongst the university students compared with age matched normative data on the general population in Iceland.

A meta-analysis was conducted by Ibrahim, Kelly, Adams and Glazebrook (2013), involving twenty-four studies reported an overall prevalence of 30.6% (95% CI, 30.2-31.1) for depression but noted that there was variability between the studies. The results suggest that university students experience rates of depression that were significantly higher than those in the general population.

The present study can add to existing international research by illuminating the psychological distress experienced by students undertaking professional training as a nurse. The existing research that compares psychological distress with the general population have, in the main, been done overseas (Bernhardsdóttir & Vilhjalmsson, 2013, Eisenberg et al., 2007, Stallman, 2010). In terms of help seeking behaviours, most studies have focused on students in general rather than specific student training programmes. The most cited reasons why students do not seek help for mental health problems is the fear of experiencing stigma and being treated differently (Wynaden et al., 2014). The findings from this study can inform on potential barriers and facilitators to help seeking behaviour occurring during nurse training.
The aims of the present study are:

1. What is the level of anxiety and depression in undergraduate students taking a programme of study with professional registration as a nurse?
2. Does the level of anxiety and depression vary with demographics characteristic of the sample?
3. What percentage of students seek psychological support (e.g. student support, counselling, therapy or prescribed treatment from their G.P.) for psychological distress?
4. What are the main perceived barriers (e.g. fear of disclosures and consequences on professional training as a nurse) and facilitators (e.g. availability of University support services) in seeking psychological support?

**Method**

**Study design and setting**

The present study was cross sectional in design and involved students attending one United Kingdom university programme of study with registration as a nurse. Ethical approval for the study was sought and granted from the institutions Faculty Research Ethics Committee (FREC) for Health and Social Care. A confidentiality pledge was made and the researcher clearly indicated that responses were anonymous and participation was voluntary. The participants were told the type of information that would be obtained and the nature of the commitment prior to completing the online questionnaire.

**Participants**

A total of 121 student nurses (16% male and 84% female) participated in the present study. Their average age was 26 years (SD 7.4, range 18-47). Students were recruited by the distribution of an e-mail invitation containing a link to the participant information sheet, consent form and questionnaire. The responses were received anonymously via Bristol Online Survey (BOS) tool. The invites were given to all full time students registered on a
degree programme for Health and Social care at one University in the North West of England. The inclusion criteria included being registered on one of the four fields of study; adult, mental health, learning disabilities or child, with registration as a nurse after three years. Exclusion criteria includes those students registered on an associated programme of study outside of the Northwest of England.

Data sources and measurement

Symptom Check List-90-R (SCL-90-R)

The SCL-90-R (Derogatis, 1994) is a self-report symptom inventory designed to reflect a respondent’s psychological and psychiatric symptoms. Participants were instructed to indicate how much each symptom had distressed them during the past week on a 5-point Likert type scale of distress, ranging from 0 (Not At All) to 4 (Extremely). The SCL-90-R measures nine symptom dimensions of distress; Somatization, Obsessive–Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. The anxiety (A-SCL-90-R) and depression (D-SCL-90-R) subscales within the SCL-90-R were utilised for the present research. The A-SCL-90-R subscale has 10 items that are associated with symptoms of anxiety; nervousness, tension, trembling; feelings of terror, panic and somatic correlates of anxiety. The D-SCL-90-R subscale has 13 items that are associated with symptoms of depression; dysphoric mood, feelings of hopelessness, thoughts of suicide, lack of motivation, cognitive and somatic correlates of depression. Cronbach's alpha computed for this sample for the anxiety and depression dimensions were .86 to .90.

Seeking support questionnaire

The seeking support questionnaire contained 8 items designed to reflect a respondent’s help seeking and potential barriers (e.g. fear of disclosures and consequences on professional training as a nurse) that hinder help seeking behaviour. Participants who sought support
were instructed to indicate how helpful they found specified services (e.g. university
counselling services, general practitioner surgeries and student support and guidance) and
how fearful they were seeking support on a 5-point Likert type scale, ranging from 0 (Not At
All) to 4 (Extremely). The help seeking subscale has 4 items that are associated with the
specified service and how helpful they found this. The barriers to seeking help has 4 items
that are associated with fear of disclosure, including fear of other people’s perceptions of
their suitability, fear of other people talking about them, fear of other people watching them;
participants were asked regardless of their help seeking behaviour. Cronbach’s alpha
computed for this sample for help seeking and barriers to help seeking dimensions were .77
to .88.

Study size
A priori sample size for a one-way ANOVA Family F Test using G*Power (Faul, Erdfelder,
Lang, & Buchner, 2007) calculated that there was an 80% chance of correctly rejecting the
null hypothesis of no difference between test scores with three groups, with a small effect
size of $f = 0.28$ required a total of 120 students. Similarly, there is an 80% chance of
rejecting the null hypothesis of no difference between test scores with four groups, with a
medium effect size of $f = 0.31$ required a total of 120 students.

Quantitative variables
The anxiety (A-SCL-90-R) and depression (D-SCL-90-R) subscales were calculated from the
SCL-90-R items according to the instructions from the manual. The raw scores were
changed to T-scores by consulting the separate normative tables in the manual for non-
clinical males and non-clinical females as appropriate. For each symptom dimension T-
score, scores of <50, ≥50, and ≥63 were considered to be within normal, above sub-clinical
threshold and clinical ranges, respectively. Although no guidelines are set for the above sub-
clinical threshold, Recklitis and Rodriguez (2007) recommended a T-score of ≥50 for
identifying a threshold for psychological distress that optimally captured all those with
symptoms of distress. Target symptom caseness was defined according to Derogatis (1994)
criteria, that is, a score at or above a T-score of 63 according to gender specific norms. T-
scores control for gender differences in the reported levels of symptomatology for each
target symptom.

Data were also examined in terms of the percentage of participants whose target symptom
scores were clinically elevated, a T-score that is equal to or exceeds 63, for anxiety and
depression subscales. The SCL-90-R items for both anxiety and depression were
subjectively reviewed for endorsements of distress. The presence of psychological distress
was calculated as the percentage of participants who rated their distress as moderate or
greater for that item.

Statistical methods

The statistical test for SCL-90-R symptom scores and differences with gender were
Independent t-tests. The statistical test for SCL-90-R symptom scores and the independent
variables (e.g., field or year of study) which has two or more groups (e.g., Mental Health,
Child, Adult & Learning Disabilities or year 1, year 2 & year 3) were one-way between
groups ANOVA's. Statistical Package for the Social Sciences (SPSS; IBM Corporation.
Released 2012. IBM Statistics for Windows, Version 21.0) and adjusted p-values are quoted.
Significance level of p < .05 was adopted.

Results

The Pearson correlation between anxiety (A-SCL-90-R) and depression (D-SCL-90-R)
summary score was \( r(121) = .81, p < .001 \). According to Evans' classification, less than 0.20
is very weak, 0.20 to 0.39 is weak, 0.40 to 0.59 is moderate, 0.60 to 0.79 is strong and 0.80
or greater is a very strong correlation. Therefore, the correlation is significant and very strong.
Normative population

The percentage of T-scores for anxiety (A-SCL-90-R) and depression (D-SCL-90-R) subscales are illustrated in Table 1. The T-scores represent a standardized distribution that has a “mean of 50 and a standard deviation of 10” (Derogatis, 1994, p 15). Ninety percent scored over the sub-clinical threshold (T-score of ≥ 50) for anxiety with a 95%CI: 61.9, 65.6, i.e. 95% confidence that the true mean on a scale of 50 to 100 for the T-score for anxiety is between 61.9 and 65.6. It is clear that the participants are reporting higher than average anxiety than a normative population. Eighty four percent scored over the sub-clinical threshold (T-score of ≥ 50) for depression with a 95%CI: 64.6, 68.0, i.e. 95% confidence that the true mean on a scale of 50 to 100 for the T-score for depression is between 64.6 and 68.0. It is clear that the participants are reporting higher than average depression than a normative population.

Location of table 1

Clinical caseness

The percentage of participants whose target symptom scores were clinically elevated (T-score ≥ 63) were calculated for anxiety and depression symptoms. The T-score cut-off of 63 approximately corresponds to the 90th percentile, meaning that a person has scored the same or more than 90 percent of people relative to a normative sample. The results indicate that 44% of the participants had clinically elevated scores for anxiety with a 95%CI: 70.6, 74.0 and 48% of the participants had clinically elevated scores for depression with a 95%CI: 70.1, 73.3 (Table 1).
T-score sub-groups and gender differences

It was hypothesized that there would be a difference in anxiety (A-SCL-90-R) and depression (D-SCL-90-R) scores with gender, as the SCL-90-R allows meaningful comparison to be made between T-scores and gender. The descriptive statistics associated with anxiety (A-SCL-90-R) T-scores for each sub-group (clinically elevated, above sub-clinical threshold and normal ranges) for males and females adult norms are reported in Table 2. It can be seen that the male anxiety means were numerically larger than the female anxiety means for each group. The largest numerical difference was in the above sub-clinical threshold means between males ($M = 70.88, SD = 9.64$) and females ($M = 62.51, SD = 9.37$). In order to test for a statistical difference in the means an independent t-test were undertaken for each group. The analysis indicated that there was a significance difference in means for anxiety in the above sub-clinical threshold participants ($t(107) = -3.29, p = .001, CI = -13.41, -3.33$) with males having the highest mean. There were no other significant differences for clinically elevated or the normal range participants (see Table 2).

Location of table 2

The descriptive statistics associated with depression (D-SCL-90-R) T-scores for males and females in each group (clinically elevated, above sub-clinical threshold and normal ranges) are reported in Table 2. The largest numerical differences were in the clinically elevated means between males ($M = 75.23, SD = 6.17$) and females ($M = 70.74, SD = 6.12$) and in the above sub-clinical threshold means between males ($M = 70.59, SD = 10.31$) and females ($M = 65.43, SD = 8.30$). In order to test for a statistical difference in the means an independent t-test as undertaken for each group. The analysis indicated that there was a significance difference in means for depression in the clinically elevated participants ($t(61) = -2.35, p = .022, CI = -8.31, -0.68$) and above sub-clinical threshold participants ($t(99) =$ -
2.24, \( p = .027, CI = -9.73, -0.59 \) with males having the highest mean. There were no significant differences for normal range participants (see Table 2).

**T-score sub-groups and demographic differences**

Next, it was hypothesized that there would be a difference in anxiety (A-SCL-90-R) and depression (D-SCL-90-R) scores with year of study and field of study. A one-way between groups analysis of variance was conducted to explore the impact of year of study on anxiety, as measured by the anxiety symptom scale (A-SCL-90-R). It can be seen (see table 3) that year 1 group was associated with the numerically smallest mean level of student anxiety (\( M = 59.34, SD = 11.54 \)) and year 3 group was associated with numerically highest mean level of anxiety (\( M = 63.95, SD = 11.95 \)). In order to test the hypothesis that year of study had an effect on anxiety, a one way between groups ANOVA was performed. Prior to conducting the ANOVA, the assumption of normality was evaluated and determined to be satisfied as the three groups’ distributions were associated with skew and kurtosis less than 2.0 and 9.0, respectively (Schmider, Ziegler, Danay, Beyer, Bühner, 2010; see Table 3). The assumption of homogeneity of variances was evaluated and determined to be satisfied prior to conducting each ANOVA. The independent between groups ANOVA yielded a non-significant effect, \( F(2, 118) = 1.32, p = .27, \eta^2 = .02 \). Thus, the null hypothesis of no difference between the means was accepted.

**Location of table 3**

Similarly, a one-way between groups analysis of variance was conducted to explore the impact of year of study on depression, as measured by the depression symptom scale (D-SCL-90-R). It can be seen (see table 3) that year 1 group was associated with the numerically smallest mean level of student depression (\( M = 61.66, SD = 11.21 \)) and year 3 group was associated with numerically highest mean level of depression (\( M = 63.91, SD = 12.65 \)). In order to test the hypothesis that year of study had an effect on depression, a one
way between groups ANOVA was performed. The independent between groups ANOVA yielded a non-significant effect, $F(2, 118) = .26, p = .77, \eta^2 = .004$. Thus, the null hypothesis of no difference between the means was accepted.

The descriptive statistics associated with anxiety across the four field groups are reported in Table 4. It can be seen that the child field group was associated with the numerically smallest mean level of anxiety ($M = 57.50, SD = 14.28$) and the learning disabilities field group was associated with the numerically highest mean level of anxiety ($M = 64.76, SD = 11.92$). In order to test the hypothesis that field of study had an effect on anxiety, a one way between groups ANOVA was performed. The independent between groups ANOVA yielded a non-significant effect, $F(3, 117) = 1.01, p = .39, \eta^2 = .03$. Thus, the null hypothesis of no difference between the means was accepted.

**Location of table 4**

The descriptive statistics associated with depression across the four field groups are reported in Table 4. It can be seen that mental health field group was associated with the numerically smallest mean level of depression ($M = 58.67, SD = 13.89$) and the learning disabilities field group was associated with the numerically highest mean level of depression ($M = 64.29, SD = 14.16$). In order to test the hypothesis that field of study had an effect on depression, a one way between groups ANOVA was performed. The independent between groups ANOVA yielded a non-significant effect, $F(3, 117) = .46, p = .39, \eta^2 = .02$. Thus, the null hypothesis of no difference between the means was accepted.

**Item analysis of symptoms**

The percentage of students who endorsed specific psychological distress symptoms ranged from 8.3% to 59.5% for anxiety items and 5.8% to 68.6% for depression symptoms (Table 5...
Location of table 5 and table 6

The pattern of the most frequently endorsed symptoms rated at least as moderately distressing for anxiety indicates that feeling pushed to get things done (59.5%), feeling tense or keyed up (40.5%) and feeling so restless you couldn't sit still (29.7%) were the highest amongst the 10 item profile (table 5).

The pattern of the most frequently endorsed symptoms rated at least as moderately distressing for depression indicates feeling low in energy or slowed down (68.6%), worrying too much about things (67.8%) and blaming yourself for things (43.8%) were the highest amongst the 13 item profile (table 6).

Item analysis of support seeking

The percentage of support seeking for students who sought help and endorsed that support are listed in Table 7. The pattern of the most frequently endorsed support services were seeking help from their G.P. (34.7%), University Counselling services (26.4%) and seeking support from Student Support & Guidance Service (SSGS; 24.8%). The pattern of percentages for those whom sought support and rated at least moderately or above for GP’s (38.1%), SSGS (20.0%) and University Counselling services (18.8%).

Location of table 7 and table 8

Item analysis of fear of disclosure

The percentage of students who feared disclosure and reasons for their fears are listed in Table 8. The percentages for those who feared disclosure and rated at least moderately or
above for the belief that it would possibly change other people's perceptions of their
suitability as a nurse (77.1%); result in others talking about you (68.7%); and in other people
watching you more closely (57.8%).

Odds Ratios for support seeking and fear of disclosure
Table 9 shows that of those students who scored above clinical threshold (T-score ≥ 63) on
anxiety, 52.8% sought support for their anxiety. This compares with 46.0% seeking help for
above clinical threshold depression. Additionally, 47.2% for above clinical threshold anxiety
feared disclosure and those students scoring above clinical threshold for depression showed
that 42.9% feared disclosure. The Odds Ratio (OR) for seeking support were 3.64 times
higher for those scoring above clinical threshold for anxiety and 2.45 times higher for those
scoring above clinical threshold for depression. Furthermore, the Odds Ratio for fear of
disclosure were 11.25 times higher for those scoring above clinical threshold for anxiety and
13.75 times higher for those scoring above clinical threshold for depression.

Location of table 9 and table 10
The Chi squared statistic was used to ascertain whether above clinical threshold anxiety and
above clinical threshold depression were associated or independent (table 10). The
predetermined alpha level of significance was 0.05 and chi square statistic was \( x^2 = (1, 121) \)
= 50.66, \( p < .001 \). Hence, anxiety and depression are somewhat associated. Therefore,
caution is noted as there is overlap between persons who have both above clinical threshold
anxiety and depression.

Discussion
The primary aim of this study was to gain an understanding of anxiety and depression in
undergraduate students taking a programme of study with professional registration as a
nurse. Results from this study show that a high percentage of students reported clinically elevated scores for anxiety (44%) and depression (48%) which is of concern because of the potential consequences on academic achievement and student health (Deasy et al., 2016). The most frequent symptom for anxiety was ‘feeling pushed to get things done’ (59.5%) and the most frequent symptom for depression was ‘feeling low in energy or slowed down’ (68.6%), which were rated at least moderately distressing. The other key finding was that 47.2% for above threshold anxiety and 42.9% for above threshold depression feared disclosure. Those who feared disclosure feared it would impact on other people’s perceptions of their suitability as a nurse (77.1%). A key implication is that academics and mental health nurses should ensure that mental health literacy is a key learning outcome during nurse training (Lipson, Speer, Brunwasser, Hahn, & Eisenberg, 2014).

Studies have found that approximately 46% of those individuals affected by psychological distress are engaged in support services (Whiteford et al., 2014 and Eisenberg, Speer, & Hunt, 2012). This compares to 52.8% and 46.0% who sought support for above threshold anxiety and depression in the present study. These percentages may not be directly comparable, due to the distinction between engaged in support service and seeking support, but give an approximation. Conversely, the present results suggest that 47.2% and 54% did not seek support for above threshold anxiety and depression respectively. A key implication is that academics and mental health nurses should ensure that information on support services during training is readily available to students (Wong, Collins, & Cerully, 2015).

The present study contributes valuable insights to the existing international literature. It highlights the high levels of student psychological distress identified in the literature (Ibrahim et al., 2013) are relevant to student nurses in training and it is clear that the students are reporting higher than average distress for anxiety and depression than a normative population. The present study adds to the previous qualitative literature (Galvin, et al. 2015)
by adding a quantitative measure of psychological distress and, although not unique, does allow comparison with similar populations due to the normative data that is available. The present study also focuses on psychological distress and service support in one study. The recommendations in this study for nurse training is potentially useful for nurse training in other countries. For example, low levels of engagement with support services despite high levels of psychological distress (Whiteford et al., 2014) and the fear of disclosure and fear potential impact on nurse training (Edwards & Crisp, 2017) are of interest.

The clinically elevated scores for anxiety and depression are higher than the all-female university students in the Iceland study by Bernhardsdóttir and Vilhjalmsson (2013), which found that 21.2% were above-threshold for anxiety and 22.5% were above-threshold for depression. However, the Iceland study utilised the upper 20% as the threshold for both anxiety and depression, rather than the standardized T-scores used in the SCL-90-R manual, utilised in the present study. This may account for the lower percentage figures in the Iceland study. Moreover, the prevalence of anxiety and depression in the general non-clinical population is difficult to ascertain due to the different criteria used in study design and instruments used. A recent meta-analysis for the prevalence of anxiety disorders in the United Kingdom has estimated that it is between 3.8-25% (Remes, Brayne, van der Linde, & Lafortune, 2016) and another study for the global prevalence of depression estimated that it is between 4.4-5.0% (Ferrari et al., 2013).

It is acknowledged that nurse training itself exposes students to specific risk factors due to the educational experiences; the dual nature of meeting educational and clinical demands of training, working hours and shift work when undertaking clinical duties, and interpersonal demands upon students dealing with sick and vulnerable individuals (Jamshidi, Molazem, Sharif, Torabizadeh, & Kalyani, 2016). Additionally, there is some evidence to suggest nurse training is likely to recruit those looking to help others which may also attract people into the nursing profession because of their own personal experiences of physical health and mental
health issues (Oates, Drey & Jones, 2017). Therefore, anxiety and depression might be higher in student nurses.

The present study found higher levels of elevated scores for depression in males compared to females. This is surprising as females have a higher incidence of depression than males in the general population (Albert, 2015). Risks factors for depression disproportionately affect women due to differences in socioeconomic status, penalty of motherhood and childcare responsibilities (Randstad Care, 2016). This is especially important when acknowledging that a higher proportion of mature undergraduate students are entering nursing (Universities UK, 2014) and are likely to have family responsibilities. However, a possible explanation is that males may face other issues such as gender discrimination and role stereotyping in a predominately female profession; when providing intimate care and non-masculine attributes assigned to males in nursing, respectively (Christensen & Knight, 2014). Given that discrimination, either direct or indirect, operates as a stressor, it may increase the risk of undesired mental health consequences such as psychological distress and depression (Pascoe & Richman, 2009). This must remain tentative as this was not tested directly. The gender differential was not true for elevated scores for anxiety.

A referral to university student welfare or counselling is recommended for those students experiencing a high level of psychological distress. Lecturers are often the first point of contact for students and are well placed to make sure students experiencing psychological discomfort don't become isolated and can appropriately signpost those student onto student welfare for additional support. However, it could worry some students to hear that their lecturer is concerned about their mental health. This may increase avoidance in help-seeking and create further fear that they are being watched more closely. Additionally, long waiting lists and limited services are recognized as being barriers to students getting the support that they need (Universities UK/MWBHE, 2015).
The small proportion of students seeking support might also be due to continuity of support services and problems with access. A report by YouthSight (2014) indicated that 25% of those with psychological distress accessed support from a university counselling services which is similar to the present findings. Student nurses are commencing training from distant geographical locations, nationally and internationally, which require a joined up support service between their home and term time addresses (Universities UK/MWBHE, 2015). Additionally, nurses spend part of their course on professional placements away from their home institution and this can also present access issues to support services. Universities UK/MWBHE Guide to Good Practice (2015, p. 6) recommends that “robust arrangements are put in place for any student with a history of mental health difficulties”.

The Odds Ratio for fear of disclosure were 11.25 times higher for those scoring above threshold for anxiety and 13.75 times higher for those scoring above threshold for depression. A study by Martins (2010) suggests that just over one third of students fail to disclose their psychological and mental health conditions. The main reason provided was fear of being judged or stigmatised and losing their university place (Martin, 2010). The literature suggests that health professionals, as well as the general public, hold discriminating attitudes against people with mental health problems (Reavley, Mackinnon, Morgan, & Jorm, 2014). This supports the present finding that fear of disclosure could result in being judged by other people and their suitability as a nurse would be called into question.

The finding that fear of disclosure and low levels of seeking support does suggest that there is a real need to increase mental health literacy of students and academic staff. There are already initiatives and educational programs such as Mental Health First Aid (Lipson et al., 2014). Such schemes help students and staff recognise some of the key symptoms of anxiety and depression found in this study. These schemes also promote recovery orientated mental health, thus helping to reduce stigma, and supports good help seeking (Wong et al., 2015). Mental health educators have a key role to play in mental health literacy
and recovery orientated mental health as these are staff working within the sector and have a depth of understanding of psychological distress and an ability to spot the warning signs.

Limitations

The findings need to be considered in light of several limitations. The cross-sectional design of the study only allows for the level of psychological distress to be measured only once on each student and therefore difficult to infer the temporal association between student training and psychological distress. Additionally, the reporting of help-seeking behaviour might be sensitive to temporal issues due to time lag between the help-seeking behaviour and the completion of the specific items within the measure. Furthermore, the power to detect differences in the normal group is reduced due to low numbers in this sample. Finally, the confidence intervals in relation to the odds ratio are wide, indicating that the sample size is possibly too small. Given these limitations, future studies would need to be replicated with a larger sample size and caution should be exercised in generalizing these findings to similar populations. Future lines of enquiry should focus on positive and negative coping skills in student nurses to fully understand the level of psychological distress in student nurses.

Implications for mental health nurses

This study is relevant to mental health nursing practice because it identifies the need to work more creatively with universities to promote mental health and well-being. The key finding of the present study is that anxiety and depression were found to be at high levels among the nursing students studied. Based on these findings it would seem reasonable to incorporate sessions aimed at psych-educational approaches to alleviate psychological distress, such as cognitive-behavioural techniques and mindfulness-based interventions (Galante et al., 2016). Due to the potential negative impact of anxiety and depression on students’ well-being and educational progression (Deasy et al., 2016), it is important that steps are taken to support these students (Universities UK/MWBHE, 2015). The present study suggests that a
small minority of nurses with psychological distress were accessing services and that fear of
disclosure was a key issue. Reavely and Jorm (2014) found that one of the main causes of
stigma towards psychological distress is a lack of mental health literacy. Therefore, mental
health nurses should play a key role in mental health literacy and promote a recovery
orientated mental health within higher education to combat stigma and fear of disclosure.
References


General Medical Council (GMC, 2015). *Supporting Medical Students with Mental Health Conditions*. London, General Medical Council/ Medical Schools Council


Table 1: Mean T-scores for anxiety and depression dimensions and percentage of T-scores equal or greater than 50 and 63.

SCL-90-R dimensions

<table>
<thead>
<tr>
<th></th>
<th>Mean T Score (SD)</th>
<th>% with T ≥ 50*</th>
<th>CI</th>
<th>Mean T Score (SD)</th>
<th>% with T ≥ 63*</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>63.73 (9.8)</td>
<td>90%</td>
<td>61.9, 65.6</td>
<td>72.26 (6.2)</td>
<td>44%</td>
<td>70.6, 74.0</td>
</tr>
<tr>
<td>Depression</td>
<td>66.30 (8.8)</td>
<td>84%</td>
<td>64.6, 68.0</td>
<td>71.67 (6.3)</td>
<td>48%</td>
<td>70.1, 73.3</td>
</tr>
</tbody>
</table>

Note: CI, confidence interval; SD, standard deviation; T, standardized T-scores; %, percentage; *clinically elevated is a T score ≥ 63 (equal to or greater than 63), above sub-clinical threshold is a T score ≥ 50 (equal to and greater than 50) and normal range is a T score < 50 (less than 50 but not including 50)
Table 2: Independent t-tests for anxiety and depression across SCL-90-R sub-groups

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>t-test</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Anxiety (A-SCL-90-R)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinically elevated</td>
<td>74.23</td>
<td>6.85</td>
<td>71.63</td>
<td>5.95</td>
<td>-1.32</td>
</tr>
<tr>
<td>Above sub-clinical threshold</td>
<td>70.88</td>
<td>9.64</td>
<td>62.51</td>
<td>9.37</td>
<td>-3.29</td>
</tr>
<tr>
<td>Normal range *</td>
<td>40.00</td>
<td>&lt;0.01</td>
<td>38.56</td>
<td>3.09</td>
<td>-0.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression (D-SCL-90-R)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinically elevated</td>
<td>75.23</td>
<td>6.17</td>
<td>70.74</td>
<td>6.12</td>
<td>-2.35</td>
</tr>
<tr>
<td>Above sub-clinical threshold</td>
<td>70.59</td>
<td>10.31</td>
<td>65.43</td>
<td>8.30</td>
<td>-2.24</td>
</tr>
<tr>
<td>Normal range *</td>
<td>42.00</td>
<td>5.66</td>
<td>42.78</td>
<td>4.66</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Note: df, degrees freedom; M, mean; SD, standard deviation. * power to detect differences in the normal range group is reduced due to low numbers in this sample.
Table 3: Descriptive statistics for anxiety and depression across the year groups

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anxiety (A-SCL-90-R)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>50</td>
<td>59.34</td>
<td>11.54</td>
<td>-0.31</td>
<td>-0.19</td>
</tr>
<tr>
<td>Year 2</td>
<td>49</td>
<td>62.04</td>
<td>12.28</td>
<td>-0.21</td>
<td>-0.70</td>
</tr>
<tr>
<td>Year 3</td>
<td>22</td>
<td>63.95</td>
<td>11.95</td>
<td>0.3</td>
<td>-1.51</td>
</tr>
<tr>
<td><strong>Depression (D-SCL-90-R)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>50</td>
<td>61.66</td>
<td>11.21</td>
<td>-0.45</td>
<td>0.15</td>
</tr>
<tr>
<td>Year 2</td>
<td>49</td>
<td>62.47</td>
<td>12.82</td>
<td>-0.38</td>
<td>-0.56</td>
</tr>
<tr>
<td>Year 3</td>
<td>22</td>
<td>63.91</td>
<td>12.65</td>
<td>-0.03</td>
<td>-1.28</td>
</tr>
</tbody>
</table>

Note: M, mean; N, number; SD, standard deviation
Table 4: Descriptive statistics for anxiety and depression across field of study

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Skew</th>
<th>SE</th>
<th>Kurtosis</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anxiety (A-SCL-90-R)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult</td>
<td>75</td>
<td>61.52</td>
<td>11.63</td>
<td>-0.10</td>
<td>-0.36</td>
<td>-0.54</td>
<td>-0.98</td>
</tr>
<tr>
<td>Mental health</td>
<td>21</td>
<td>59.00</td>
<td>12.21</td>
<td>0.41</td>
<td>0.83</td>
<td>-0.09</td>
<td>-0.09</td>
</tr>
<tr>
<td>Learning disabilities</td>
<td>17</td>
<td>64.76</td>
<td>11.92</td>
<td>-0.62</td>
<td>-1.13</td>
<td>-0.20</td>
<td>0.19</td>
</tr>
<tr>
<td>Child #</td>
<td>8</td>
<td>57.50</td>
<td>14.28</td>
<td>-0.65</td>
<td>-0.87</td>
<td>-1.13</td>
<td>-0.76</td>
</tr>
<tr>
<td><strong>Depression (D-SCL-90-R)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult</td>
<td>75</td>
<td>62.83</td>
<td>10.99</td>
<td>-0.09</td>
<td>-0.33</td>
<td>-0.70</td>
<td>-1.27</td>
</tr>
<tr>
<td>Mental health</td>
<td>21</td>
<td>58.67</td>
<td>13.89</td>
<td>0.04</td>
<td>0.08</td>
<td>-0.68</td>
<td>-0.70</td>
</tr>
<tr>
<td>Learning disabilities</td>
<td>17</td>
<td>64.29</td>
<td>14.16</td>
<td>-1.04</td>
<td>-1.89</td>
<td>0.78</td>
<td>0.73</td>
</tr>
<tr>
<td>Child #</td>
<td>8</td>
<td>63.50</td>
<td>12.51</td>
<td>-0.77</td>
<td>-1.02</td>
<td>0.24</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Note: M, mean; N, number; SD, standard deviation; SE, standard error; # sample size is possibly too small. However, a smaller critical value for rejecting the null hypothesis was utilised after dividing Skew or Kurtosis value by its standard error (Std. Error) and comparing it to a critical value of ±1.96 rather than ±2.58 (Rose, Spinks & Canhoto, 2015). All values within critical threshold limit.
Table 5: Anxiety distress symptom analysis for students

<table>
<thead>
<tr>
<th>Item endorsed</th>
<th>(n)</th>
<th>% endorsed at least moderately distressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling pushed to get things done</td>
<td>72</td>
<td>59.50%</td>
</tr>
<tr>
<td>Feeling tense or keyed up</td>
<td>49</td>
<td>40.50%</td>
</tr>
<tr>
<td>Feeling so restless you couldn't sit still</td>
<td>36</td>
<td>29.70%</td>
</tr>
<tr>
<td>Heart pounding or racing</td>
<td>35</td>
<td>28.90%</td>
</tr>
<tr>
<td>Fearful feelings</td>
<td>34</td>
<td>28.10%</td>
</tr>
<tr>
<td>Nervousness or shakiness inside</td>
<td>33</td>
<td>27.30%</td>
</tr>
<tr>
<td>Spells of terror or panic</td>
<td>32</td>
<td>26.50%</td>
</tr>
<tr>
<td>Suddenly scared for no reason</td>
<td>28</td>
<td>23.10%</td>
</tr>
<tr>
<td>Feeling that familiar things are strange or unreal</td>
<td>18</td>
<td>14.90%</td>
</tr>
<tr>
<td>Trembling</td>
<td>10</td>
<td>8.30%</td>
</tr>
</tbody>
</table>

Note: n, number of participants; %, percentage
Table 6: Depression distress symptom analysis for students

<table>
<thead>
<tr>
<th>Item endorsed</th>
<th>(n)</th>
<th>% endorsed at least moderately distressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling low in energy or slowed down</td>
<td>83</td>
<td>68.60%</td>
</tr>
<tr>
<td>Worrying too much about things</td>
<td>82</td>
<td>67.80%</td>
</tr>
<tr>
<td>Blaming yourself for things</td>
<td>53</td>
<td>43.80%</td>
</tr>
<tr>
<td>Feeling lonely</td>
<td>51</td>
<td>42.10%</td>
</tr>
<tr>
<td>Crying easily</td>
<td>49</td>
<td>40.50%</td>
</tr>
<tr>
<td>Feeling everything is an effort</td>
<td>48</td>
<td>39.70%</td>
</tr>
<tr>
<td>Feeling blue</td>
<td>43</td>
<td>35.60%</td>
</tr>
<tr>
<td>Feeling no interest in things</td>
<td>40</td>
<td>33.10%</td>
</tr>
<tr>
<td>Loss of sexual interest or pleasure</td>
<td>39</td>
<td>32.20%</td>
</tr>
<tr>
<td>Feelings of worthlessness</td>
<td>38</td>
<td>31.40%</td>
</tr>
<tr>
<td>Feeling hopeless about the future</td>
<td>37</td>
<td>30.60%</td>
</tr>
<tr>
<td>Feeling of being trapped or caught</td>
<td>28</td>
<td>23.10%</td>
</tr>
<tr>
<td>Thoughts of ending your life</td>
<td>7</td>
<td>5.80%</td>
</tr>
</tbody>
</table>

Note: n, number of participants; %, percentage
Table 7: Seeking support and helpfulness; percentages and frequencies of those who sought support and endorsed that support

<table>
<thead>
<tr>
<th>Item endorsed</th>
<th>% seeking support (n)</th>
<th>% endorsed at least moderately helpful (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeking support from GP</td>
<td>34.7% (42)</td>
<td>38.1% (16)</td>
</tr>
<tr>
<td>Were psychological support services readily accessibile</td>
<td>32.2% (39)</td>
<td>35.9% (14)</td>
</tr>
<tr>
<td>Seeking support from University Counselling service</td>
<td>26.4% (32)</td>
<td>18.8% (6)</td>
</tr>
<tr>
<td>Seeking support from SSGS</td>
<td>24.8% (30)</td>
<td>20.0% (6)</td>
</tr>
</tbody>
</table>

Note: n, number of participants; %, percentage
<table>
<thead>
<tr>
<th>Item endorsed</th>
<th>% fear disclosure (n)</th>
<th>% endorsed at least moderately fearful (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other people’s perceptions of your suitability as a nurse</td>
<td>57.9% (70)</td>
<td>77.1% (54)</td>
</tr>
<tr>
<td>Other might be talking about you</td>
<td>55.4% (67)</td>
<td>68.7% (46)</td>
</tr>
<tr>
<td>Did you fear disclosure &quot;watching&quot;</td>
<td>52.9% (64)</td>
<td>57.8% (37)</td>
</tr>
<tr>
<td>Did you fear disclosure</td>
<td>43.0% (52)</td>
<td>57.7% (30)</td>
</tr>
</tbody>
</table>

Note: n, number of participants; %, percentage
Table 9: Anxiety and depression Odds Ratio (OR) for help seeking and fear of disclosure

<table>
<thead>
<tr>
<th></th>
<th>% below threshold anxiety (n)</th>
<th>% above threshold anxiety (n)</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help seeking</td>
<td>23.5% (16)</td>
<td>52.8% (28)</td>
<td>3.64***</td>
<td>1.67 - 7.92*</td>
</tr>
<tr>
<td>Fear of disclosure</td>
<td>7.4% (5)</td>
<td>47.2% (25)</td>
<td>11.25***</td>
<td>3.90 - 32.4*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>% below threshold depression (n)</th>
<th>% above threshold depression (n)</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help seeking</td>
<td>25.9% (15)</td>
<td>46.0% (29)</td>
<td>2.45*</td>
<td>1.13 - 5.27*</td>
</tr>
<tr>
<td>Fear of disclosure</td>
<td>5.2% (3)</td>
<td>42.9% (27)</td>
<td>13.75***</td>
<td>3.88 - 48.7*</td>
</tr>
</tbody>
</table>

Note: CI, confidence interval; n, number of participants; OR, Odds Ratio; %, percentage; * p < 0.05, *** p < 0.001, 

* helping seeking shows positive endorsement in yes/no response (might be sensitive to temporal issues due to time lag between the help seeking behaviour and the completion of the specific items within the measure). * CI are wide, indicating that the sample size is possibly too small, * fear of disclosure shows positive endorsement in yes/no response.
Table 10: Chi squared to indicate whether above threshold anxiety and above threshold depression were associated or independent

<table>
<thead>
<tr>
<th></th>
<th>Above threshold anxiety</th>
<th>Below threshold anxiety</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above threshold depression</td>
<td>47 (38.8%)</td>
<td>16 (13.2%)</td>
<td>63 (52.1%)</td>
</tr>
<tr>
<td>Below threshold depression</td>
<td>6 (5.0%)</td>
<td>52 (43.0%)</td>
<td>58 (47.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>53 (43.8%)</td>
<td>68 (56.2%)</td>
<td>121 (100%)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = (1, 121) = 50.66, p < .001 \]