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Sources and Effects of Stress among University Students

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Abstract:

The study investigated major sources and effects of stress among Kyambogo University students. The study also established ways through which students managed stress. Stratified random sampling was used to select 140 students from the Faculty of Science according to their departments and gender. A descriptive survey design was employed and data were collected using a questionnaire and focus group discussions. Data were analysed descriptively using frequencies and percentages. A Chi-square test was employed to determine whether there was any significant difference in the levels of stress between genders ($p \leq 0.05$). Results show that finances (132, 94%) and examinations (127, 91%) were the major sources of stress. Inability to concentrate (121, 86%), irritability (112, 80%) and loss of weight (99, 71%) were common effects of stress. Results from the Chi-square test show that female and male students were not equally stressed by relationships and peer pressure. Also, apart from finance (Male 69%: Female 63%) and Heavy workload and fatigue (Male 58%: Female 53%), the rest of the components females exhibited higher stress than males. This suggests that female students were more stressed than male students. Students mostly used sharing their frustrations with friends (127, 91%) and acceptance (117, 84%) as coping strategies. Nevertheless, in order to effectively cope with stress, it is recommended that students should engage in regular Physical Activity (PA).

Keywords: stress, effects, physical activity, university students and coping strategies

1. Introduction

Stress is regarded as a body and mind's response to any demand that disrupts the normal balance (Nordquist, 2013). The stressors may be situations or circumstances one faces. The magnitude of stress depends on an individual's capability to deal with the stressors. The intensity and chronic nature of stress is linked to mental and physical health problems such as anxiety, depression, insomnia, nervous breakdown and heart disease (Seyedfatemi et al., 2007 and Sohail, 2013). Studies show that academic workload and social life are major stressors among tertiary students (Brougham et al., 2009; Seyedfatemi et al., 2007 and Sohail, 2013).

Student stress is related to new and complex methods of acquiring knowledge, skills, finances and time demanding courses as well as poor performance in examinations (Sohail, 2013). Socially, Brougham et al. (2009) noted that the transition from high school to college life is stressful since it involves a change from dependent to independent life. Similarly, Laurence et al. (2009) contend that although university life can be exciting, adjusting to this type of life that separates learners from their families, and the necessity to form new relationships can be stressful.

Whilst optimal levels of stress characterized by high motivation and mental alertness is useful, failure to handle stressors effectively can negatively lead to poor academic performance. On the other hand, if stressors are identified and effective coping strategies are adopted, then the effects of stress may be controlled (Smith and Segal, 2011). This study conceptualized that regular engagement in Physical Activity (PA) can be a coping strategy that reduce the negative effects of stress. Laurance et al. (2009) noted that PA is an inexpensive, effective, efficient and healthy stress coping strategy. PA influences physiological, emotional, cognitive and physical functions of the human body. Physiologically, regular PA makes the body to work harder than normal and leads to muscle improvements and adaptation. Scott (2011) asserts that the more one engages in PA the less he/she is affected by stress, since regular PA makes the body produce more energy and optimism that help to calm the mind.

PA helps in the production of endomorphins that boost the body. It redirects the mind from the distracters of daily worries and enables the body to release tension (Scott, 2011). Mayo Clinic (2013) confirms that exercise significantly reduces anxiety associated with prolonged stress more effectively than tranquilizers. Also, PA helps in toning the body and maintaining a healthy weight which eventually builds self-confidence and self-esteem (Laurance et al., 2009). PA improves cognitive function by increasing delivery of glucose and oxygen to the brain. In addition, PA ensures faster removal of waste products from

overworking the brain (Mayo Clinic, 2013). Regular PA improves immunity as well as normalizes the heart rate, blood pressure and muscle tension (Mayo 2013). According to Anxiety and Depression Association of America [ADAA] (2013) and Mayo Clinic (2013), virtually all forms of aerobic activities such as walking, running, together with flexibility and strengthening exercises relieve stress. Since studies show that university students are prone to stress which leads to psychological and physiological consequences, this study aimed at investigating major sources and effects of stress among Kyambogo University students and establishing strategies used to manage stress. In order to achieve these aims the study was guided by the following questions: 1) What are the sources and effects of stress among Kyambogo University students?; and 2) What coping strategies are used by Kyambogo University students to manage stress?

2. Materials and Methods

A descriptive survey was conducted among Kyambogo University students, Uganda, during the 2010/2011 academic year. The lottery method was employed to select one faculty out of six faculties from Kyambogo University.

2.1. Participants

Stratified random sampling method (Särndal, et al. 2003) was used to select ten male and ten female students from each of the seven departments, making a total of 140 students. All sampled students consented to participate in the study and anonymity of all participants was observed throughout the study.

2.2. Measures

Data collection instruments included a semi structured self-reported questionnaire and a Focus Group Discussion (FGD) guide. The semi-structured questionnaire consisted of five sections: demography, type of stressors, effects of stress, coping strategies and suggestions for managing stress. To assess the content validity of the questionnaire and the FGD guide, two experts assessed items for appropriateness and clarity of the questions. A content validity index (CVI) of 0.8 was obtained which is acceptable according to Oso and Onen (2005). The reliability of both the questionnaire and FGD guide was established by pre-testing the instruments using ten university students who did not participate in the study. Based on the feedback from the two experts and the pre-testing of the instruments, minor adjustments were made on both the questionnaire and the FGD guide (Field, 2005). The questionnaires were then distributed by the first author to 140 students and the return rate was 100%. Three focus group discussions were used to probe students' detailed responses on the study objectives. Each discussion group consisted of seven participants. A total of 21 students (9 males and 12 females) volunteered to participate in the discussions. Data from FGD was collected until a theoretical saturation point was reached.

2.3. Analysis

Data from the questionnaire were analyzed using ranking, frequencies and percentages as well as a Chi-square test ($p < 0.05$) to compare gender differences in relation to stressors. Data from FGD were analyzed thematically.

3. Results

Data were collected from 140 students where 50% were male and 50% female. The majority (93, 66%) age ranged between 23 and 25 (Mean $24 \pm SD 1$) and had joined the university after high school. Also, the majority (102, 73%) of students were classified as private because they did not get bursaries from the state but paid their tuition and upkeep from private sources. The students who participated in the study were drawn from seven departments under the Faculty of Science. Results on demography and department distribution is summarised in Table 1.

	Residence												Total				
	University Hall				Private Hostel				$\leq 2\text{km from KYU}$					More than 2km from KYU			
Year of study	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Department																	
Sports Science	1	1	2	-	-	2	1	-	-	-	-	-	3	3	5	-	20
Biology	-	1	1	-	2	4	5	-	-	-	-	-	2	2	3	-	20
Chemistry	1	-	-	1	2	7	4	1	1	-	-	-	-	2	1	-	20
Computer science	-	-	2	-	3	2	6	-	-	1	1	-	3	1	1	-	20
Food processing	-	1	1	1	1	1	-	3	2	-	-	-	4	3	2	1	20
Mathematics	1	-	1	-	1	4	8	-	-	-	1	-	1	1	2	-	20
Physics	1	-	-	-	2	9	4	-	-	1	-	-	2	-	1	-	20

Table 1: Demographic data by department, residence and year of study

From Table 1, out of 140 students only (16, 11%) resided, on campus, in University halls and the majority (124, 89%) of them resided off campus. Of these (72, 51%) lived in private hostels near the campus and walked to and from the university. Students (43, 32%) who resided more than two kilometers from the university had the potential of being stressed because they spent money on transport to and from the university with a high chances of being delayed in traffic jams. The findings from the questionnaire are presented as: 1) type of stressors; 2) effects of stress; 3) strategies of managing stress; and 4) suggestions on relieving stress. The results from the FGD are presented in themes: 1) insufficient finances; 2) studying for many hours; 3) forfeiting social activities; and 4) exhaustion after hard work and they complement the findings from the questionnaire. The results from the questionnaire and the FGD are presented concurrently in the following sections.

3.1. Type of stressors

All students who participated in the study indicated that they experienced stress. The stressors that affected more than 50 percent of the students were considered as major stressors. The results are provided in Table 2.

	Component	Frequency	Percentage (%)
Stressors	Finances	132	94
	Preparation for examinations	127	90
	Fatigue and heavy workload	111	79
	Academic performance	102	72
	Relationships	99	71
	Peer pressure	98	70
	Loss of loved ones	91	65
	Poor time management	84	60
Effects of stress	Inability to concentrate	127	91
	Irritability (easily angered)	112	80
	Loss of weight	99	71
	Headache	96	69
	Sleep disorder	84	60
	Loss of appetite	82	59
	Fast heartbeat	77	55
Coping strategies	Talk to friends	128	91
	Accept and learn to live with the stressor	117	84
	Rest	98	70
	Participate in sports activities	77	55
	Watch television, video or internet	64	46
	Visit pubs and bars	60	43
	Listen to radio	47	34
	Go to church	18	13
Recommendations	Take a bath	14	10
	Reduce tuition fees	132	94
	Lower pass mark	127	91
	Improve on sanitation	121	86
	Provide or subsidise meals	112	80
	Provide counseling sessions	107	76
	Reduce workload	98	70
Sensitize students on identifying and handling stress	81	58	

Table 2: Frequencies and percentages of major stressors, effects, how stressors are relieved and recommendations

Finances (132, 94%) ranked first among stressors. This finding was reiterated during the FGD where private students confirmed that raising sufficient money for tuition, accommodation, transport and scholastic materials stressed them. One student said: *"I find myself stressed since it is almost impossible to have sufficient money to last for even half way the semester; food and the scholastic materials demanded for my course are expensive"*. Also, (127, 91%) of students admitted that preparing for examinations was stressful. During the discussions, students indicated that the fear of failing examinations kept them studying for long hours. It was evident when a male student commented: *"Examination period is very challenging, stressful and boring; I have to spend long hours in the night studying and forfeit social activities in evenings"*. Another student commented: *"I have to study hard as examinations draw near because a supplementary examination may affect my career opportunity and the process of applying for it is psychologically torturing, time consuming and has cost implications"*. Fatigue and heavy workloads were ranked third (111, 79%) among the stressors. Students reported that their courses demanded a lot of study time and included numerous tasks that caused mental fatigue. Some students attributed fatigue to heavy workloads and part time jobs they did outside lecture hours. One private male student said: *"I work after lectures from 6.00pm till late yet I must attend early morning lectures;*

sometimes when I am in class I feel so exhausted and my whole body aches but since I need money for tuition and upkeep. I have to retain the job”.

The findings further showed that (102, 73%) students were anxious about their academic performance. Students claimed that displaying examination results on the notice boards caused anxiety since they feared to be identified with failures. In addition, the study revealed that students were stressed by social factors that included: relationships (99, 71%), peer pressure (98, 70%) and loss of loved ones (91, 65%). Students confessed that the desire to socially fit in the university environment was stressful as it involved relating with different people such as boyfriends, or girlfriends, roommates, lecturers and parents or guardians. Poor time management was identified as a stressor by (84, 60%) students. Students in the FGD revealed that they failed to manage time because of academic, social and economic factors. There were other stressors that students highlighted during focus group discussions. These include inadequate lecture rooms and furniture, university policies like the registration process, entertainment and outings; discrimination, loneliness, inadequate medical services and abortions.

To determine whether there were statistically significant differences in stressors between genders, a Chi-square test was computed.

	Stressor	Chi-square value	Number	Males %	Females %
1	Finances	0.272	132	69	63
2	Examinations	0.197	127	61	66
3	Heavy workload and fatigue	0.225	111	58	53
4	Academic performance	0.157	102	49	53
5	Relationships	8.497	99	35	64
6	Peer pressure	6.897	98	42	56
7	Loss of loved ones	0.274	91	43	48
8	Time management	0.429	84	39	45

Table 3: Chi-square values, ranking numbers and percentages of stressors for males and females

The results of chi-square show no significant differences between male and female students regarding stress caused by finances X^2 (1, N = 132) = 0.27, $p > 0.05$, preparation for examinations X^2 (1, N = 127) = 0.20, $p > 0.05$, fatigue and heavy workload X^2 (1, N = 111) = 0.23, $p > 0.05$, and academic performance and time management X^2 (1, N = 102) = 0.16, $p > 0.05$. In these cases, all the calculated values were less than the critical values of 5.991 from the table (Table 3). On the other hand, the calculated values were greater than the critical values for male and female in relation to relationships X^2 (1, N = 99) = 8.497, $p > 0.05$ and peer pressure X^2 (1, N = 98) = 6.897, $p > 0.05$. Apart from finances (Male 69%: Female 63%), heavy workloads and fatigue (Male 58%: Female 53%), the rest of the components females exhibited higher stress than males (Table 3).

3.2. Effects of stress

Table 2 shows that stress affects students emotionally leading them to lose concentration (127, 91%) and become irritable (112, 80%). In addition, stress affects students physically by causing them to lose weight (99, 71%); develop headaches (96, 69%); sleep disorders (84, 60%); and increased heartbeat (77, 55%). During the discussions, students also pointed out that stress lead them to poor decision making, stomach disorders, general body weakness, isolation and failure to attend lectures.

3.3. Strategies of managing stress

Table 2 shows how students cope with stress namely; talking to friends to share their frustrations (128, 91%), acceptance (117, 84%) and resting (98, 70%). The findings also indicate that (64, 46%) of the students watched television, video and used internet in order to cope with stress. Through the FGD students stated other coping strategies like: avoiding stressful tasks, positive thinking, visiting quiet places, and visiting counselors, going to church and crying.

Most of the coping strategies listed in Table 2 are passive in nature. These finding show that students use more emotion-focused strategies than problem-focused strategies. Nevertheless, (77, 55%) students reported that they participated in sports activities when they were stressed. Students also listed sports activities they usually engaged in and these were playing: pool, chess, football, basketball, volleyball and tennis. These activities, however, were not regular and their effect in reducing stress as experienced by students in this study was minimal.

3.4 Suggestions on relieving stress

Data from the questionnaire show that reducing fees had the highest ranking to percentage (132:94), while sensitizing students on identifying and handling stress had the least ranking to percentage (81:58) (Table 2). Similarly, FGD made suggestions regarding the reduction of fees, lowering the pass mark, improving sanitation, providing or subsidizing cost of meals, providing counselling services, reducing workloads and sensitizing students on identifying and handling stress.

4. Discussion

The study aimed at investigating major sources and effects of stress among Kyambogo University students and to establish strategies of managing stress. The findings show that finance, academic-related factors such as examinations and heavy workloads were most frequently reported stressors. Also, most students stated that when they are stressed they were unable to concentrate and they got irritable. Most students relieved stress through passive behaviours like sharing their frustrations with friends, acceptance of the stressors and resting. In addition, the study advocated for the use PA as an effective coping strategy.

The high ranking of the finances related stress (Table 2) may suggest that most students were either from poor backgrounds or had poor financial management habits or both. This is not surprising because a few studies have shown that financial pressure and examinations often stress tertiary students. For example, Seyedfatemi et al. (2007) studied stressors and coping strategies among 366 Iranian nursing students and found inadequate finances was a major stressor. Similarly, Whittle (2007) attributed financial-related stress among university students to inadequate funds for meals, tuition, stationery and accommodation. From our study 90% of the students were stressed by examinations and this finding is in agreement with Sohail (2013) who conducted a study on stress and academic performance among 120 students in Allama Iqbal Medical College, Lahore. Sohail contends that all students were stressed with academic examinations due to extensive memorization in a short period. On the other hand, Hussein and Hussein (2006) attributed examination-related stress to students' poor study habits and last minute preparations.

The findings that fatigue and heavy workloads stressed students are consistent with the study of Seyedfatemi et al. (2007) and Sohail (2013). These authors show that long hours devoted to study, use of highly technical equipment and multiple assignments limit free time and cause stress. Similarly, Whittle (2007) associated fatigue and heavy workloads among students to lots of financial investments they make so as to reach their goals. Other studies identified social relationships as a significant stressor among students in tertiary institutions (Dessie et al., 2013; Imeokparia and Ediagbonya, 2013 and Sohail, 2013). Furthermore, Sohail (2013) observed that staying in hostels, parental and friends' expectations are significant sources of stress.

Academic performance caused stress to 72% of students, especially, when they perform poorly (Table 2). This finding is in agreement with Seyedfatemi et al. (2007) who suggest that high stress levels could lead to poor academic performance. Brougham et al. (2009) associated stress with cognitive deficits that are exhibited by attention and concentration difficulties of college students. Also, Imeokparai and Ediagbonya (2013) examined stress management among business education students in Ambrose Alli University, Benin and concluded that different stressors affect the overall academic performance of the students. Similarly, Dessie et al. (2013) conducted a study on mental distress among 442 Adama University students in Ethiopia and found that students get irritable as a result of frustration caused by academic challenges, social problems and high expectations from parents.

The effects of stress from this study show that students developed health problems like inability to concentrate, irritability, loss of weight, headache, sleep disorders, loss of appetite and increased heartbeat. These findings concur with studies of Hancock and Szalma (2008) and Brougham et al. (2009) who contend that stress cause health problems. Laurence et al. (2009) and The American Institute of Stress [AIS] (2013) explained that when a person is stressed there is a General Adaptation Syndrome (GAS) where the body produces adrenaline that causes increased heartbeat and affects the quality of sleep. According to AIS (2013) almost 90% of all health problems are related to stress. Therefore, effective coping strategies need to be devised in order to prevent or reduce the negative effects of stress among university students.

From the results it is clear that students from Kyambogo University developed coping strategies like: talking to friends, resting, going to church and participating in sports activities (Table 2). This is not surprising because Hussein and Hussein (2006) explained that coping is based on how a person appraises the situation. The level of appraisal determines the level of stress and coping strategies that a person undertakes. Brougham et al. (2009) divided coping strategies into two categories. Firstly, the emotion-focused strategies that involve expressing emotion and altering expectations and these are associated with poor health. Secondly, the problem-focused strategies that employ behavioural activities and are associated with better health (Brougham et al. 2009 and Walker, 2010).

One of the problem-focused coping strategies is PA and Stephen and Schaben (2002) confirmed that students who participated in sports or PA experienced less stress compared to those who did not. Stephen and Schaben (2002) and ADAA (2013) further noted that aerobic activities such as jogging, walking, bike riding for at least 30 minutes and done at least three times a week reduce and prevent stress. Imeokparia and Ediagbonya (2013) also recommended that 15-20 minutes of moderate to vigorous exercise daily is an effective stress reduction strategy. This is because PA helps to take the mind from the problems, decreases production of stress hormones, increases "feel good" such as cortisol hormones and is linked to resilience to stress (Scott, 2011). ADAA (2013) contends that exercise maintains fitness, reduces fatigue, improves alertness and concentration and enhances overall cognitive function. Furthermore, exercise promotes norepinephrine hormone which is associated with improved cognitive function which ultimately leads to better learning. PA raises heart rate which reverses the damage to the brain caused by stressors especially the hippocampus responsible for memory.

Results from the Chi-square test show that females and males students were not equally stressed by relationships and peer pressure (Table 3). This is not surprising because both males and females have different roles in society. This is in line with the findings of Cohen and Janicki-Deverts (2012) who studied stress among male and female for three different years and they found that in all the three years female were more stressed than men. Also, there were sicknesses like headaches that were reported by students and other ailments that may have been associated with stress. This again is in agreement with Lazarus and Folkman (1984); Seyedfatemi et al. (2007) and Sohail (2013) who contend that stressful life may eventually lead to sickness especially when the human adaptive capacity is exceeded.

5. Conclusion and Recommendations

The study findings revealed that Kyambogo University students experienced a variety of academic and social stressors which affect their physical, mental and emotional health. The study advocates for the incorporation PA into students' life. Students need to learn to manage their time well so as to create time for leisure activities. The university needs to sensitize and motivate students to be actively engaged in PA, equip students with time management skills, provide more facilities and equipment like gymnasiums, swimming pools and sport fields. In addition, appropriate and varied PA programmes need to be provided by professional fitness trainers and instructors.

6. Limitations

This study involved a small sample of students, drawn from only one of the six faculties from Kyambogo University. This limits generalization of the findings to the entire Kyambogo University student population and to other universities. However, the study provides insight into the prevalence of stress among University students as well as suggests coping strategies.

7. References

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