Educational Research Vol. 1(4) pp. 088-098 May 2010
Available online http://www.interesjournals.org/ER


*Full length Research Paper*

# Non UK University students stress levels and their coping Strategies

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Accepted 13 May, 2010

**The aim of the study was to investigate stress levels, experiences of stress and coping strategies of non-UK students studying at the University of Manchester, UK. The main purpose was to consider their perceived stress levels, their experiences of stress and their coping strategies and to link these to the continents from which they came, their gender and whether they were graduates or undergraduates. This research consisted of two phases. The first phase was a survey that used self-administered structured questionnaire of 329 non-UK students who completed the perceived stress scale (PSS), the inventory of college students recent life experiences (ICSRLE) and the coping inventory for stressful situations (CISS). In addition, a further 74 UK students completed only the (PSS). Phase two was a qualitative study consisting of open-ended in-depth interviews of 16 volunteers. In all, 403 students participated in this study. Key findings indicated that, time pressure and work demands were the non-UK students' most stressful experiences. Anxiety, academic alienation and future academic prospects and unfamiliarity with the educational and cultural norms added to their difficulties. Gender was the most significant predictor of non-UK students' stressful experiences, whilst female students expressed higher levels of distress than their male counterparts. In addition, task and avoidance strategies were used by all non-UK students to cope with stress, but European students tended to use more adaptive coping strategies than did Asian and African students.**

**Keywords:** Stress, coping, culture shock, graduates, undergraduates, gender

## INTRODUCTION

Stress can refer to experiencing events perceived as endangering one's physiological, physical or psychological wellbeing or a combination of these and when there is excessive pressure its intensity and chronic nature can lead to mental and physical ill health including depression, nervous breakdown and heart disease (Quick, Nelson and Hurrel, 1997). Pinel (2003) defines stress as a physiological response to perceived threat. It is therefore the negative effects of life's pressures and events (Benson and Stuart, 1992) and can generally be viewed as a set of neurological and physiological reactions that serves an adaptive function (Franken, 1994).

Causes of stress include life changes, chronic stress, and hassles which according to Lazarus and Folkman (1984) are "*daily interactions with the environment that were essentially negative" (*p.10) (as cited by Seaward, 1994). Kanner, Coyne, Schaefer and Lazarus (1981) describe hassles as the irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment. Holmes and Rahe (1967) indicated that, any life change that requires numerous readjustments can be perceived as stressful. Chronic unrelieved stress can cause many psychological and physical distresses on different people in different ways (Eshun, 1998; Goldman and Wong, 1997, Misra and McKean, 2000).

Whilst stress can be challenging and useful to a certain degree (Selye, 1976), an optimal level of stress is characterized by high energy, mental alertness, high motivation, calmness under pressure, thorough analysis of problems, improved memory and recall, sharp perception, and a generally optimistic outlook (Forbes, 1979). Different people experiencing similar life conditions are not necessarily affected in the same manner (Pearlin, 1982).

There are many approaches to and formulations of the term stress. It can be understood as a phenomenon of

the external environment; painful stimulation, noise, arguments, among others, in which case, stress is considered an independent variable. It can be considered as a response by the individual; sympathetic arousal, release of catecholamine or cortisol, anxiety, anger, among others in which case, stress acts like a dependent variable. It can be seen as an interaction (transaction) between the individual and the environment; a process (Sandín, 1999).

Although stress is necessary to challenge students to learn, certain approaches are needed to reduce the negative aspects of stress (distress) which lessens students' learning and performance which may also lead to unique "coping styles" a typical manner of confronting a stressful situation and dealing with it (Folkman and Lazarus, 1980; 1985). The effects of stress are directly linked to coping which is a response aimed at reducing the physical, emotional and psychological burden that is linked to stressful life events and daily hassles (Snyder, 1999).

The concept of coping is based on three theoretical components namely, physiological, cognitive and learned. Physiologicall*y* the body's systems have their own ways of coping with distressing events. Threats or challenges that an individual perceives in the environment can cause a chain of emotional arousal and neuroendocrine events that involves the secretion of catecholamine (epinephrine, norepinephrine) and corticosteroids (Frankanhauser, 1986).

However prolonged secretion of cortisol in the body can cause problems to the digestive system, musculoskeletal system and the recently established immune system. When the organism does not recover, it is likely to lead to both catecholamine and cortisol depletion and result in the third stage of the general adaptation syndrome (GAS) of exhaustion (Seyle, 1956).

The cognitive approach to coping is based on a mental process of how the individual appraises the situation, where the level of appraisal determines the level of stress and the unique coping strategies that the individual partakes (Lazarus et al; 1984).

The learned component of coping incorporates social learning theories, which assume that human motivation and behaviour is the result of what is learned through experiential reinforcement; the learned helplessness phenomena, which is linked to depression (Coyne, Aldwin and Lazarus, 1981); and the culture or society to which one belongs. The variety of learned component stress management techniques can find expression in the social learning theories which include behaviour modification, biofeedback, cognitive restructuring and even relaxation techniques such as meditation.

International students may not escape from some level of stress or adjustment problems which have to do with culture shock. Culture shock is a normal response to change comparable to adaptations made by people in the face of radical changes in life and therefore it is the process of initial adjustment to an unfamiliar environment (Pedersen, 1995). "*Adjustment can be conceptualized as a psychosocial concept which has to do with the process of achieving harmony among the individual and the environment. This harmony is achieved through changes in the individual's knowledge, attitudes, and emotions about his or her environment. This culminates with satisfaction, feeling more at home in one's new environment, improved performance, and increased interaction with host country persons*" (Hannigan, 1990).

Cultures and societies have their own set of rules of what they perceive to be stressful or not (Colby, 1987) and therefore culture shock, which Oberg (1960) refers to as the feeling of anxiety people experience when they are unable to utilize problem solving strategies they employed in the past can trigger strain and feeling of discomfort and result in psychological maladjustment (James, 1997) may be inevitable when people cross cultures.

Interest in stress among college students is related to the recognition that excessive stress is harmful to academic performance (Hockey, 1979; Silver, 1968) and may lead to dropping out (Hirsch and Keniston, 1970; Katz et al., 1968). Archer and Lamin (1985) found that, tests, grades, competition, time demands, professors and class environment and concern about future careers were major sources of academic stress.

Though students in general experience stress, research findings suggest international students who are individuals temporarily residing in a country other than their country of citizenship in order to participate in an international educational exchange (Paige, 1990), may experience extreme stress with higher levels as a result of culture shock and that if they fail to adjust to new, challenging and diverse demands, they undergo high levels of loneliness, depression and increased physical and mental health problems (Pedersen, 1995). Therefore arriving from a different country, they face many difficulties in their daily life which include finding places to live, choosing banks to deposit and withdraw money, finding buses, trams and trains. International students' stressors are associated with communication barriers, culture shock, and loss of social support system, academic overload and different educational expectations (Sandhu, 1994). Students of different cultures tend to evaluate their studies abroad experience as stressful as cited by Mallinckrodt and Leong (1992).

Daily difficulties of international students studied by Pruitt (1978) indicated that, African students experience problems such as "*climatic, communication with Americans, discrimination, homesickness, depression, irritability, and tiredness*". Adelegan (1985) summarized the literature concerning the difficulties faced by African students in their adjustment and pointed out that some of the difficulties faced by them are financial problems,

psychological problems, food problems, and climatic problems.

Differences in stress levels between graduates and undergraduates are eminent. Toews, Lockyer, Dobson and Brownell (1993) compared levels of perceived stress among residents, medical students, and graduate students at a major medical university in Calgary, Canada. Results indicated that, stress levels were similar for all three groups and were described as "elevated," although the graduate level (MSc/PhD) students showed slightly higher levels of stress than the other two groups. The results of a postgraduate student's postal survey at the University of Leicester (2001) indicated that in comparison to the second year undergraduate students, research students expressed higher levels of concern about communicating with their department and the administration; their choice of course subject; and their general anxiety level. Perceived stress reported by Fisheries Graduate Students at Tennessee Technological University (1999) indicated that, almost all of the students reported moderate to high levels of stress concerning the writing of their thesis.

Pertinent to the gender differences in stress experiences, Nolen-Hoeksema (1990) and Weissman et al., (1996) noted that across many nations, cultures and ethnicities women are about twice as likely as men to develop depression which is linked to anxiety. They reported further that, women face a number of chronic burdens in everyday life as a result of their social status and roles relative to men and these strains could contribute to their higher rates of depressive anxiety. Depression has a strong relationship to anxiety as prolonged stress can lead to depression (Sarafino, 2002).

A lot of research has been conducted on stress and coping though, results are general regarding variations in cultures, gender and differences between graduates and undergraduates. After the literature review, there has not been any significant study about cultural variations in stress levels and coping strategies among international students studying in the UK. Hence the aim of the study was to investigate stress levels, experiences of stress and coping strategies of non-UK students studying at the University of Manchester, UK; in order to identify their difficult diverse stress related psychological problems and the coping strategies they might use, to develop culturally relevant services for them.

The outcome of the study has the potential to improve the quality of life of overseas students**.** In particular they may help; Lecturers and school administrators to fine-tune their organizational structure and climate to create an environment conducive for overseas students, University counsellors and mental health workers by providing specific information concerning cultural and individual differences in stress and coping, international students with information about ongoing support systems available to them in the host country in ways that considers their special status as international students, by providing them with encouragement and an opportunity to have a voice in expressing their needs, the Home Office by providing information on the degree of stress experienced by international students and hence encouraging their staff to be flexible in handling issues that concern them.

The main purpose was to consider their perceived stress levels, their experiences of stress and their coping strategies and to link these to the continents from which they came, their gender and whether they were graduates or undergraduates. Therefore the main research questions were: 1. a). What are the perceived stress levels of African, Asian, non-UK European and UK students studying at the University of Manchester?, 1.b) Are there significant differences between non-UK and UK students' perceived stress levels? 2. What are the major sources of stress amongst non-UK students at the University of Manchester? 3. What strategies are used to cope with the feelings of stress amongst non-UK students at the University of Manchester? 4. Are there significant differences at the perceived stress levels between a) graduates and undergraduates b) men and women from different continents? 5. Are there significant differences in stress experienced between a) graduates and undergraduates b) men and women from different continents? 6. Are there differences in coping methods adopted by non-UK Students from the different continents? 7. What are the most significant predictors? From the foregoing, it is assumed that, stress levels and coping strategies may differ across cultures hence a supportive campus environment essential for assisting them attain their academic and personal goal of studying in a foreign culture.

## MATERIALS AND METHODS

This research consisted of two phases. The first phase was a survey that used self-administered structured questionnaire of 329 non-UK students who completed the perceived stress scale (PSS), the inventory of college students recent life experiences (ICSRLE) and the coping inventory of stressful situations (CISS). In addition, a further 74 UK students completed only the (PSS). Phase two was a qualitative study that used open-ended in-depth interviews of 16 volunteers. In all 403 students participated in this study.

### Measures and procedures

After a review of literature for appropriate and reliable instruments, we chose the following three instruments: The Perceived Stress Scale (PSS) developed by Cohen (1985) and designed to measure the degree to which respondents found their lives "unpredictable, uncontrollable, and overloading" (Cohen and Williamson, 1988). The psychometric properties of the PSS indicated that initial reliability coefficients obtained by Cohen, Kamarck and Mermelstein (1983) ranged from .84 to .86. In 1988, the psychometric properties of the PSS were again explored. Cronbach's alpha coefficient for

the internal reliability of the PSS14 was .75. As a result of factor analysis, a shorter version of the PSS scale was developed (Cohen et.al, 1988) by the authors of the original PSS. The PSS10 was derived by dropping four items from the original scale. Cronbach's alpha coefficient for the PSS10 was .78. The 10 and 14 item self-report instruments have established reliability and validity of (r=0 .85). In this study, the scale used was the PSS10 because it was appropriate and based on psychometric principles considered to be sound. The Cronbach's alpha coefficient for the PSS10 of this study was 0.89.

The Inventory of College Students' Recent Life Experiences (ICSRLE) was designed by (Kohn, Lafreniere and Gurevich, 1990) and is an instrument that measures exposure to recent hassles and was specifically targeted to the college population. It consists of 49 items. The factor structure and psychometric properties of the Inventory of College Students' Recent Life Experiences (ICSRLE; Kohn, et al; 1990) were investigated in a sample of 216 college undergraduates. The ICSRLE confirmatory factor analyses supported the generalizability of the 49-item one-factor and 37-item seven-factor solutions to undergraduate sample. Forty-nine items correlated significantly with the PSS ranging individually from .17 ($p < .05$) to .48 ($p < .0005$). The alpha reliability of the ICSRLE was .89 in an initial item selection sample, and its correlation against the PSS was .67 ($p < .0005$). In a subsequent sub-sample, to correct for possible inflation of the estimates, the alpha reliability of the ICSRLE was .88, and its correlation against the PSS was .59 ($p < .0005$) (Kohn et.al, 1990). These findings support the reliability and validity of the ICSRLE. The Cronbach's alpha coefficient for the ICSRLE of this study was .80.

The Coping Inventory for Stressful Situations (CISS) is a self-report paper- pencil measure of coping consisting of 48 items. A multidimensional inventory developed by Endler and Parker (1990). Sixteen items each assesses Task- Oriented coping, Emotional-Oriented coping and Avoidance- Oriented coping. The avoidance dimension could be further subdivided into a Distraction scale (eight items) and a Social Diversion scale (five items). Very good psychometric properties were identified in several validation samples and coefficient alpha is highly reliable. On the Task scale the alpha ranges from. 87 for female adults to .92 for early male adolescents, Emotion scale ranges from .82 to.90 and Avoidance scale from .76 to .85. Test- retest reliabilities of Task and Emotion scales have highest reliabilities, above or equal to .68 and that of Avoidance scale range between .51 and .60. The reliabilities of this study range from .70 to .80 on all scales for both males and females.

Preceding the fieldwork for the study that was conducted between April, 2007 and February, 2008, the students were given informed consent in writing through the students' services. There were 7,400 international students at the time of data collection. It was a convenience and purposive sampling in that, the researcher hand-delivered the questionnaire to randomly chosen lecture theatres and halls of residence for international students in the University of Manchester, UK. Five hundred (500) copies were printed out with four hundred (400) to be completed by international students and one hundred (100) by UK students. Special arrangement was made for the students to complete the surveys and return them to the reception of the various faculties and halls of residence or Department of education (Educational Support and Inclusion), School of Education. The procedure was relatively successful. Thus out of four hundred (400) surveys for international students only forty four (44) or eleven (11%) were not returned and out of 100 for UK indigenous students, fifteen (15) or 15% were not returned. Out of a total, 329 (81.6%) are foreign students whilst 74 (18.3%) is made up of UK students.

The breakdown of the number of foreign students who responded to the questionnaire is Africa 90 (27.4%), Europe 91(27.7%) and Asia 148 (44.9%) with Asia students being the highest participants. Among the UK students, there were 24 (32.4%) males and 50 (67.6%) females; whilst 46 (62. 2%) Graduates participated, 28 (37.8%) represented Undergraduates. Overall 268 (66.50%) and 135 (33.49%) represent Graduates and Undergraduates respectively. The total number of males was 155 (38.4%) and that of females was 248 (61.5%).

All data for this study were analysed using the Statistical Package for Social Science (SPSS) version 15. By the nature and scope of the phenomenon under investigation it was necessary to factor analyse the three surveys i.e., PSS, ICSRLE and CISS. Exploratory factor analysis with principal component analysis of PSS, ICSRLE and CISS resulted in the retention of a number of items whose groupings into factors were subjectively labelled. The PSS had two factors namely Emotional Reaction (ER) and Self Confidence (SC). The ICSRLE produced eight stable factors and CISS scale yielded seven factors. A regression analysis on the ICSRLE was conducted to determine whether the resulting factors are in line with those in the test manuals. The regression for the ICSRLE involving the three continents; Africa, Europe (excluding UK) and Asia was based on ordered data in line with world economic development (GDP, 2006) in an ascending order.

The qualitative data were collected soon after the quantitative data. Initial request was made on the survey asking respondents to indicate their interest for a thirty minute face- to- face interview involving international students stressful experiences and coping strategies. They were asked to provide their e-mail addresses and or mobile phone numbers for the purpose of contacting them prior to the interview. As many as sixty participants provided their e-mails and mobile numbers.

E-mails were sent to all those who voluntarily opted for the interviewing and the objective, confidentiality and anonymity of the interview were discussed. An arrangement was made for the conduct of the interview privately. The PhD room, School of Education, University of Manchester was finally settled on for the exercise.

In all 16 international students (6 Europeans, 5 Asians and 5 Africans) participated as a result of time constraint. Before the interview, the purpose of the research interview was given and confidentiality of participants guaranteed as personal information was being shared. Permission was asked to tape record the dialogue. All the participants responded to the same semi-structured or open-ended questions. Individual interviews lasted between 25 and 40 minutes and all the topics related to the sources of stress and coping strategies were covered. Verbal appreciation was made immediately after the interview session and later e-mails were sent to participants expressing our gratitude for their shared time and experiences.

## RESULTS

### Descriptive statistics (PSS)

Descriptive statistics results of the PSS showed that, UK students' average mean emotional reaction was 2.29 (SD=.18) and self confidence 1.43 (SD=.18). The PSS scores indicated that, Europe had the highest perception of stress for both emotional reaction 2.49 (SD=.21) and self confidence 1.84 (.20), followed by Asia emotional reaction 2.35 (SD=.18) and self confidence 1.75 (SD=.13) and Africa emotional reaction 2.25 (SD=.14) and self confidence 1.61 (SD=.23). UK students had lower stress

**Table 1.** Descriptive statistics for ICSRLE

| ICSRLE Sources | CONTINENT | | |
|---|---|---|---|
| | AFRICA | EUROPE | ASIA |
| | Mean & SD | Mean & SD | Mean & SD |
| Time Pressure | 1.92(.26) | 2.20(.23) | 1.97(.28) |
| Relationship problems | 1.08(.16) | 1.25(.25) | 1.05(.18) |
| Anxiety | 1.08(.29) | 1.45(.30) | 1.32(.31) |
| Work Demands | 1.45(.20) | 1.65(.30) | 1.55(.23) |
| Feeling Undervalued | 1.10(.06) | 1.32(.30) | 1.19(.19) |
| Academic Alienation | 0.94(.05) | 0.97(.12) | 1.06(.11) |
| Future Academic Prospects | 1.94(.39) | 1.90(.49) | 1.70(.39) |
| Assorted Problems | 1.34(.34) | 1.41(.36) | 1.26(.25) |

levels than their foreign counterparts. Comparing non-UK and UK students PSS, results indicated that, the mean perceived emotional reaction for UK students was 2.29 (SD= .18) and self confidence 1.43 (SD= .18) whiles the former had overall average mean for emotional reaction as 2.36 (SD=.18) with self confidence representing 1.73(SD=.19). T-test analyses for UK students and Non-UK students was not significant (p >.05).

**Descriptive statistics (ICSRLE)**

On the ICSRLE, whilst Europe and Asia students had Time Pressure, Work Demands and Future Academic Prospects as their most stressful in a descending order, Africa students had Future Academic Prospects as the most stressful, followed by Time Pressure before Work Demands as shown in table 1 above.

**Descriptive statistics (CISS)**

Task coping for CISS was the main reaction towards stressful situations among foreign students. It has the highest score for all the continents. Thus in a descending order, Europe (M=4.00), Asia (M=3.72) and Africa (M=3.59). The second most significant coping mechanism employed by foreign students is Social Diversion and for Europe, the mean score is (M=3.45), Asia (M=2.98) and Africa (M= 2.88). The third is Deviation with Europe (M=3.45), Asia (M=3.18) and Africa (M=2.64).

UK students experienced lower stress levels than their foreign counterparts. Comparing non-UK and UK students PSS, results indicated that, the mean perceived emotional reaction for UK students was 2.29 (SD= .18) and self confidence 1.43 (SD= .18) whilst the former had overall average mean for emotional reaction as 2.36 (SD=.18) with self confidence representing 1.73(SD=.19).

**Inferential statistics**

The one-way between- groups analyses of variance (ANOVA**)** with Post-hoc Gabriel's test with the Games-Howell's procedure were conducted to determine whether there were significant variations among the respondents based on continent (Africa, Europe and Asia), gender (male and female) and level (graduates and undergraduates).

**Inferential statistics (PSS)**

One-way between-groups analyses of variance for the (PSS) subscale Emotional Reaction (ER), did not reveal significant difference at the $p < .05$ level for the three groups, [$F (2, 326) = 2.23$, $p = .109$]. The same process was used to explore the differences in perception of stress as measured by the (PSS) subscale Self Confidence (SF). There was no statistically significant difference at the $p < .05$ level among the groups [$F (2, 326) = 2.63$, $p = .073$)].

**Inferential statistics (ICSRLE)**

The overall results for the ICSRLE indicated that, there was no statistically significant difference among the three continents with regard to Relationship Problems (RP), Work demands (WD), Feeling Undervalued (FU), Academic Alienation (AA) and Assorted Problems (AP). However, statistically significant differences existed among the various groups for Time Pressure (TP) and Anxiety (A) at the ($p<.01$) level and Future Academic Prospects (FAP) at the ($P<.05$) level. Therefore Time Pressure (TP), Anxiety (A) and future Academic Prospects (FAP) may be cause for concern for foreign students.

**Table 2.** Factors affecting non-UK students stress experiences measured by ICSRLE

| Variables | B | Beta | t | Significance of t |
|---|---|---|---|---|
| Level | 2.302 | .089 | 1.624 | .105 |
| Gender | 4.279 | .172 | 3.048 | .002 |
| Continent | -.408 | -.028 | -.493 | .622 |
| Constant | 40.403 | - | 13.788 | 0.000 |
| | **R** | **R Square** | ***F*** | **Significance of *F*** |
| | .190 | .036 | 4.040 | .008 |

**Inferential statistics (CISS)**

One-way between-groups analyses of variance conducted to explore non-UK students' reaction to stress provided by seven stable factors on the CISS, revealed that, out of the seven, Task Coping (TC) and Social Diversion (SD) were statistically significant at the (P<.01) level, whilst Avoidance Coping (AC) and Distraction Coping (DC) appeared to be significant at the (p<.05) level across the three continents. On the contrary, Emotional Coping (EC), Assorted Emotional Coping (AEC) and Deviation (D) did not indicate significant differences among the groups.

**Regression analysis**

The relationship between the independent variables (continent, gender and level) and the dependent variable (ICSRLE) were explored by conducting "multiple regression analysis", a technique which offers a method for assigning causal probabilities to each variable identified as a contributor to foreign students stress levels. For the purpose of finding out the most significant predictor using standard multiple regression, values of all independent variables were simultaneously entered into the model to examine the effects of background variables on foreign students stress levels as measured by the ICSRLE. Table 2 depicts the standardised regression coefficients (Beta), unstandardised regression coefficient (B), significance level and *t* values, R square and the value of *F* with its significance. In the model, the R of the overall non-UK students' stressful experiences as measured by the ICSRLE and the predictor is 0.190. As can be seen from the table, the overall *F* is 4.040 with a significance level of .008. The R square indicates 3.6 % of the observed variability (*R*) squared which can be explained by the predictor (gender) that was found to be significant (.002). Gender was therefore the most significant predictor among the three predictor variables of non- UK students stress experiences as the results depict in table 2.

**Qualitative results**

The qualitative results showed that, international students most often face the same types of academic difficulties that all students face, such as test anxiety, difficulty with concentration, time management and also different challenges, such as language and/or reading difficulties and unfamiliarity with the UK teaching methods.

However there are specific issues that are unique to non-UK students which can be summarised into such categories as immigration requirements, financial difficulties, variation in the education system in the UK compared to their home country's education system, differences in academic relationships ( instructor-student, advisor-student, administrative staff-student, and student-student) and differences in help-seeking behaviours.

In exploring differences and similarities pertaining to stress and coping among males and females, the general picture presented in this study gives an indication that, there appears to be gender difference regarding the emergent themes notably vulnerability, control over difficulties and anxiety with women reporting relatively higher stressors than men whilst women used varying and relatively more effective coping styles.

**DISCUSSION**

The main objective of this investigation was to provide fundamental information that will increase our understanding about the differences in stress levels and coping strategies among international students studying in the United Kingdom. Additionally the aim was to examine their difficult diverse stress related psychological problems and their coping strategies in order to develop culturally relevant services for them.

The findings generally indicate moderate perceived stress levels for foreign students in emotional reaction and self confidence. Differences exist among the three continents with European students being highest on emotional reaction (M=2.49), followed by Asian students (M=2.35) and African students (M=2.25). The same trend

was evident on self confidence. This is congruent with intrapersonal and interpersonal problems consistent with Sandhu (1994) that includes a profound sense of loss, sense of inferiority and sense of uncertainty and mistrust (Sandhu, 1994; Sandhu and Asrabadi, 1994). UK students' mean perceived stress level on both emotional reactions (2.29) and self confidence (1.43) was lower than their non-UK counterparts (2.36) and (1.73) respectively. In a study questioning whether international students or domestic students experienced more stress-related symptoms, Ebbin and Blankenship (1986) found that international students frequently had headaches, insomnia, chest pain and gastritis. The above results lend support to the findings in this study. Though the stress-related symptoms are pathological, they may be indirectly or directly linked to the negative effects of emotional reactions and poor self concept. The qualitative element (confidence and ability, impressions / motivation and expectations) which are in line with Bandura (1986) self-efficacy supports the findings above. The moderation in self confidence in this study may be good. It is possible that, chronic low confidence about most things most of the time, can be devastating personally, professionally and socially. During the stressful adaptation to a different culture, self-efficacy may play a critical role as a personal resource that may protect against negative experiences and emotions and health impairment (Jerusalem and Mittag, 1995).

There was no significant difference among the three continents. However there was a statistically significant difference at the $p< .01$ level for both PSS subscales; Emotional Reaction [$F (1, 327) =16.90$, $p=.000$] and Self Confidence [$F (1, 327) =9.68$, $p=.002$] regarding gender with perceived stress levels of women being higher than men. There was statistically significant difference at the ($p< .01$) level between (undergraduates and graduates), [$F (1, 327) =14.19$, $p=.000$]. Graduates indicated higher perceived stress levels than undergraduates. This was confirmed by the qualitative element which indicated that graduates and women can experience higher perceived stress levels than undergraduates and men respectively. The foregoing can be linked to a postgraduate student' postal survey results 2001 at the University of Leicester which indicated that, in comparison to second year undergraduate students, research students expressed higher levels of concern in their general anxiety level. The differences though were not too wide, from the one hand it appears that, the students in my sample were not particularly stressed and on the other hand it is possible that the instrument was not sensitive to or good at identifying sources of stress that international students experience and that an alternative instrument should have been used. Alternatively it is possible that, Manchester University is very successful in helping to reduce the stress levels of international students due to its long standing reputation for admitting overseas students dating back over many years. One way one might explore this would be to do a comparative study with different universities throughout the UK. Time pressure and work demands are the most stressful experiences of non-UK students that were confirmed in both the quantitative and qualitative elements. It is argued that time pressure is inspired by the demand-control theory (Larsson, 2004) and that experience of time pressure prevails when the demands exceed the resources.

According to (Kristjánsson, 2001) time pressure stresses the gap between cultural ideals and the individual's reality; hence gap between one's factual time situations and the cultural ideal can cause an experience of time pressure but also become a driving force for change. Students in this study consistently and concurrently complained about time pressure and work demands with European students being anxious and more conscious of their time. The foregoing may be in line with what (Pearlin, 1982) stated about the trend in society, its value systems, the organization of its institutions, and the rapidity and extent of changes in these elements that can be sources of stress.

Anxiety, academic alienation and future academic prospects combined further added to the difficulties experienced by students. This was exemplified generally through the qualitative interview with regard to financial problems, the educational system and the socio-cultural milieu. Church (1982) lends credence to the above by identifying monetary problems, language difficulties, adjustment to a new educational system, and social adjustment to the new milieu as potential difficulties encountered by international students.

Consistent with reports from both quantitative and qualitative interview which indicated that female students experience more stress than males, Nolen-Hoeksema (1990) and Weissman et al., (1996) lend their support reflected in their studies that, across many nations, cultures, and ethnicities, women are about twice as likely as men to develop depression which is linked to anxiety. Nolen-Hoeksema (1990) reported further that, women face a number of chronic burdens in everyday life as a result of their social status and roles relative to men and these strains could contribute to their higher rates of depressive anxiety.

Across all continents, time pressure, anxiety and future academic prospects showed statistically significant differences for graduates and undergraduate. The qualitative element supports the differences in experiences of stress between graduates and undergraduates with graduates showing higher levels of stress than undergraduates. The foregoing is supported by research that, graduate students often experience inter-role conflict between their personal and academic roles. These conflicts often occur in the physically and psychologically demanding environment of higher

education (Neumann et.al, 1990). If graduate students cannot cope with stress that results from inter-role conflict, then physical and psychological health problems can occur. Physical health problems associated with stress include headaches (Deckro et al, 2002). Hence it may be imperative to pay attention to common psychological health problems described as burnout that involves "exhaustion of physical or emotional strength or motivation usually as a result of prolonged stress or frustration. These symptoms pose a particular challenge in higher education because research indicates burnout can lead to attrition among graduate students (Christie et.al, 2004).

The overall quantitative findings indicated that, gender is the most significant predictor of non-UK student's sources of stress with females experiencing more stress than their male counterparts. This confirms the results generally reported by Nolen-Hoeksema (1990) linked to the number of chronic burdens faced by women in everyday life as a result of their social status and roles relative to men. Considering the overall results, it can be stated that though, marginal differences in stress experiences occurred among the continents, between graduates and undergraduates and between males and females, students of different cultures tend to evaluate their study abroad experiences as stressful which was mentioned by Mallinckrodt et al, (1992).

With regard to utilizing different tactics to deal with stress, the overall quantitative findings suggest significant differences in Task Coping (TC), Social Diversion (SD), Avoidance Coping (AC) and Distraction Coping (DC) among non-UK students. However, European students tend to use more adaptive coping strategies than Asian and African students. The qualitative findings provided support for the quantitative results as ; extra effort, course of action, set priorities (task coping), anxiety, self blame, upsetting situations (emotional coping), phone or visit a friend, see movies, sleep, take snack, shopping, procrastination and partying (avoidance coping). In line with the study conducted by Oleckno et.al, (1990), Caucasians had higher but not statistically significant scores on reported stress management activities than Caucasians. The findings may be consistent with the present study if Africa students identify themselves as blacks, Asian students as clean skin and non-UK European students as Caucasians.

The quantitative results revealed that, whilst women generally appear to use emotional coping styles, men more or less engage in problem-solving method which corroborates earlier findings as cited by Arthur (2003). This does not mean, as Menaghan and colleagues (Menaghan, 1982, 1983; Menaghan et.al, 1984) point out, that women use less adaptive forms of coping. Instead, it could underscore the value of interpersonal relationships experienced by women and their preference for the expression of personal feelings in relationships (Cook, 1990). Interviewees' responses lend support to task coping in the light of assertiveness, which has been considered desirable for mental health and has been reported as critical for self-esteem, reduced anxiety and enhanced feelings of personal power or internal control (Alberti, 1977; Williams et al, 1985). It appears therefore that, students in my sample have a demonstrable level of coping whilst studying abroad and which could mean that they are not completely indefensible within an environment where their previously learned coping strategies may not be appropriate. It is possible that, non-UK students use behaviour modification strategies which require learning new experiences in their new environment.

There was however a significant level of difference regarding international students from collectivist societies where interpersonal harmony and passivity are encouraged and highly valued among members as opposed to individualist (Europe students). The collectivist (Africa and Asia students) cultures with racial and ethnic differences in terms of use of counselling centres and other sources of support on campus were inadequate. Thus European students use the university counselling centres more often than African and Asian students.

With regard to utilizing informal sources of support, Kenny et.al, (1996) found that ethnically diverse college students relied on family to a greater degree than did European Americans, who relied more on peers which lends support to the results in this study. It has been suggested that coping strategies that are in line with this worldview may serve as a buffer against anxiety, depression, hostility, interpersonal sensitivity, and somatisation (Ferraro et.al, 1994). The foregoing confirms Yeh et.al, (2000) assertion that, strong familial and social network ties are culturally mandated and contribute to interdependent or relational coping strategies.

The study was not devoid of limitations in the sense that a convenience sample from the University of Manchester (UK) was used and consisted of volunteers who were international students whose responses were self-reported. Therefore the conclusions can only be generalized to the population of the students in the selected university and may not typify other populations in other universities.

The measurement of perceived stress was restricted to the information on the Perceived Stress Scale (PSS); the hassle scale was adapted from the inventory of college students recent life experiences (ICSRLE) and the measurement of coping strategy derived from coping inventory for stressful situations (CISS). It is possible that the measures could not adequately unearth the participants' stressful experiences and perhaps other

scales could have been better. Students referred for being stressed and the views of lecturers and university staff could not be included because of time constraint to get them for interviewing. The study was a relatively smaller survey with a few elements of students' characteristics. A larger survey would allow further breakdown of student responses by different elements of student character (e.g. age, prior academic and work experience and length of time in host culture).

The Hawthorne effect was another potential limitation of the study. Even though, subjects' responses were guaranteed to be confidential, they knew that they were participating in a study. Furthermore a number of respondents who participated in the survey were purposely selected for the interview. This may bias their responses because they might have provided socially desirable responses to the survey.

The researcher was unable to assess whether any of the participants studied or lived in the UK before and for how long. If a number of them have lived and studied in the host country for some time, it is possible that, they are acquainted with the culture and campus norms which might have influenced their responses.

In this study, the purpose was to basically seek understanding regarding perception and sources of stress and coping mechanisms utilised by international students studying in the United Kingdom. Though the results provided us with some sources of stress and identified a number of coping styles that overseas students utilise, there could be substantial improvements in the quality of life experienced by international students studying in the UK if non-UK students developed friendships or social networks with their colleagues from other countries as well as with UK students, perhaps by drawing on the resources of the Students Services Centre. Participating in international friendship programs can also provide a sense of belonging, which helps with adjustment and create and support multicultural identity. There are counselling services available on campus and interaction with a counsellor is completely confidential. Students who are experiencing stress should draw on these services.

In addition to the measures that the university already takes to support non-UK students, university support staff should provide stress management programmes or seminars and training for students to enable them manage their time and everyday life demands. The content of such programmes could be informed by an online survey of international students. It may be appropriate for new students to complete an online "needs assessment form" to ascertain their potential problems so as to deal with them as quickly as possible, particularly for female students whose stress levels were significantly higher than males. This should help them to learn how to manage their stress at a much earlier stage. It would be helpful for international students if Home Office officials were sensitive to stress levels that they may be experiencing when responding to routine requests e.g. for visa extensions.

Further research could be carried out that would shed further light on stress levels and coping strategies experienced by overseas students. In particular it is possible that stress levels and coping strategies will vary during the academic year and therefore further research could explore the impact on these areas of particular events, e.g. examinations, arriving in the UK for the first time. It would be interesting to carry out a study with a sample of students who do not report high stress levels to tease out the factors that enable such students to manage well at university. Such factors might relate to personality types (e.g. assertiveness, locus of control and self-efficacy), their standard of English or their subject of study.

## Conclusion

Despite the fact that, overall, the results did not yield a large number of significant findings, the general impression indicated that, international students experience a certain degree of stress. Therefore, success in overcoming all the potential difficulties that overseas students may encounter implies that they need to have good degrees of resilience. Hence, the need to make realistic plans and take steps to carry them out, a positive view of one's confidence in personal strengths and abilities, skills in communication and problem solving and the capacity to manage strong feelings and impulses (APA, 2003) may programme overseas students to appropriately manage their stress whilst studying abroad.

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