

empower learners from all backgrounds to try out their ability to benefit from HE – and so to research and create new knowledge for the benefit of us all.

In bringing these thoughts to a conclusion I would like to thank the *JPD* editors again for giving me this opportunity to write a reflective piece. The process of writing it has given me a chance to nurture the idea that a Learning Development approach can be summarised by the concept of working *alongside* others. What I will

take away from this writing experience is a new commitment for my own studies, to look into the implications of 'alongsideness' for epistemology, research practice and pedagogy.

References

- Bhaba, H. (1994). *The Location of Culture*. New York: Routledge.
- University Grants Commission (1984). *A Strategy for Higher Education into the 1990s*. HMSO.

Stress levels and their risk/protective factors among MSc Public Health students

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Abstract

There is increasing evidence that university students are particularly susceptible to feelings of stress. Given that many post-graduate healthcare students work with patients, the negative outcomes associated with feelings of stress may also impact upon the patient population. This study investigated the prevalence and risk/protective factors of self-perceived stress among 43 international public health post-graduate students. Results revealed that almost all participants scored in either the moderate or high stress level category, with South-Asian students scoring particularly high stress scores. Headache frequency, sleep duration and feeling the need for a holiday were the explanatory variables most strongly associated with stress. The results support and add to previous literature which suggests that international students are particularly susceptible to feelings of stress. Suggestions on the management and prevention of stress are proposed, while ideas for future research to build upon this study's findings are considered.

Keywords: Stress, mental health, international, post-graduate, public health students

Introduction

There is a growing evidence base which suggests that high levels of stress are particularly prevalent among university students. For example, Adlaf *et al.* (2001) found that the stress levels among Canadian university students significantly exceeded the stress levels among the general Canadian population. Perceived stress has been correlated to a number of unhealthy behaviours among university students, such as substance abuse (Park *et al.* 2004), poor psychological health (Bovier *et al.* 2004; Zhang *et al.* 2012), poor physical health (Bitnner *et al.* 2011), reduced social involvement (O'Brien *et al.* 2008) and poor academic performance (Sanders & Lushington 2002).

Public health students and other healthcare students are susceptible to the same problems that other students face, including burnout, pressure to succeed, financial concerns, and feeling isolated from home. However,

given that many of these students are either currently healthcare professionals or will be at some point in the future, we need to ensure that this workforce is able to practise safely and competently. The existence of mental health problems among healthcare staff jeopardises this and may also lead to risks for their patients.

Therefore, the aim of this small scale study was to measure the levels of perceived stress among MSc Public Health students. A secondary aim was to investigate various potential risk/protective factors of stress in order to form recommendations about coping strategies and to provide a basis for the direction of future research.

Methods

Sample

The sample comprised two MSc Public Health student cohorts who were voluntarily attending an SPSS workshop designed to assist with their dissertation's quantitative data analysis. The workshop was run in July 2011 (for the October 2010 taught student cohort) and again in July 2012 (for the October 2011 taught student cohort). On both occasions the workshops took place in the Psychology Data Analysis Laboratory located at the University of Bedfordshire's Park Square campus.

Measures

The study's outcome measure was the 'Stress Questionnaire' (International Stress Management Association, 2012). This questionnaire consists of 25 statements to which participants can either respond 'yes' or 'no'. By answering 'yes' to a particular statement, one 'stress point' is accrued. The questionnaire classifies participants who accrue a total between 14 and 25 stress points as having entered the 'high stress' threshold. As such, they are particularly prone to stress and stress-related illness, and should seek professional help and/or stress management counselling. Participants who accrue 5-13 stress points fall within the 'moderate stress' threshold and are likely to experience stress-related ill health and would benefit from stress management counselling. Accruing 4 stress

points or fewer places participants in the 'low stress' category. Such people are considered the least likely to suffer from stress-related illness.

The following socio-demographic and background data were also collected: age, ethnicity, sex, cohort (October or February), the number of hours spent working (including studying) in the past week, the number of 'free time' hours in the past week, the number of headaches experienced in the past month, the level of calm associated with their studies (0 = not calm at all; 100 = completely calm), how much participants feel they need a holiday (0 = I do not currently need a holiday at all; 100 = I am currently in desperate need of a holiday), whether they sleep at least 8 hours per day (yes or no), whether participants consider themselves as someone who generally worries a lot (yes or no), number of very close friends, whether participants are satisfied with their personal study environment (yes or no), whether participants are satisfied with their diets (yes or no), how often participants find time to exercise (never/very occasionally, sometimes/often), whether participants have pets or not (yes or no), preference for tea or coffee, and whether they work more effectively in the morning or evening.

Procedure

During the workshops, students were asked to complete an anonymised online questionnaire (created using the online survey software 'Qualtrics'). The data were then immediately pooled into an IBM SPSS 19 database and distributed to the workshop students. These students then used the dataset as a learning tool (including learning more about the SPSS database environment and how to run various statistical tests). A week after the end of the July 2012 SPSS workshop, all attending workshop students were emailed to enquire whether they would be happy to provide their retrospective informed consent to having their questionnaire being used as part of this study. An announcement was also created on the University's virtual learning environment, which provided the same message.

Data analysis

All descriptive and inferential statistical analyses were run using IBM SPSS (version 19). Responses to the Stress Questionnaire's 25 statements were summed to calculate a total stress score. Given the nature and size of the sample, non-parametric Mann-Whitney U tests of association were carried out using binary independent variables and the study's dependent variable which contained continuous data. Independent variables with continuous data were categorised into binary variables using median cut-off values.

Results

Forty-three students attended the SPSS workshops (21 students attended the SPSS workshop in July 2011, and 22 attended in July 2012), all of whom provided their retrospective informed consent. Nineteen were males (44%), 24 were females (56%), and the median participant age was 28 years (minimum = 23 years, maximum = 45 years). Ten students described their

ethnicity as South Asian (23%), 30 described themselves as African (70%), 2 were Greek (5%) and 1 participant described their ethnicity as British (2%). Thirty-four of the participants were from the October cohort (79%) and 9 were from the February cohort (21%). Please see Table 1 for a full breakdown of all socio-demographic and background descriptive data.

The median Stress Questionnaire score across the group was 12 (minimum reported score = 4, maximum reported score = 21). As figure 1 displays, only 1 student scored in the 'low stress' category, while 25 (58%) scored in the 'moderate stress' category, and 14 (33%) scored in the 'high stress' category.

As can be seen in Table 2, students who classified themselves as 'worriers' scored the highest median stress score, followed by those who reported sleeping less than 8 hours a day, students unsatisfied with their personal study environment, and students who described their ethnicity as South Asian. As can be seen in Table 3, strong significant differences in stress scores were revealed within the sleep length, holiday need, and headache frequency variables. Weaker but nevertheless meaningful differences in stress scores were found within the ethnicity (African vs. South Asians) and in relation to the question, 'Are you a worrier?'

Discussion

The results revealed that the SPSS workshop participants, in general, experienced a moderate-high level of stress. This is a worrying finding given the range of negative consequences that stress has for mental and physical health. It is therefore not surprising that higher stress strongly associated with headache frequency, sleep duration and holiday need. These findings also support previous research; Lund *et al.* (2010) found that stress levels strongly predicted sleep quality in a sample of 1,125 American high school students, while Nuallong (2011) reported that stress levels were strongly associated with headache frequency among 183 Thai medical students. Both Koh *et al.* (2012) and Cohen *et al.* (2000) have reported that stress levels among medical students are significantly lower after a holiday period. It is also unsurprising that the students who described themselves as 'worriers' scored significantly higher stress scores than 'non-worriers'. The association between worrying and stress is well documented. For example, Chung & Lee (2012), who surveyed 430 Korean university students, have also found that 'worrying about academic achievements' strongly correlated with higher stress scores. Szabó's (2011) cross-sectional study of 126 Australian university students revealed that worrying has a unique positive association with stress, significantly over and above the associations that both anxiety and depression have with stress.

Particularly concerning was that a third of the sample's scores crossed into the 'high levels of stress' threshold. This is a higher level than what is reported in most other previous research studies investigating university students' mental health. For example, Backović *et al.* (2012), who surveyed 670 home-based Serbian medical

students in their fifth and sixth year, found that high stress levels were associated with 14.2% of the sample. Andrews & Wildig (2004) revealed that 20% of 351 UK-based undergraduates in their second year reported clinically significant anxiety levels. Amr *et al.* (2008)'s cross-sectional study of 311 home-based Egyptian medical students found that 20.3% felt highly stressed. Bewick *et al.* (2008), who surveyed 1,124 students from four UK higher education institutions, found that 29% of students held clinical levels of psychological distress – a similar level but nonetheless lower than in this study. The most obvious interpretation for such high stress scores reported in this study is that international post-graduate students may be particularly susceptible to the stresses associated with student life. International students have to cope with not only all of the regular stresses of student life but also the weight associated with adjusting to life in a new host culture (Mathew & Sapsed, 2012). In many cases they must deal with these burdens without the same level of support that their family, friends and community would ordinarily provide in their native countries. Interestingly, this study's South Asian international students produced considerably higher stress scores than their African counterparts (a difference which was close to being significant). The implication here is that African international students cope with the demands of student life and acculturation more effectively than South Asian students. The validity of this finding, and the reasons for it, clearly require further investigation.

Conclusion

The results of this study indicate that a substantial proportion of MSc Public Health students experience a high level of stress. They also suggest that international students are particularly susceptible to the burdens of student life, perhaps more so than home-based students. Therefore, effective measures which prevent high levels of stress from developing during the course need to be ascertained. This study's findings strongly suggest that we should, at a minimum, re-emphasise the importance of sleeping well and making good use of holiday time during the course. Suggesting methods of controlling and managing feelings of worry may also be useful; indeed, there are many effective cognitive-behavioural therapy self-help techniques available to draw from that can be recommended to students. Students should also be regularly reminded of the range of student support services available to them if they are feeling stressed. To limit the impact that stigma may have on the uptake of these services, it must be made very clear that university support services take confidentiality very seriously, and are used to supporting culturally and ethnically diverse students. However, given the small sample size, the sampling biases, and the uncertainty associated with the Stress Questionnaire's level of validity, this study's findings and their interpretations should be treated with caution. Direction of causality also cannot be determined due to the cross-sectional research design. Clearly, future methodologically rigorous research is necessary to follow up and investigate this study's findings further. A study which investigates whether and why African

international students cope better with student life than South Asian international students is particularly welcome. Such future research is vital towards furthering our knowledge on how an unhealthy level of stress can be avoided. This is an important objective as by doing so, the range of damaging mental and physical consequences for student health can be minimised.

References

- Adlaf, E.M., Gliksman, L., Demers, A., & Newton-Taylor, B. (2001). The prevalence of elevated psychological distress among Canadian undergraduates: findings from the 1998 Canadian Campus Survey. *Journal of American College Health*, 50 (2), p67-72.
- Amr, M., El Gilany, A.H., & El-Hawary, A. (2008). Does Gender Predict Medical Students' Stress in Mansoura, Egypt? *Medical Education Online*, 14 (13), p12-20.
- Andrews, B. & Wilding, J.M. (2004). The relation of depression and anxiety to life-stress and achievement in students. *British Journal of Psychology*, 95 (4), p509-521.
- Backović, D.V., Živojinović, J.I., Maksimović, J., & Maksimović, M. (2012). Gender differences in academic stress and burnout among medical students in final years of education. *Psychiatria Danubina*, 24 (2), p175-181.
- Bewick, B.M., Gill, J., & Mulhern, B. (2008). Using electronic surveying to assess psychological distress within the UK university student population: a multi-site pilot investigation. *E-Journal of Applied Psychology*, 4, p1-5.
- Bittner, J.G. 4th, Khan, Z., Babu, M., & Hamed O. (2011). Stress, burnout, and maladaptive coping: strategies for surgeon well-being. *Bulletin of the American College of Surgeons*, 96 (8), p17-22.
- Bovier, P.A., Chamot, E., & Perneger, T.V. (2004). Perceived stress, internal resources, and social support as determinants of mental health among young adults. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, 13 (1), p161-170.
- Chung, H.K. & Lee, H.Y. (2012). Drinking behaviors by stress level in Korean university students. *Nutrition, Research and Practice*, 6 (2), p146-154.
- Cohen, L., Marshall, G.D. Jr, Cheng, L., Agarwal, S.K., & Wei, Q. (2000). DNA repair capacity in healthy medical students during and after exam stress. *Journal of Behavioural Medicine*, 23 (6), p531-544.
- Koh, K.B., Lee, Y.J., Beyn, K.M., Chu, S.H., Kim, D.M., & Seo, W.Y. (2012). Effects of high and low stress on proinflammatory and antiinflammatory cytokines. *Psychophysiology*, 49 (9), p1290-1297.
- Lund, H.G., Reider, B.D., Whiting, A.B., & Prichard, J.R. (2010). Sleep patterns and predictors of disturbed sleep in a large population of college students. *Journal of Adolescent Health*, 46 (2), p124-132.
- Mathew, D. & Sapsed, S. (2012). The international student and the challenges of lifelong learning, *eLearning Papers*, 29, p1-2 [accessed 28th August 2012]. Available from: <http://www.elearningeuropa.info/en/article/The-International-Student-and-the-Challenges-of-Lifelong-Learning>.
- Nuallaong, W. (2011). Correlation between stressors and academic performance in second year medical students. *Journal of the Medical Association of Thailand*, 94 (75), p81-85.
- O'Brien, A.P., Cho, M.A.A., Lew, A-M., Creedy, D., Ho, C.M.R., Fai C.M., & Gordon A.D. (2008). The need for mental health promotion and early intervention services for higher education students in Singapore. *The International Journal of Mental Health Promotion*, 10 (3), p42-48.

Park, C.L, Armeli, S., & Tennen, H. (2004). The daily stress and coping process and alcohol use among college students. *Journal of Studies on Alcohol*, 65 (1), p126-135.

Sanders, A.E. & Lushington, K. (2002). Effects of perceived stress on student performance in dental school. *Journal of Dental Education*, 66 (1), p75-81.

Szabó, M. (2011). The emotional experience associated with worrying: anxiety, depression, or stress? *Anxiety, Stress and Coping*, 24 (1), p91-105.

Zhang, X., Wang, H., Xia, Y., Liu, X., & Jung, E. (2012). Stress, coping and suicide ideation in Chinese college students. *Journal of Adolescents*, 35 (3), p683-690.

Table 1: Descriptive statistics associated with background variables/questions

Background variable/question		N	%	Median	Mean (SD)
Age				28	28.6 (4.2)
Sex	Male	19	44		
	Female	24	56		
Ethnicity	South Asian	10	23		
	African	30	70		
	British	1	2		
	Greek	2	5		
Cohort	October	34	79		
	February	9	21		
Workshop	July 2011	21	49		
	July 2012	22	51		
Hours spent working in past week				20	30.6 (21.1)
Hours of free time in past week				24	26.7 (18.4)
Exercise frequency	Never/very occasionally	16	37		
	Sometimes/often	27	63		
Are you a worrier?	Yes	13	30		
	No	30	70		
Number of close friends				3	3 (1.8)
Satisfied with personal study environment?	Yes	37	86		
	No	6	14		
Satisfied with diet?	Yes	31	72		
	No	12	28		
Number of headaches in past month				2	3.1 (3.7)
Pet owner?	Yes	1	2		
	No	42	98		
Level of calm associated with studies				70	62.9 (28.5)
Level of holiday need				80	71.9 (31.5)
Do you usually sleep ≥8 hours per day?	Yes	25	58		
	No	18	41		
Coffee or tea preference	Coffee	17	40		
	Tea	26	60		
Morning or evening work preference	Morning	21	49		
	Evening	22	51		

Table 2: Cross-tabulation of background variables/questions with Stress Questionnaire median and mean scores

Background variable/question		Stress median	Stress mean (SD)
All participants		12	11.6 (4.3)
Age*	<28 years	11	11.4 (4.2)
	≥28 years	12	11.7 (4.7)
Sex	Male	10	10.7 (4.8)

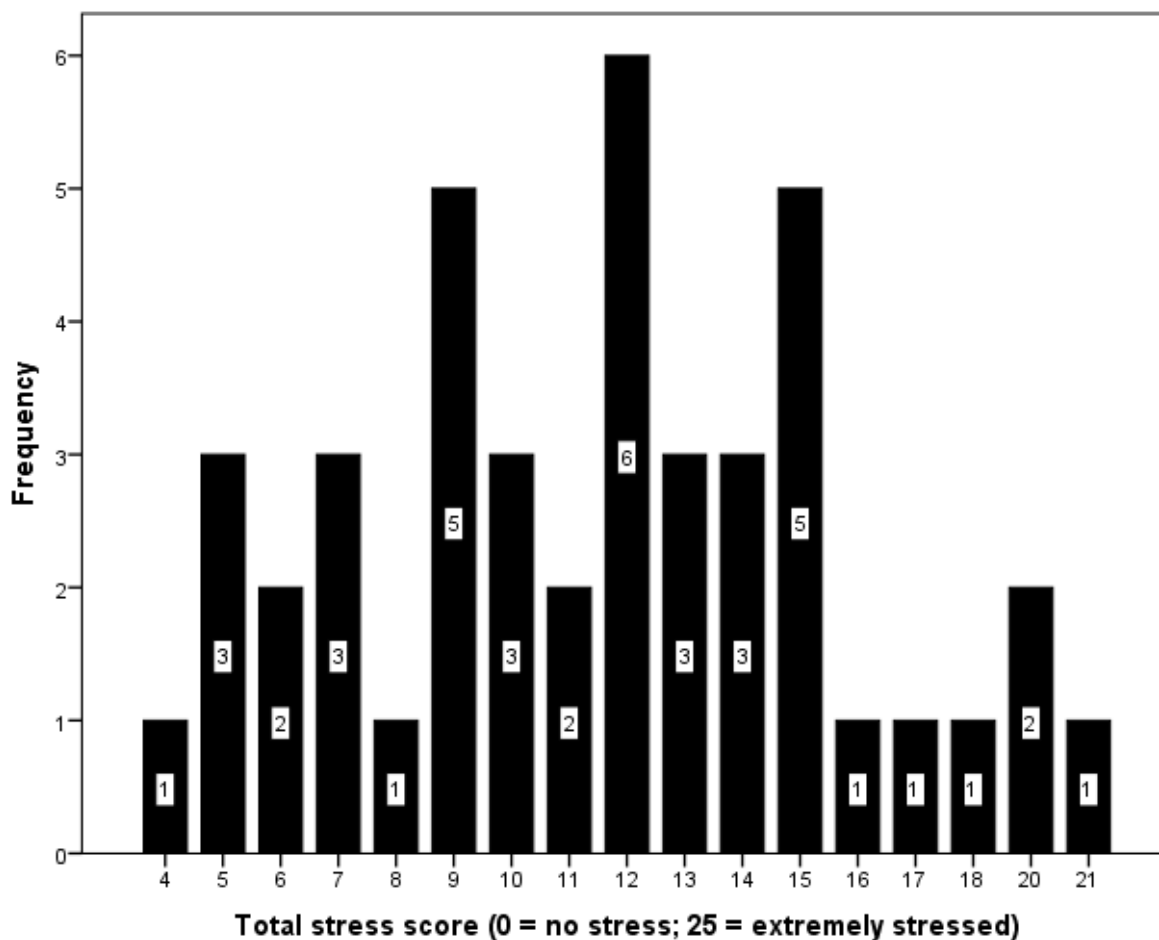
	Female	12	12.2 (3.8)
Ethnicity	South Asian	13.5	13.6 (4.4)
	African	10.5	10.6 (4.2)
Cohort	October	11.5	11.3 (4.1)
	February	13	12.7 (5.2)
Workshop	July 2011	12	11.4 (4)
	July 2012	11.5	11.7 (4.6)
Hours spent working in past week	<20	10.5	10.6 (5.2)
	≥20	12	11.9 (4.1)
Hours of free time in past week	<24	12	12.3 (4.3)
	≥24	12	11.3 (4.2)
Exercise frequency	Never/very occasionally	13	11.9 (3.7)
	Sometimes/often	12	11.3 (4.7)
Are you a worrier?	Yes	15	13.5 (4.6)
	No	11.5	10.7 (3.9)
Number of close friends*	<3	13	12 (5)
	≥3	12	11.5 (3.6)
Satisfied with personal study environment?	Yes	12	11.2 (4.3)
	No	13.5	13.8 (4.3)
Satisfied with diet?	Yes	12	11.2 (4.4)
	No	13	12.4 (4.1)
Number of headaches in past month*	<2	9.5	9.8 (4.3)
	≥2	13	13.2 (3.9)
Level of calm associated with studies*	<70	12	12 (3.6)
	≥70	12	11.2 (4.8)
Level of holiday need*	<80	9	9.7 (3.9)
	≥80	13	13.2 (4)
Do you usually sleep ≥8 hours per day?	Yes	9	9.9 (3.9)
	No	14	13.9 (3.8)
Coffee or tea preference	Coffee	12	12 (3.9)
	Tea	10.5	11.3 (4.6)
Morning or evening work preference	Morning	12	11.1 (4.3)
	Evening	12.5	12 (4.4)

* Binary categorisations based on median values

Table 3: Background variables/questions which produced numerical or significant stress score differences (in ascending order of significance)

Background variable/question		N	Mean Rank	Mann Whitney U value	Sig
Do you usually sleep ≥8 hours per day?	Yes	25	16.9	97.5	.002
	No	18	29.1		
Level of holiday need	<80	20	16.2	113.5	.004
	≥80	23	27.1		
Number of headaches in past month*	<2	16	14.6	97	.012
	≥2	23	23.8		
Ethnicity	South Asian	10	26.2	93	.077
	African	30	18.6		
Are you a worrier?	Yes	13	27	129.5	.083
	No	30	19.8		

Figure 1: Bar chart displaying frequency of stress scores



Pedagogical Inspiration through Martial Arts Instruction

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Abstract

This article discusses how the martial arts studio can be used as a model for improved instruction for the classroom teacher. Four common teaching techniques, common to the martial arts classroom, are defined and described. They are (a) motivating by praise and recognition, (b) differentiating instruction, (c) using formative assessments, and (d) employing preventive discipline. Explanation and illustrations of how to generalize each technique for the academic classroom are also included.

Keywords: pedagogy, martial arts, praise, differentiated instruction, formative assessment, preventive discipline

Sources of Pedagogical Inspiration

There are numerous sources for pedagogical inspiration. Each source seems to focus on a different outcome. Teacher preparation programs concentrate on the fundamental skills and knowledge that a fledgling teacher needs prior to setting foot in the classroom. On the job training and discussions with colleagues provide teachers with hands-on, practical knowledge grounded

in experience. Professional journals provide readers with cutting edge research and recommendation regarding best practices. One under-utilized source of potential inspiration is the examination of teaching instruction in non-traditional environments.

Teaching and learning consistently occurs in any number of environments outside of the traditional academic school. Some of the best places to look for such pedagogical inspiration are among the thousands of private businesses that teach non-academic skills to individuals on a regular basis. Examples of such skills might include music, dance, and athletics. One such booming area of focus within the area of sports is martial arts training.

Martial Arts and Pedagogy

Martial arts are defined as: 'any of the traditional forms of Oriental self-defence or combat that utilize physical skill and coordination without weapons ('martial arts', Dictionary.com). Popular branches of martial arts, such as karate, tae-kwon do, and judo promise to help individuals gain confidence, improve focus, get in shape,