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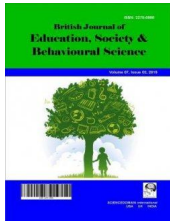
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Stress in U.K. Mental Health Training: A Multi-dimensional Comparison Study

John Galvin^{1*} and Andrew P. Smith¹

¹Centre for Occupational and Health Psychology, School of Psychology, Cardiff University, UK.

Authors' contributions

This work was carried out in collaboration between both authors. Author JG was involved in the conception and design of the study, carried out the statistical analyses and interpreted the data. Author JG drafted and revised the article. Author APS supervised the project and contributed knowledge and experience to the conception, design and analysis stages of the research. Author APS also revised the article for important intellectual content. Both authors read and approved the final manuscript to be published.

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ABSTRACT

Aims: This paper describes a comparison study of trainee clinical psychologists, psychiatric nursing students and PhD students using a multi-dimensional model of stress.

Methodology: A total of 168 trainee clinical psychologists, 94 psychiatric nursing students and 253 PhD students completed an online questionnaire. Multiple risk factors were measured, including work characteristics, appraisals, coping, health behaviours, childhood experiences and mental health outcomes.

Results: Trainee clinical psychologists reported the highest levels of demands, perceived stress and psychological ill health. Psychiatric nursing students reported the highest levels of emotion-based coping, which needs to be addressed. Alcohol consumption appears to be an important coping strategy employed by psychiatric nursing students. Negative childhood experiences were significantly higher for mental health training groups than PhD students.

Conclusion: Where other research focusing on stress at work or in training environments tends to consider only a small number of factors in isolation, this study considers multiple factors on

*Corresponding author: E-mail: galvinj@cardiff.ac.uk;

outcomes. This approach is more likely to be representative of real-life situations, in which students are exposed to multiple hazards.

Keywords: Mental health training; trainee clinical psychologists; psychiatric nursing students; mental health nursing; stress; health; wellbeing.

1. INTRODUCTION

1.1 Training in the Mental Health Professions

Research focusing on mental health professionals has commonly found that this population report high levels of stress [1-3]. For this reason, research attention has not only been focused on their work environment, but also their training period [4-6]. The training period is an important time, during which the student acquires the skills and experiences required for the profession. Additionally, training provides a unique opportunity to develop the capabilities of the individual in terms of their own personal resources and coping strategies. The present study focuses on two types of mental health professionals in training: Trainee clinical psychologists and psychiatric nursing students. Data were also collected from a sample of PhD students who acted as a comparison group.

There are important similarities and differences between the selected groups. Clinical psychologists and psychiatric nurses in the UK offer very similar services but at the same time maintain their own distinctive roles. Both groups work towards the common goal of understanding the mental health needs of their patients with the intention to change undesirable thoughts, emotions and behaviours, with the main objective being to enhance the wellbeing of patients and allow them to live more independently. Indeed, both groups will commonly work together in multi-disciplinary teams and previous research has investigated ways in which they can work together more effectively [7].

Trainee clinical psychologists are engaged in a Doctorate in Clinical Psychology course and psychiatric nursing students are engaged in a Bachelor of Nursing degree. During their training, both groups will be exposed to academic and clinical demands, with 50% of the course involving academic work and the other 50% involving clinical practice. Most PhD students however, the comparison group in this study, are solely academic and do not engage in the

treatment and management of patients. Nonetheless, in a similar way to trainee clinical psychologists and psychiatric nursing students, they are required to meet academic deadlines and therefore report the common stressors related to being a student [8]. Including PhD students in this comparison study is helpful, as we hope to tease out the additional strains of the clinical aspect of the mental health groups.

The clinical component of the mental health courses involves the students undergoing placements in the NHS, an environment renowned for being stressful. Indeed, during times of austerity and increasing pressure on NHS services, NHS workers are reporting higher levels of stress than ever before. For example, the 2013 NHS staff survey [9] revealed 39% of the staff reported work-related stress, the highest levels reported since the surveys inception in 2003. Additionally, only 44% of staff surveyed said they believe the organisation takes positive action on health and wellbeing. The data on psychiatric nurses revealed 46% reported work-related stress, compared to 40% of learning disabilities nurses, 39% child nurses and 39% adult nurses. Thirty-seven percent of clinical psychologists reported work-related stress which was higher than many other professions, including the 33% of medical and dental staff who reported work-related stress. Therefore, it is important to investigate stress in students who undertake clinical placements in such high stress work environments.

1.2 Stress in Trainee Clinical Psychologists

There is a dearth of published literature focusing on stress in trainee clinical psychologists in both the U.K. and internationally. In a recent review of the area, Pakenham and Stafford-Brown [5] found only one published quantitative study that examined the sources and levels of stress in trainee clinical psychologists. For this reason, their review mainly focused on findings from other mental health practitioners in an attempt to generalise these findings. The one study that did report sources and levels of stress in this group was by Cushway [10], who found that 59% of her

sample scored above the clinical cut-off for distress on the General Health Questionnaire [11], which was considerably higher than other groups. Six underlying factors were reported; workload, lack of social support, client difficulties and distress, self-doubt, course structure and poor supervision. These findings reflect the insecurities and worries that are commonly found among individuals in other mental health occupations, such as those found in studies focusing on psychiatric nursing students [4,6].

1.3 Stress in Nursing Students

A great deal of research has been conducted looking at stress in nursing students [12-14]. Indeed this is necessary, particularly within the U.K., where stress has been linked to attrition among nursing students and the NHS has experienced problems with recruitment [15,16]. Research has often pointed towards the clinical component of nursing education as being the most stressful [17]. Jones and Johnston [18] investigated stress in nursing students and, in particular, found significant levels of distress around the time of clinical placements. High levels of stress have been shown to lead to higher levels of psychological ill health [19] and lower job satisfaction [20], with negative consequences for the effective functioning of the organisation [21].

However, a limitation of much of the available research focusing on stress in nursing students is that researchers often fail to consider the different specialties of nursing when collecting their data. That is, many studies conducted in the U.K. focus broadly on 'nursing students' rather than considering psychiatric nursing students as a population in their own right. However, this can cause many problems when using such data to inform stress interventions and nursing education policy. Psychiatric nursing students will have their own unique stressors specific to their field, as will students in other areas such as adult, child and learning disabilities settings. A more comprehensive account of the stress process in U.K. psychiatric nursing students is therefore needed and this study adds to this gap in the literature.

One of the most impressive studies focusing specifically on psychiatric nursing students is a qualitative study by Kipping [22], who asked participants (n=447) the open-ended question "looking back over your psychiatric nursing experience, what, if anything, have you found

stressful?" Participants reported stressors such as feeling unable to make a difference, the physical environment, problems with their clinical placement, exams/assessments/written work and personal issues outside of the course.

1.4 Mental Health Professionals Personal Experiences

Since its introduction by Jung [23], the 'wounded healer' has become a well-established phenomenon in the academic literature and popular culture and suggests that mental health professionals are often compelled to treat clients due to their own personal experiences. Indeed, it has been suggested that mental health professionals are likely to be more susceptible to mental health problems due to a higher prevalence of problems in their personal and home lives. For example, in a large American investigation by Elliott and Guy [24], it was found that qualified female clinical psychologists reported higher levels of physical and sexual abuse, psychiatric history, parental alcoholism and greater dysfunction in their families than other professionals. Similar findings have been found in studies focusing on psychiatrists [25,26] and other groups of psychologists [27].

1.5 Alcohol and Health Behaviours

Research has demonstrated that alcohol consumption is not directly related to self-perceived psychological ill health in university students (see Wicki, Kuntsche and Gmel [28] for a review). Pickard et al. [29] interpreted this as an indicator that alcohol is not used to relieve stress. Other researchers [30] have also considered the possibility that alcohol consumption is instead an effective but maladaptive coping strategy.

Other health behaviours, such as diet and exercise have been found to be related to stress in students. For example, Oliver and Wardle [31] found the majority of students in their study (73%) reported snacking behaviour when stressed. The explanation given by the authors was that students who are under stress are more likely to choose energy-dense foods rather than non-energy dense foods. Additionally, Lee and Loke [32] found that relatively few university students had a sense of "health responsibility" with only 14% reporting exercise on a regular basis and less than half ate fruits (35%) or vegetables (48%) every day.

1.6 A Multi-dimensional Approach to Stress

Very little research focusing on stress considers the effects of multiple factors on outcomes. It is more common for stress researchers to focus their efforts on the nature and effects of a small number of stressors in isolation [33]. However, this approach is unlikely to be representative of real-life situations, in which individuals are exposed to multiple hazards at work. Furthermore, stressors outside of work and individual difference variables will also have an influence on outcomes. The present study adopts a more holistic approach to stress measurement, with group comparisons and a multi-dimensional approach being preferred.

The Demands, Resources and Individual Effects model (DRIVE model) suggested by Mark and Smith [34] is applied to the framework of this study. The original DRIVE model includes factors such as demands, resources, individual differences and outcomes. However, this model was designed to be a flexible framework that allows other relevant variables to be applied [34]. An enhanced DRIVE model was also developed by the authors, which considered a subjective element and includes perceived stress as having an interactive effect. Specifically, the model proposes direct effects on outcomes by each of the other variable groups, as well as an interaction effect of perceived stress on demands and resources. In the present paper, this multi-dimensional approach to work stress is employed, with work characteristics, coping, appraisals, personality, health behaviours, childhood experiences and outcomes being measured. The effects of multiple factors are explored on three outcomes; perceived stress, job satisfaction and psychological ill health. Additionally, an interactive effect of perceived stress on demands and resources is considered.

2. METHODS

2.1 Participants

A total of 515 participants completed an online questionnaire. The questionnaire was cross-sectional in nature and participant recruitment involved convenience sampling whereby an email advertisement was forwarded to potential participants. Respondents included 168 trainee clinical psychologists recruited from five U.K. clinical psychology courses, 94 psychiatric nursing students from three U.K. nursing courses

and 253 PhD students from three institutions. The PhD students were from a wide range of disciplines and some worked across disciplines. They were asked to confirm that their work does not involve patient contact or other substantial clinical work before taking part in the study. All participants were enrolled as full-time students.

The majority of the trainee clinical psychologists were female (152, 90.5%) with a mean age of 29.41 years (SD = 3.973, minimum 22 years, maximum 45 years). Most were married or in a relationship (135, 80.8%) and of White ethnicity (156, 93.4%). In terms of year of training, there were 51 participants in year one (30.5%), 52 in year two (31.1%) and 64 in the final year (38.3%) of their training programme. In the psychiatric nursing students group, most were female (81, 86.2%) with a mean age of 25.83 (SD = 7.567, minimum 18, maximum 59), were married or in a relationship (61, 64.9%) and of White ethnicity (89, 94.7%). Across the years, there were 38 first year (40.4%), 24 second year (25.5%) and 32 final year (34%) students. Most PhD respondents were female (194, 76.7%), mean age of 28.02 years (SD = 6.673, minimum 21, maximum 63), married or in a relationship (192, 75.9%) and White ethnicity (224, 88.5%). There were 64 in year one (25.3%), 71 in year two (28.1%) and 118 in their final year (46.6%) of training.

2.2 Procedure and Measures

Ethical approval was provided by the School of Psychology Ethics Committee. Once permission from the course directors was given, participants were forwarded an advertisement via email from the researcher inviting them to take part in the study. Informed consent was obtained online from the participants.

Measures included demographics, work characteristics, appraisals, individual differences, coping, childhood experiences, health behaviours and mental health outcomes. Work characteristics, appraisals, coping and mental health outcomes were measured using single-item questions from the Wellbeing Process Questionnaire (WPQ) [35]. This questionnaire allowed a multi-dimensional approach to be used whilst limiting the associated practical problem of participants filling out lengthy questionnaires. The items in this questionnaire have been shown to correlate with multi-item scales and predict outcomes just as well as these scales [35].

Personality was measured using the Big 5 Inventory-10 [36], which measures the big five personality traits in a short-form questionnaire. Perfectionistic personality traits were also measured using the Almost Perfect Scale Revised [37], a questionnaire which includes three variables: standards, order and discrepancy. Core-self evaluations were measured using the Core Self Evaluations Scale (CSES) [38]. The CSES is a 12-item questionnaire that has been developed to operationalise the construct of core self-evaluations, a construct incorporating self-esteem, generalised self-efficacy, locus of control and neuroticism. Imposter feelings (i.e. worries about competency) were also measured using the Imposter Phenomenon scale [39]. The childhood experiences measures included were the Child Abuse and Trauma Scale [40] and the Parentification Inventory [41]. The CATS yields individual scores on three separate subscales: Negative home environment, child physical abuse/punishment and child sexual abuse. The PI also has three subscales: Parent-focused parentification, sibling-focused parentification and perceived benefits of parentification.

Two additional questions were created; one asked participants whether they themselves had ever suffered from a mental health problem and another asked whether their parents or principal caretaker has ever suffered from a mental health problem. These questions included a list of all psychological disorders outlined in the Diagnostic and Statistical Manual of Mental Health Disorders 5th edition and participants were given a score of one for each experience they selected. Participants were given the opportunity to add extra or non-specified disorders to the list if necessary, or to select “no mental health disorders”. Dietary variables included single item questions that asked how often the participants consumed certain products. This included breakfast, fruit and vegetables, biscuits, crisps and chocolate. A single item also measured the amount of exercise participants engaged in on a weekly basis. As alcohol consumption is likely to differ in the amount consumed during weekdays and weekends, this was measured with 4 items. One question asked the participants the number of days they drink alcohol on weekdays (Monday to Thursday) and another asked them the number of days they drink alcohol on the weekends (Friday to Sunday). The other two questions asked how many units of alcohol they normally consume on weekdays and weekends

respectively. For the full list of measures see Table 1.

3. RESULTS

3.1 Demographics and Principal Component Analysis

There were no significant differences for ethnicity. However, there was a significant difference for gender between trainee clinical psychologists and PhD students ($P<.001$), with a higher percentage of females in the trainee clinical psychology group. However, this was not the case for the gender distributions between trainee clinical psychologists and psychiatric nursing students or between PhD students and psychiatric nursing students, with both analyses revealing no significant differences. There was a significant difference for age, with psychiatric nursing students being significantly younger than trainee clinical psychologists ($P<.001$) and PhD students ($P=.009$). However, there were no significant age differences between trainee clinical psychologists and PhD students. First, Principal Components Analyses (PCA) were conducted. Direct oblimin was used as an oblique rotation to extract eigenvalues equalling or exceeding the threshold of 1. The components are described in Table 2.

To reduce the variables into manageable units and decrease the possibility of chance effects, component scores were created using the Anderson-Rubin method and these scores were used in later analysis. In total, there were 15 components, including three outcomes. Independent variables included job demands, resources, emotion-based coping, seeks social support, negative personality traits, conscientious attitude, relationship focused personality, negative childhood experiences, childhood responsibilities, alcohol consumption, healthy lifestyle and bad diet. Outcomes included perceived stress, job satisfaction and psychological ill health.

3.2 ANOVA and Post Hocs

ANOVA analyses were then conducted to reveal any differences between the groups on component scores. The results are presented in Table 3. These analyses revealed that at least one group differed from another on the following components; resources, job demands, perceived stress, emotion-based coping, seeks social

support, negative personality traits, relationship experiences, healthy lifestyle and psychological focused personality, negative childhood ill health.

Table 1. From left to right: the factors considered in the questionnaire, the individual variables and the description of the measure

Factor	Individual variables	Description of measures
Work characteristics	Demands, control, support, effort, reward, supervisor relationship.	Single-item measures from the Wellbeing Process Questionnaire (WPQ) [35].
Appraisals	Perceived job stress, outside work stress, hassles, uplifts, job satisfaction.	Single-item measures of appraisals from the WPQ.
Coping	Problem-focused, seeks social support, blame-self, wishful thinking, avoidance.	Single-item measures of coping from the WPQ.
Health behaviours	Alcohol, sleep, exercise, breakfast, chocolate, crisps, biscuits, fruit & vegetables.	Single items of health behaviours.
Individual differences	Extraversion, agreeableness, conscientiousness, neuroticism, perfectionism variables (standards, order, discrepancy), imposter feelings, core self-evaluations.	Big 5 Inventory-10 [36], Almost-Perfect Revised Scale [37], Imposter Phenomenon scale [38], and Core Self Evaluations Scale [39].
Childhood experiences	Negative home environment, sexual abuse, physical abuse, own mental health disorder, families' mental health disorder, parent-focused and sibling-focused parentification, perceived benefits of parentification.	Child Abuse and Trauma Scale [40], Experiences of Mental Health scale, and Parentification Inventory [41].
Outcomes	Depression, anxiety, burnout, happiness.	Outcomes were measured using single-item measures from the WPQ.
Demographics	Age, gender, ethnicity, year of training, education level	Single item questions

Table 2. Results of the principal components analysis

Work characteristics	Factor loading	Cumulative % variance
Component 1: Resources		
Support	0.836	65.4%
Reward	0.802	
Supervisor relationship	0.718	
Control	0.682	
Component 2: Job demands		
Effort	0.900	
Demands	0.874	
Appraisals	Factor Loading	Cumulative % variance
Component 1: Perceived stress		
Outside of Work Stress	0.885	63.5%
Job Stress	0.719	
Hassles	0.678	
Component 2: Job satisfaction		
Job Satisfaction	0.857	
Uplifts	0.746	

Table 2 continued.....

Coping	Factor loading	Cumulative % variance
Component 1: Emotion-based coping		
Avoidance coping	0.713	59.7%
Wishful thinking	0.699	
Problem-focused coping*	0.679	
Blame-self coping	0.677	
Component 2: Seeks Social Support		
Seek social support coping	0.918	
Individual differences	Factor loading	Cumulative % variance
<i>Component 1: Negative personality traits</i>		
Imposter feelings	0.918	67.8%
Discrepancy (negative perfectionism scale)	0.899	
Neuroticism	0.677	
<i>Component 2: Conscientious attitude</i>		
Conscientiousness	0.819	
Likes high order (perfectionism scale)	0.768	
Likes high standards (perfectionism scale)	0.761	
<i>Component 3: Relationship focused personality</i>		
Agreeableness	0.869	
Extraversion	0.646	
Childhood experiences	Factor Loading	Cumulative % variance
<i>Component 1: Negative childhood experiences</i>		
Perceived benefits of parentification*	0.760	55.9%
Negative home environment	0.730	
Own psychiatric history	0.663	
Sexual abuse	0.631	
Punishment	0.603	
Families psychiatric history	0.442	
<i>Component 2: Childhood responsibilities</i>		
Sibling-focused parentification	0.882	
Parent-focused parentification	0.872	
Health Behaviours	Factor Loading	Cumulative % variance
<i>Component 1: Alcohol consumption</i>		
Units of alcohol consumed (weekdays)	0.833	51.184
Number of days alcohol is consumed (weekdays)	0.809	
Units of alcohol consumed (weekends)	0.787	
Number of days alcohol is consumed (weekends)	0.767	
<i>Component 2: Healthy lifestyle</i>		
Fruit and vegetables consumption	0.714	
Breakfast consumption	0.713	
Amount of exercise (weekly)	0.642	
<i>Component 3: Bad diet</i>		
Biscuits consumption	0.764	
Chocolate consumption	0.749	
Crisps consumption	0.608	
Health outcomes		
<i>Component 1: Psychological ill health</i>		
Depression	0.877	62.117%
Happiness*	0.822	
Anxiety	0.775	
Burnout	0.663	

* = recoded variable

Bonferonni post hoc comparison tests were then conducted. Trainee clinical psychologists reported significantly more resources than psychiatric nursing students ($P=.05$) and PhD students ($P=.002$). They also reported more job demands than the other groups ($P<.001$) and

engaging in more seeking social support coping than PhD students ($P=.05$). Trainee clinical psychologists reported higher perceived stress than psychiatric nursing students ($P=.042$) and PhD students ($P<.001$) and more negative childhood experiences than PhD students ($P=.015$). Furthermore, trainee clinical psychologists reported significantly more psychological ill health than PhD students ($P=.024$). Psychiatric nursing students reported more emotion-based coping than both of the other groups ($P<.001$) and engaged in a less healthy lifestyle than both the other groups ($P<.001$). Psychiatric nursing students reported significantly higher on both the negative personality traits ($P=.015$) and the relationship focused personality traits components ($P=.049$) than PhD students.

3.3 Regressions

A series of regression analyses were then carried out to investigate the associations of the multiple independent variables to psychological ill health, perceived stress and job satisfaction. The independent variables were selected on the basis of manual backwards selection, taking into account significance level and standardised beta weights. In all regressions and before backwards selection, participants' age, gender, year of training and ethnicity were included as independent variables. However, they did not emerge as significant predictors in many of the tests and those that did were included in the analyses. Therefore, these variables have not confounded any of the significant relationships presented here. Intercorrelations of the independent variables showed no relationships over .8, therefore suggesting no issues with

multicollinearity. A series of analyses including interaction terms were also conducted, but no significant interaction effects were found. All regressions were significant at $P<.001$.

The regressions presented in Table 4 shows the overarching structure of the variables by taking into account all participants. Demands and core self-evaluations were the most important predictors of psychological ill health by beta weight. For perceived stress, job demands and negative childhood experiences were the most important predictors and for job satisfaction the most important were resources and core self-evaluations. The variables presented in the table account for 59.5% of the variance in psychological ill health, 38.5% of the variance in perceived stress and 44.3% of the variance in job satisfaction.

The regressions presented in Table 5 include the trainee clinical psychologist group only. Job demands and core self-evaluations were the most important predictors for both psychological ill health and perceived stress by beta weight. For job satisfaction, the most important predictors were resources and relationship focused personality. The regressions account for 55.3% of the variance in psychological ill health, 35.8% of the variance in perceived stress and 39.2% of the variance in job satisfaction.

The regressions presented in Table 6 include psychiatric nursing students only. Job demands and core self-evaluations were the most important predictors for psychological ill health by beta weight. For perceived stress, the most important predictors were job demands and

Table 3. ANOVA table displaying differences between groups

Factor	df	F	P	partial η^2
Resources	2, 507	6.223	.002	.024
Job demands	2, 507	11.934	<.001	.045
Perceived stress	2, 509	11.553	<.001	.043
Job satisfaction	2, 509	2.068	.127	-
Emotion-based coping	2, 511	12.929	<.001	.048
Seeks social support	2, 511	3.090	.046	.012
Negative personality traits	2, 511	3.956	.020	.015
Conscientious attitude	2, 511	2.677	.070	-
Relationship focused personality	2, 511	3.433	.033	.013
Negative childhood experiences	2, 512	4.549	.011	.017
Childhood responsibilities	2, 512	1.615	.200	-
Alcohol consumption	2, 505	1.304	.272	-
Healthy lifestyle	2, 505	9.906	<.001	.038
Bad diet	2, 505	.917	.400	-
Psychological ill health	2, 509	3.734	.025	.014

Table 4. Regressions for the whole sample

Psychological ill health	B	SE B	β	t	P
Resources	-.059	.033	-.061	-1.822	.069
Job demands	.267	.030	.270	8.816	.000
Emotion-based coping	.101	.039	.102	2.587	.010
Alcohol consumption	.099	.029	.100	3.360	.001
Healthy lifestyle	-.082	.029	-.083	-2.793	.005
Negative personality traits	.120	.047	.121	2.550	.011
Conscientious attitude	.060	.032	.060	1.866	.063
Relationship focused personality	-.098	.031	-.099	-3.197	.001
Negative childhood experiences	.121	.029	.129	4.093	.000
Core self-evaluations	-.560	.084	-.338	-6.685	.000
Model: R = .771, R ² = .595				F:72.174	.000
Perceived stress	B	SE B	β	t	P
Resources	-.072	.040	-.073	-1.792	.074
Job demands	.396	.037	.398	10.663	.000
Healthy lifestyle	-.065	.035	-.065	-1.828	.068
Negative personality traits	.116	.053	.116	2.172	.030
Negative childhood experiences	.123	.037	.131	3.342	.001
Childhood responsibilities	-.070	.037	-.070	-1.911	.057
Core self-evaluations	-.232	.096	-.128	-2.401	.017
Model: R = .620, R ² = .385				F:44.100	.000
Job satisfaction	B	SE B	β	t	P
Resources	.431	.038	.442	11.460	.000
Job demands	-.136	.034	-.138	-3.962	.000
Alcohol consumption	-.082	.033	-.083	-2.460	.014
Relationship focused personality	.132	.035	.133	3.760	.000
Childhood responsibilities	-.092	.034	-.093	-2.707	.007
Core self-evaluations	.331	.065	.200	5.104	.000
Model: R = .666, R ² = .443				F:65.704	.000

Table 5. Regressions for the trainee clinical psychologist group

Psychological ill health	B	SE B	β	t	P
Job demands	.182	.046	.215	3.921	.000
Healthy lifestyle	-.087	.047	-.101	1.849	.066
Negative personality traits	.180	.063	.221	2.878	.005
Relationship focused personality	-.132	.050	-.156	-2.623	.010
Negative childhood experiences	.097	.051	.115	1.994	.049
Core self-evaluations	-.503	.125	-.323	-4.014	.000
Model: R = .744, R ² = .553				F:32.590	.000
Perceived stress	B	SE B	β	t	P
Job demands	.316	.058	.345	5.427	.000
Core self-evaluations	-.724	.106	-.434	-6.816	.000
Model: R = .598, R ² = .358				F:45.478	.000
Job satisfaction	B	SE B	β	t	P
Resources	.441	.078	.396	5.633	.000
Job demands	-.145	.061	-.156	-2.401	.017
Relationship focused personality	.178	.062	.193	2.862	.005
Core self-evaluations	.240	.122	.141	1.970	.051
Model: R = .626, R ² = .392				F:65.704	.000

negative childhood experiences and for job satisfaction, the most important predictors were resources and negative childhood experiences. The regressions account for 70.6% of the

variance in psychological ill health, 49.1% of the variance in perceived stress and 41.9% of the variance in job satisfaction.

Table 7 presents the regressions including PhD students only. Core self-evaluations and emotion-based coping were the most important predictors for psychological ill health. Job demands and core self-evaluations were the most important predictors for perceived stress, and for job satisfaction the most important

predictors were resources and core self-evaluations. The variables presented in the table below account for 62.9% of the variance in psychological ill health, 37.6% of the variance in perceived stress and 49.1% of the variance in job satisfaction.

Table 6. Regressions for the psychiatric nursing student group

Psychological ill health	B	SE B	β	t	P
Job demands	.405	.072	.349	5.599	.000
Resources	-.190	.078	-.164	-2.423	.018
Emotion-based coping	.247	.095	.199	2.600	.011
Alcohol consumption	.159	.072	.132	2.202	.030
Negative childhood experiences	.134	.051	.173	2.609	.011
Core self-evaluations	-.613	.173	-.318	-3.538	.001
Model: R = .840, R ² = .706				F:33.156	.000
Perceived stress	B	SE B	β	t	P
Job demands	.510	.085	.477	6.032	.000
Resources	-.198	.086	-.186	-2.313	.023
Alcohol consumption	.215	.086	.194	2.499	.014
Negative childhood experiences	.211	.057	2.96	3.712	.000
Model: R = .700, R ² = .491				F:20.458	.000
Job satisfaction	B	SE B	β	t	P
Resources	.409	.084	.419	4.822	.000
Job demands	-.198	.083	-.202	-2.393	.019
Alcohol consumption	-.162	.084	-.160	-1.929	.057
Negative childhood experiences	-.175	.056	-.269	-3.152	.002
Model: R = .647, R ² = .419				F:15.322	.000

Table 7. Regressions for the PhD student group

Psychological ill health	B	SE B	β	t	P
Job demands	.182	.045	.177	4.033	.000
Resources	-.086	.042	-.096	-2.075	.039
Emotion-based coping	.207	.051	.204	4.089	.000
Healthy lifestyle	-.163	.042	-.158	-3.868	.000
Bad diet	-.080	.042	-.077	-1.880	.061
Conscientious attitude	.095	.040	.103	2.387	.018
Relationship focused personality	-.078	.040	-.081	-1.924	.056
Core self-evaluations	-.822	.086	-.506	-9.571	.000
Model: R = .793, R ² = .629				F:50.400	.000
Perceived stress	B	SE B	β	t	P
Job demands	.354	.055	.345	6.392	.000
Healthy lifestyle	-.140	.053	-.136	-2.625	.009
Conscientious attitude	.124	.050	.134	2.487	.014
Childhood responsibilities	-.144	.056	-.134	-2.585	.010
Core self-evaluations	-.562	.091	-.344	-6.205	.000
Model: R = .613, R ² = .376				F:28.988	.000
Job satisfaction	B	SE B	β	t	P
Resources	.482	.049	.501	9.904	.000
Childhood responsibilities	-.144	.052	-.126	-2.746	.006
Core self-evaluations	.546	.088	.318	6.202	.000
Model: R = .701, R ² = .491				F:79.369	.000

3.4 Mediation Analysis

The Z Sobel test, using Hayes' [42] process tool for SPSS was used to investigate whether perceived stress mediates the relationship between demands and outcomes. With the outcome as psychological ill health, the total effect of X on Y was .4320 (CI: .3539-.5102, $P < .001$) with a direct effect of X on Y of .1408 (CI: .0673-.2142, $P < .001$). The indirect effect was .2913 and the confidence interval was .2352 to .3506. As this confidence interval does not contain zero, the indirect effect can be considered significant [42]. With the outcome as job satisfaction, the total effect of X on Y was -.2912 (CI: -.3748, -.2077, $P < .001$) with a direct effect of X on Y of .1400 (CI: -.2323, -.0478, $P = .003$). The indirect effect was -.1512 and with a confidence interval of -.2060 to -.1012. As this confidence interval does not contain zero, this effect is also considered significant.

We also tested whether perceived stress mediates the relationship between resources and outcomes. Using the same procedure and with the outcome psychological ill health, the analysis revealed a total effect of X on Y at -.3860 (CI: -.4652, -.3068, $p < .001$) with a direct effect of X on Y at -.2081 (CI: -.2730, -.1433, $P < .001$). The indirect effect was -.1779 and as the confidence

interval (-.2328, -.1270) does not contain zero, this can be considered significant [42]. For the outcome as job satisfaction, the analysis revealed a total effect of X on Y .5873 (.5176-.6570, $p < .001$) and a direct effect of X on Y .5225 (.4519-.5932, $p < .001$). The indirect effect of X on Y was .0648 (CI: .0375-.0980) and as the confidence interval does not contain zero, this effect is considered significant.

Taken together, these findings demonstrate that perceived stress partially mediates the relationship between demands/resources and outcomes. Fig. 1 summarises the overall structure of the analysis.

4. DISCUSSION

This study adopted a multi-dimensional framework to investigate stress in two groups of mental health students. The partially mediating role of perceived stress supports other research using this approach [34] and demonstrates that the appraisal of stress is an important outcome in itself when considering well-being policy. In addition to providing information on associated factors, the analysis revealed a number of interesting differences between the groups.

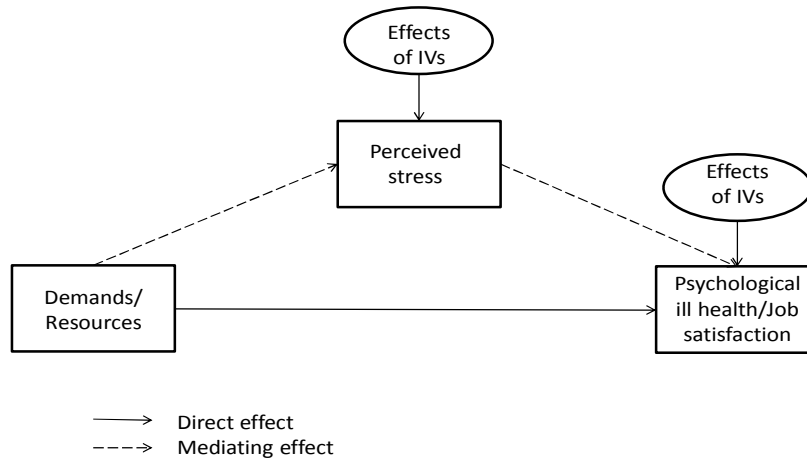


Fig. 1. Model shows the direct effects of independent variables (IVs) on perceived stress, psychological ill health and job satisfaction as well as the interactive effect of perceived stress on demands and resources

Trainee clinical psychologists reported higher demands and higher perceived stress than psychiatric nursing students and PhD students. They also reported higher levels of psychological ill health than PhD students. However, trainee clinical psychologists reported having more protective factors such as resources and seeking social support at their disposal than other groups. Despite this, high resources and seeking social support were not associated with perceived stress or psychological ill health in any of the trainee regressions. This suggests that other factors, such as individual differences variables, could be more important. Indeed, individual differences such as personality were the factors most strongly associated with outcomes for this group.

The finding that psychiatric nursing students reported significantly less resources than trainee clinical psychologists will not be surprising to many readers. A report by the Royal College of Nursing [43] reiterated their repeatedly raised concerns that government cuts to mental health services, as well as cuts to the nursing workforce and a failure to plan for the future has left the NHS understaffed and patient care compromised. They pointed towards the 3,300 psychiatric nursing posts across the UK that have been cut in the last four years and how the most experienced nurses have been disproportionately lost in these cuts, resulting in a loss of these skills and experience in the profession. Within this context, it is not surprising that psychiatric nursing students feel under resourced compared to trainee clinical psychologists, who are engaged in a training programme which, in comparison, tends to be well resourced and well protected in the U.K. It is therefore important that psychiatric nursing students do not only receive their training in environments that have safe staffing numbers, but also that the staff in these environments have the appropriate experience and skills to provide the necessary support and supervision. It is too often the case that nursing students can be used as an extra pair of hands on the ward, rather than being given the appropriate learning environment they need.

It is essential for nurse educators to discover the coping strategies employed by psychiatric nursing students so that they can be helped to cope effectively during their training. In this study, alcohol consumption was associated with all three outcomes for psychiatric nursing

students, but not in any of the regressions for the other groups, suggesting this could be a particularly important coping strategy employed by them. Psychiatric nursing students also reported the highest levels of emotion-based coping strategies and this factor was associated with higher psychological ill health. The potential greater use of academic and theoretical models in the training of postgraduate students could be relevant to this finding. For example, in a systematic review of stress and coping in nursing students, Galbait and Brown [44] concluded that training programmes should only incorporate stress interventions that take into consideration current theories of stress.

Trainee clinical psychologists reported a higher incidence of negative childhood experiences than PhD students and this was found to be associated with poorer psychological ill health for this group. Furthermore, negative childhood experiences were associated with all three outcomes for the psychiatric nursing students but not in any of the PhD student regressions. This updated information is in line with previous research conducted looking at childhood experiences in mental health professionals and provides additional support for the idea that mental health professionals are likely to themselves be "wounded" [24-27]. It is therefore important that multi-factor research looking into stress in mental health professionals accounts for such experiences.

There are limitations to the present study that should be acknowledged. The study allowed the examination of associations, but it cannot determine the direction of the effects. Therefore, causality cannot be inferred. However, we hope to address this in future work by focusing on the impact of multiple factors on stress outcomes longitudinally for these groups. Furthermore, our study may have suffered from other common limitations found in questionnaire data, such as response bias. For example, as this study used convenience sampling, those participants who responded to the questionnaire could be individuals more likely to respond at the extremes of the scales. We can also not be completely sure that trainee clinical psychologists, psychiatric nursing students and PhD students respond to questionnaires in the same way, as characteristics of the groups could have an impact on responses. For example, the reflective practice encouraged in the mental health professions could influence responses.

5. CONCLUSION

Mental health students in the U.K. are exposed to many stressors during training, but very few researchers have considered the effects of multiple factors on outcomes. In this study, we focused on both the personal and professional lives of trainee clinical psychologists and psychiatric nursing students, two groups that represent the future of the mental health workforce in the U.K. Investigating stress in mental health students is important, particularly during a time of increased pressure on NHS mental health services. The data presented here can feed into the effective management of U.K. mental health training.

ETHICAL APPROVAL

Ethical approval was provided by Cardiff University School of Psychology.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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