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**ACADEMIC STRESS: ITS CAUSES AND RESULTS AT A UGANDAN UNIVERSITY**

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**Abstract**

The study examined academic stress, study habits and academic performance of 196 (113 males and 83 females) undergraduates of Mbarara University of Science and Technology in Uganda using a cross-sectional survey research design. Findings showed that daily academic hassles were found to be the most stressful ( $M = 3.11$ ;  $SD = 0.96$ ) while personal problems were reported as the least stressful ( $M = 2.27$ ;  $SD = 0.86$ ). First year students experienced greater academic stress from financial hardships ( $\chi^2 = 10.71$ ;  $p = .03$ ), academic overload/time ( $\chi^2 = 10.23$ ;  $p = .04$ ) and social expectations ( $\chi^2 = 10.79$ ;  $p = .01$ ) than the continuing students. Motivation was the most used study habit ( $M = 6.52$ ;  $SD = 1.18$ ) among the respondent, while studying a chapter was the least common study habit ( $M = 3.86$ ;  $SD = 1.35$ ) among the students. Faculty of Development Studies students had better study habits ( $\chi^2 = 8.75$ ;  $p = .03$ ) than other faculties/institute based on grade performance. The GPA/CGPA 4.40 - 5.00 category had superior study habits ( $\chi^2 = 11.47$ ;  $p = .01$ ) than the other GPA/CGPA categories. Age ( $OR = .88$ ) was a significant predictor of having supplementary exams. Our results highlight the need for strategic interventions focusing on reducing academic stressors and improving the study habits of the undergraduates considering the uniqueness of the different faculties and year of study for improved academic performance.

*Key words:* Uganda Tertiary Education, Uganda Education, Uganda Higher Education, Academic Stress, Study Habits, Academic Performance and University Students

**Introduction**

For many undergraduate students, university life is a major transition in their lives since they are accorded the chance to decide what to do without the undue influence of their parents. The students make various decisions regarding all aspects of their lives such as academics, social life, and leisure activities (Baker, 2003). However, amidst the new found freedom students have to struggle to meet the expectations of their parents which include expectations related to their academic performance (Smith & Renk, 2007). In addition, society believes

that graduating from a high-ranking university is a “passport” to a good job, high salaries, and high social status (Ang & Huan, 2006). As a result, the students are indirectly subjected to a variety of stressors mainly linked to academic success (Sreeramareddy, Shankar, Binu, Mukhopadhyay, & Menezes, 2007).

The academic stress faced by most students is attributed to poor study habits, such as poor time management (Macan, Shahani, Dipboye, & Phillips, 1990), studying for exams (Baldwin, Wilkinson, & Barkley, 2000), and coursework (Robotham, 2008), which may eventually lead to poor academic performance. In order to overcome the pressure from academic stress the students have to employ suitable coping strategies like in any other stressful situation (Smith & Renk, 2007). There are various coping strategies used by students when experiencing academic stress. Some resort to avoidant coping; alcohol/drug abuse, denial and behavioral disengagement; while others cope actively through acceptance, planning, and positive reframing and taking the necessary steps to overcome the academic stress (Sreeramareddy et al., 2007).

Academic performance is mainly a function of students’ study habits referring to the student’s way of study whether systematic, efficient or inefficient (Abid, 2006). The study habits that influence the academic performance of a student include: time management, setting realistic academic targets, setting rewards on completion of a task, revision, organization of materials, and notes-taking during lectures (Fontana, 1995; Good & Brophy, 1986). Hence, study habits are coping strategies used by students to overcome academic stress so that they can meet the demands imposed on them by the academic environment. This is reaffirmed by studies (Struthers, Perry & Menec, 2000; Aluja & Blanch, 2004) which show that study habits positively correlate with academic performance.

The academic performance of university students currently is explained in terms of success or failure of course units, number of courses failed or passed (Goldfinch & Hughes, 2007), and the quality of the grades obtained in terms of the Grade Point Average (GPA) or Cumulative Grade Point Average (CGPA) (Bernold, Spurlin, & Anson, 2007). In some Ugandan universities some students are experiencing poor academic performance for example in a study conducted by Kyoshaba (2009) at Uganda Christian University, it was noted that while other students perform well, a substantial number of students performed poorly. Mbarara University of Science and Technology (MUST) is no exception to high failure rates. Over the past five years, many supplementary examinations were registered per semester (Atibuni, 2012). This clearly shows the levels of academic performance of the undergraduates at that time.

However, there is limited knowledge about the MUST students’ academic-related stress levels and the study habits that may partly explain the observed academic performance of the students. The main aim of this study, therefore, was to determine the effect of study habits and academic stress on the academic performance of undergraduate students of Mbarara University of Science and Technology during their adjustment to university life.

### **Academic Stress of University Students**

Baker (2003) noted that the undergraduates are faced with many new interpersonal, social, and academic demands during the transition from secondary school life to university, which is stressful for many of them. The immediate challenges that students face are the decisions they have to make about the presented career paths in addition to developing and negotiating new relationships, getting novel ideas that challenge their past-learned views, and moving away from home (Lumley & Provenzano, 2003). Baker further noted that adjustment during the transition period is linked to the way the undergraduate copes with that stress which affects academic motivation and performance. DeBerard, Spielmans, and Julka (2004) emphasize that the potential buffer for stress during the transition into university life is social

support from friends, peers, and religious peers that provide insulation from the harmful impact of stress.

In the academic environment, high expectations, information overload, academic pressure, unrealistic ambitions, limited opportunities, and high competitiveness are some of the common sources of stress that create tension, fear, and anxiety in students (Sinha, Sharma, & Nepal, 2001). In a study by Dahlin, Joneborg, and Runeson (2005), undergraduate students indicated experiencing the highest degree of pressure from studies. Misra, Mckean, West, and Russo (2000) pointed out that students have found the requirement to meet assessment deadlines as a major source of stress. Students report experiencing academic stress with the greatest sources of academic stress coming from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time (Kohn & Frazer, 1986).

Course load versus time available has also been cited to be a stressful factor in the academic environment (Zeidner, 1992). Studies reveal that students perceive course load to be high in their first year of study, and that the perception of course load positively correlates with exam stress (Mani, 2010). In their study, Talib and Zai-ur-Rehman (2012, p. 129) found out that majority of the students (53%) claimed that course load is the source of their stress which in turn affected their GPA. Further students report that the prospect of having to sit for examinations is stressful because of the pressure to review all the learned material within a given period of time (Mani, 2010). Mani explains that it is not the examination itself that induces stress but the fact that the possibility of failing or passing the exam can shape the course of one's academic career and professional life.

Besides the course load and exam preparation, there are course demands that may induce academic stress depending on the nature of the course that the student is undertaking (Bernold, Spurlin, & Anson, 2007; Kuhn, Kranz, Koo, Cossio, & Lund, 2005). Research conducted to explore factors that lead to academic related stress of medical students cite academic demands like variable hour shift for clinical rotations, sleep deprivation in addition to the curriculum overload (Kuhn, et al., 2005). Psychology students reported that stress emanating from the supervisory process while in field placement was due to the individual differences between the trainee and the supervisor (Dodds, 1986). Further research by Talib and Zai-ur-Rehman (2012) showed that there was a significant difference in the perceived stress between engineering students and management science students. The engineering students had a higher mean academic stress score than the management science students.

In their study on sources of stress among college students, Ross, Niebling, and Heckert (1999) found that daily hassles related to interpersonal relations were the most often reported source of academic stress among the college students. This can be attributed to personal issues such as the individual differences in values, beliefs, situational intentions, and goal commitments that greatly influence one's perceived stress (Davonport & Lane, 2006). Jou and Fukada (1996) confirmed this as their research findings illustrated a positive correlation between interpersonal problems and other stressors implying that the more interpersonal problems students had, the more stress they were likely to face. Personal factors were recognized as a challenge that influenced their coping mechanisms and eventual levels of stress (Bang, 2009; Zeidner, 1992).

When students do not have adequate personal resources like finances to deal with the stressful event, they may experience heightened distress (Bang, 2009). Research also shows that several students deal with the pressure of finding a part-time job to meet their financial demands and create a bridge to professional life after their studies. In addition to the academic hardships, the students are faced with stressors arising from their part-time jobs (Ross et al., 1999). Stecker (2004) found that nursing students who were more likely to have jobs during their academic training reported higher levels of stress than medicine, pharmacy,

dentistry, and graduate students. Baldwin, Wilkinson, and Bradley (2009) emphasize that student workers experience greater stress during midterm and final examinations periods of the academic year than during any other time. This arises from absenteeism from class due to the demand to be at work. According to Robotham (2008, p. 736), 30% of working students, missed lectures and 20% failed to hand in course work on time due to work commitments. Such an imbalance can be quite stressful and may lead to poor academic performance in the struggle to maintain one's job.

Poor academic performance often generates negative feedback about the students' performance; consequently leading to stress, anxiety, and depression (Ang & Huan, 2006). This is evidenced by the fact that students from low social economic status were found to be more stressed by having to meet parental expectations (Zeidner, 1992). Furthermore, students were more sensitive to remarks from significant others like teachers and parents in their lives (Ang & Huan, 2006). The social expectations that male students should be superior even in academic performance presented a stressful environment for male students (Bang, 2009). In addition to that, students' own academic expectations and performance were found to be associated with higher levels of academic stress (Abouserie, 1994).

The environment in which students live contributes to the levels of academic stress for example the cultural context and demands from their peers. The environmental demands are quite different from one student to another (Zeidner, 1992). Kuh (2000) highlighted the important characteristics of a supportive academic environment as one that provided support to students to succeed academically and socially. Such an environment enables the students to meet the non-academic demands and provides support that enhances the student's relationship with fellow students, faculty staff, and institutional administration. The inability to be able to integrate in the academic and social environment may cause psychological distress to the students (Parker & Jones, 1999).

Ross et al. (1999) emphasized the fact that stress levels varied basing on the year of study. The first year students were more prone to greater stress compared to other years of study. This resulted from the absence of a social support framework and the transitional nature of college life that requires adjustment to the new environment amidst new responsibilities and challenges. At times, the first year students are leaving home for the very first time and therefore need to adjust to the newfound freedom as well as maintain a high level of academic performance (Robotham, 2008). On the other hand, Shaikh et al. (2004, p. 346) found that senior students experienced higher levels of stress that is 95% and 98% for fourth and final year students respectively due to the academic demands like having supervised clinical rotation. Furthermore, that final year students are required to write their research dissertations that exposes them to additional stress.

In addition to stress levels varying across the year of study, Misra, McKean, West, and Russo's (2000) research findings suggest that stress levels vary by gender of the students. Levels of academic related stress differed among male and female students with female students being more prone to more academic stress than their male counterparts (Abouserie, 1994; Bang, 2009; Misra & McKean, 2000; Rayle & Chung, 2008). Females experienced higher levels of academic stress because of negative appraisals of the stressful event and focus on the emotional challenges in the wake of the stressful event. Male students are trained to display strength and machismo in the face of challenges right from their young age (Misra & McKean, 2000). However, female students performed better than the male students and had better GPAs than male students even in case of significant stress (Talib & Zia-ur-Rehman, 2012).

Despite all the sources of stress in the academic environment, the future of the students depends most on high academic performance. It is estimated that 10 to 30 percent of the students experience academic related stress that affects their academic performance

(Sinha, Sharma, & Nepal, 2001, p. 105). Academic stress is documented to have several negative effects not only to the academic performance of the students but also to their well-being. Academic stress is seen to interfere with the students' way of life, cognitive processes, and adaptive behaviors such as class attendance (Lumley & Provenzano, 2003). Studies have shown that there is a positive association between academic stress, depression, and physical illness, which these associations decrease with the provision of informational support (Fisher, 1994).

Other forms of coping mechanisms used by students include sports, music, hanging out with friends, sleeping, or going into isolation (Shaikh, et al., 2004). Students with higher problem-solving appraisals reported better psychosocial adjustment to university life, had lower levels of stress while studying, and better academic performance than their counterparts with lower problem solving appraisals (Baker, 2003). More specifically, male students use more active coping, positive reframing, planning, and accepting the stressor where as female students use more emotion focused strategies like venting, self-blame, and behavioral disengagement (Davonport & Lane, 2006). The choice of coping mechanisms used is accounted for by the difference in the gender role expectations and sex role stereotypes where females are taught to focus on emotions and seek social support whereas males are trained to take outward action to deal with the stressful situation (Bang, 2009).

Many college students may find the academic experience very stressful, attributing it to various poor study habits such as poor time management that may include not allocating time properly or last minute cramming for exams. This is frequently discussed as a source of stress and poor academic performance (Macan, et al., 1990). In addition, very often students are urged to start working on large tasks well before due dates. The large tasks are broken down into small ones, which are achievable on a regular schedule. Students who regularly ignore these techniques find themselves in great distress before exams (Brown, 1991). This results in the students having increased stress due to pressure and as a result students engage in emotional and cognitive reactions to stressors more frequently (Misra & Mckean, 2000). Generally, students appreciate the fact that examination grades are the most important aspect of their school life. However, the process of preparing for examinations was reported to be the most stressful event of their school life (Ang & Huan, 2006; Ang, et al., 2009; Dobson, 1980).

### **Study Habits of University Students**

Study habits are strategies and methods of purposeful learning, usually centered on reading and writing. Effective study skills are essential for students to acquire good grades in school, and are useful in general to improve learning throughout one's life, in support of career and other interests (Aluja & Blanch, 2004; Elliot, Godshall, Shrout, & Witty, 1990). Study habits include skills that enable a learner to systematically plan, access, record, organize, encode, and use information on their own in order to achieve a certain goal (Dodge, 1994).

Time management, setting realist academic targets, setting rewards for completion of a task, revision, note taking, and organization of materials are critical study habits that have an impact on a learner's academic performance (Fontana, 1995; Good & Brophy, 1986). Nagaraju (2004) emphasizes that the level of motivation and attitude towards test taking significantly contribute to the quality of one's study habits and, in turn, their academic performance. Life at the university involves juggling many things like reading books and chapters, meeting paper/coursework deadlines, and participating in the usual university extracurricular activities making the students feel like there is not enough time to complete all their work adequately (Macan, et al., 1990).

Time management is seen as a predictor of academic performance since it involves goal setting and prioritization, control of time available, planning, organizing task, and time control. Females were better at time keeping than their male counterparts (Misra & Mckean, 2000). Lammers, Onwuegbuzie, and Slate (2001) found out that only 53% of the undergraduates performed appropriate study habits with notable weakness in time management skills. Research indicates that a person engaging more frequently in time management behaviors will report fewer physical and psychological symptoms of stress (Macan, et al., 1990; Misra & Mckean, 2000).

Students have a general tendency to procrastinate completion of coursework and preparation of exams until the very last moment, a phenomenon that declines as the exams period comes closer (Brinthaupt & Shin, 2001). Poor time management behaviors, like last minute cramming for examinations, are seen to lead to distress and poor academic performance (Blumner & Richards, 1997). Culler and Hollan (1980) in their study of test anxiety, academic performance, and the effect of study-related behavior, noted that study time management was significantly correlated to academic performance. Britton and Tesser (1991) also confirmed that there was a positive relationship between time management skills and grade point average.

Concentration is a key ingredient in various disciplines of study (Talib & Zia-ur-Rehman, 2012). Students in the upper quartile had fewer problems with concentration than those in the lower quartile (Slate, Jones, & Harlan, 1998). Winne and Nesbit (2010) emphasize that one's interest in something influences their concentration on it. Hence, there is need for emphasis on the choice of academic program right from the first year at the university (Goldfinch & Hughes, 2007).

Slate and colleagues (1998) reported motivation, note taking, and time management as the identified strong study habits of their study participants. The motivation indicators included students attending class regularly even when it was not required. In some cases students are intrinsically motivated by the utility in the course (Simons, Dewitte, & Lens, 2004), interest in the course, and their involvement in sharing ideas and decision-making. On the contrary, incentives and prizes for good academic achievement motivate some students externally (Schmakel, 2008). Schmakel's (2008) study findings indicated that the mere recognition for good achievement and grades motivated students to study better in order to maintain or improve the good grades.

Cramming when studying subject matter is one thing and the ability to remember the studied material is another (Hansen & Hansen, 2008). Research results indicate that students prepare for examinations differently. If the students expect that they will be asked to reproduce the subject matter, less effort is put on comprehension than review for an exam in which they expect to have to solve a new problem (Bangert-Drowns, Kulik, Kulik, & Morgan, 1991). Often students tend to use passive strategies when reading such as memorization with little emphasis on understanding main points of the information in order to only reproduce it on the upcoming examination (Gettinger & Seibert, 2002). For longer retention of studied material, Hansen and Hansen (2008) recommend that student use active strategies when reading such as highlighting main points, visualizing the material, and teaching the material to others.

Post secondary learners are expected to possess independent skills that will enable them to accomplish tasks like reading assignments on their own (Slate et al., 1998). When reading a chapter, one is expected to read, learn, and understand the content (Hansen & Hansen, 2008). The authors further emphasize that when reading, scanning through the chapters will help the student identify the important ideas to be highlighted. The majority of undergraduate students did not employ this skill, since most of these students reported that

they often “read” several pages without knowing what was on them (Jiao & Onwuegbuzie, 2001).

Reading for the purpose of identifying the main points may facilitate academic performance, but should not substitute for deep information processing and understanding of subject matter (Blumner & Richards, 1997). It was also revealed that many undergraduates do not have the necessary study habits to achieve good marks in written assignments and examinations resulting in a low CGPA (Durkin & Main, 2002). The authors discovered that 60% of the Business Information Technology students did not have references for the essays despite the prior instructions given. Undergraduate students were found to limit information-seeking techniques, only relying on reading textbooks for completing assignments and reading through lecture notes during examination periods (Kakai, Ikoja–Odongo & Kigongo–Bukenya, 2004). Hansen and Hansen (2008) emphasize the need to analyze textbook reading with lecture notes taken in class for comprehensive understanding of the course materials.

Note taking is a valuable primary way of creating records of subject matter presented in class for later review (Pressley, Yokoi, Meter, Etten, & Freebern, 1997). Lammers et al. (2001) found that there were weaknesses in note taking among undergraduates. Abowd et al. (1998) noted that there was laxity among students in note taking in anticipation of accessing the notes after class. Student may even stop attending classes on discovering the source of lecture notes given by their lecturers (Durkin & Main, 2002). Nonis and Hudson (2010) declared that access to good notes is not enough but should be complemented with better time management to yield a good CGPA. Peverly et al. (2007) found that the quality of notes taken by students significantly and positively related to test performance.

Test taking strategies employed before and during the test are vital predictors of students’ academic performance (Gurung, 2005; Jiao & Onwuegbuzie, 2001). Research findings show that students heavily rely on the review of lecture notes in preparation for a test (Peverly et al., 2007). At times students opt for cramming subject matter when they find the content abstract or have little time to prepare for the test or examination (Brinthaupt & Shin, 2001). As a result, during test preparation students are overwhelmed by high levels of test anxiety where thoughts like “I am never going to get this” derail them from appropriate test preparation strategies (Pressley et al., 1997). On the other hand, research shows that students’ levels of test anxiety were reduced when they were trained in test taking strategies (Beidel, Turner, & Taylor-Ferreira, 1999).

In addition, research findings indicate that students engage in poor study habits such as studying in the presence of distractions. These include studying with the television or music on, studying in a high traffic area such as the kitchen, or spending as much time on study breaks as time spent on studying (Beidel et al., 1999), interruption by friends, daydreaming, or poor concentration (Gettinger & Seibert, 2002). Such poor study habits may even cause them to drop out as documented by Goldfinch and Hughes (2007), who documented that students who withdrew from studies in their first year of study had little confidence in their skill to organize and take notes, time management, and spoken communication at the start of the year.

Furthermore, it was also revealed that many undergraduates do not have the necessary study habits to achieve good grades in written assignments and examinations resulting in a low CGPA (Durkin & Main, 2002). Female students were found to have better study habits (Suneeta, Muktesh, & Snehalata, 2010), especially those with higher academic ability, than their male counterparts (Elliot et al., 1990). In this study, study habits were significantly related to course grades and semester GPA. Aluja and Blanch (2004) pointed out that the better the study habits of a learner the higher the academic achievement. They also further suggested that the effect of study habits on academic performance was mediated by several factors such as personality and aptitudes among others. As a result, helping learners resolve

their physical, emotional, social, and academic difficulties and helping them understand their learning strengths and weaknesses would enable them to improve their study habits (Abid, 2006). However, students with poor study habits are unable to balance their social activities with the study requirements, which may increase their levels of stress (Aluja & Blanch, 2004).

Several studies concluded that study habits account for 15% of the variance in undergraduate students' grades, that is, study habits such as time management, prioritization, test taking, recording, and reviewing notes from classes were related to good test performance (Aluja & Blanch, 2004; Onwuegbuzie, Slate, & Schwartz, 2001). Aluja and Blanch further emphasize that students with good study habits usually show more socially balanced behavior and a higher sense of responsibility and therefore find it easier to alleviate academic stress. Overall, the contribution of study habits in improving academic performance, despite other individual differences was unquestionable and should therefore be regarded as a strong pillar of academic success (Crede & Kuncel, 2008).

### **Academic Performance of University Students**

Academic performance is the single indicator of the quality of time a student spent at school. Over the years, academic performance at different levels of education is measured in terms of examination performance (Kyoshaba 2009). University academic performance is a factor of earlier pre-university training (McKenzie & Schweitzer, 2001). Atibuni (2012) who noted that students undergo rote memorization, drill, and practice in order to pass exams for university entry further emphasizes this. Such efforts may actually pay off because study findings indicate that there is a significant relationship between advanced secondary level results and university academic performance (Kyoshaba, 2009). Furthermore, society has placed undefined demands on students to perform well while in school right from secondary level (Goldstein & Thomas, 1996) to university level (Ang & Huan, 2006). This practice is reinforced by the belief of academia and employers that high school grades are the best predictors of university performance and that university performance is the best indicator for job performance (Kuncel, Crede & Thomas, 2005; Smits, Mellenbergh, & Vorst, 2002).

The academic performance of university students is measured using the grade point average and cumulated grade point average (GPA), which are in consideration of semester course work and final examinations (Plant, Ericsson, Hill, & Asberg, 2005). The student's GPA is considered a summary of his or her learning and is therefore used to make important decisions about him or her (Kuncel, et al., 2005). Hence the emphasis that a good GPA is a gate-pass to better life opportunities for good jobs, better salaries, and higher education (Ang & Huan, 2006).

From the GPA, university degrees are further classified; that is first class honors (4.40-5.00), Second class upper division (3.60-4.39), second-class lower division (2.80-3.59), and a pass degree (2.00-2.79). While the degree class of an individual is seen as summative assessment of academic achievement, a student with an overall average mark of 60% may attain a second-class upper degree, while one with 59.9% may have a second-class lower degree that poses definite inequalities in employment opportunities. As a result, the need to include performance indicators on the university transcripts was considered in the United Kingdom in order to consider the individual differences between students (Smith & Naylor, 2001). The course of study presents evident differences in the academic achievement of university students. The academic performance of students pursuing science-based courses is of a flat distribution where as those pursuing humanities belong mostly to first class and second-class upper honors (Yorke, 2009).

Research findings revealed significant differences regarding personal characteristics such as gender and marital status. Female students were found to perform better than male

students do especially in their first year of study (SurrIDGE, 2008). However, McNabb, Pal, and Sloane (2002) noted that although females perform better on average than their male counterparts, they are significantly less likely to obtain a first class degree. In addition, Mellanby, Martin and O'Doherty (2000) reported that there was a concern that the final degree classifications awarded to women at Oxford University and Cambridge University were on average lower than those awarded to men. Smith and Naylor (2001) documented that married students had a better academic performance than non-married students did.

Earlier research by Astin (1973) suggests that the living environment of students has an impact on academic performance, that is, the experience and support system in the residential area affects academic achievement. This was confirmed by Blimling (1989) that students in on-campus residence halls had a GPA advantage compared to those in off-campus residence halls. However, Snyder (2009) found no statistical significance in the relationship between marital status, residence on/off-campus, and academic performance.

Working students were documented to struggle to maintain a good academic performance (Robotham, 2008). Plant et al. (2005) revealed that the time spent at work was associated with a lower GPA. Furthermore, the majority of the students believed that having a job might interfere with their academic work and in turn their academic performance (Krause, Hartley, James, & McInnis, 2005).

In conclusion, university life requires the students to find a balance in their life while considering timetables, meeting coursework deadlines, self regulated learning, and other social responsibilities (Atibuni, 2012). While striving towards academic success in the face of academic, social, and personal demands, students have to set priorities in light of their resources to avoid stressful situations. The study habits of the students therefore help them maximize the available resources like time, finances, social and familial support, and institutional administration to maneuver their potential stressors. In light of the poor academic performance of MUST education students (Atibuni, 2012), there is an inevitable need to explore the levels of academic stress and the study habits used by the students to overcome stressful events to improve performance, hence the goal of this study.

## Methods

**Sample.** This study was mainly quantitative using cross-sectional survey research design. Only undergraduates from the Faculty of Medicine, Faculty of Science, Faculty of Development Studies, and the Institute of Computer Science who were present on the data collection days took part in this study providing a response rate of 58.16%. The study sample comprised of 196 undergraduates students of which 47 (24.0%) were from the Faculty of Medicine, 29 (14.8%) from the Faculty of Science, 73 (37.2%) from the Faculty of Development Studies, and 47 (24.0%) from the Institute of computer Science. In addition 113 (57.7%) were male and 83 (42.3%) were female. Respondents from first year of study were 64 (32.7%), 60 (30.6%) in their second year of study, 55 (28.1%) in the third year of study, 16 (8.2%) were in fourth year, and only one student was in fifth year of study. Most of the respondents 158 (80.6%) resided outside the university hostels, while 38 (19.4%) were university residents. The majority of the respondents 177 (90.3%) did not have employment; leaving only 9.7% of students employed.

**Procedure.** An introductory letter from the Dean of the Faculty of Science, MUST was obtained to enable the researchers to seek permission from the faculties and institute within the university to carry out the research. After obtaining permission from the faculty/institute deans/director, the researchers then contacted the lecturers who taught compulsory course units attended by all students in the same course and year. The researchers

first explained to the lecturers the purpose of the study and all the relevant details concerning the study. The researchers also answered any concerns related to the study.

During the compulsory lectures, the researchers explained to the students the purpose of the study so as to motivate them to participate in the study. The researchers also emphasized that their responses were going to be handled with confidentiality during the data collection, report writing, and dissemination of findings. The researchers then selected every N<sup>th</sup> student basing on their seating arrangement and obtained the consent of the selected respondents to participate in the study. A self-administered questionnaire containing a brief preamble explaining the purpose of the study was given to the respondents to complete. The researcher was present during the data collection process to rectify any concerns raised by the respondents. Completed questionnaires were collected from the respondent with his/her signed consent form. The researcher rescreened the questionnaires for any unanswered items. Only 196 completed questionnaires were used for analysis.

**Instruments.** Academic stress is a student's interpretation of the present demands, challenges and threats in the academic environment in relation to available personal resources for coping (Siegel, 2008). A 53-item student-life stress scale by Zeidner (1992) was adapted to determine the academic stress levels of the university students. Items described the levels of stress as a result of course requirements and demands, personal problems and impediments, campus environment and administration, financial concerns, academic overload and time pressure, daily academic hassles like academic exams and course instruction, and social milieu. Items are rated on a 6-point Likert-type scale (1= not at all to 6 = to the utmost degree). The range of the scores of the student-life stress scale is 1 to 6 corresponding to the Likert scale. The average score per subscale and the overall scale were determined to establish the level of academic stress of the students. The internal consistency (Cronbach Alpha) of the 53-item student life stress scale was .94 (Zeidner, 1992) and .93 for the current study.

Study habits can also be defined as the student's pattern of behavior, whether systematic or unsystematic, efficient or inefficient, adopted in pursuit of their studies (Abid, 2006). The 50-items Study Habits Inventory scored using a yes-no dichotomy was used to collect data about the study habits of the undergraduate students (College of Redwoods, 1994). The inventory had seven subscales including concentration, remembering, time management, studying a chapter, listening and taking notes, and test taking. All items in the study habits scale had a pre-set answer which was either yes or no depending on whether it is a desirable study habit or not. Therefore, respondents were expected to tick Yes or No depending on whether they agreed or disagreed with the item. For each correctly answered study habit, the respondent scored one and for incorrect responses zero was awarded. The scores for the overall study habits ranged from 0 to 50. The higher the score the better the study habits of the students. For this study, the internal consistency of the study habits scale was Cronbach Alpha .79.

The academic performance of university students is measured using the GPA or CGPA, which are in consideration of semester course work and final examinations (Plant, Ericsson, Hill, & Asberg, 2005). The student's GPA is considered to be a summary of his or her learning and is therefore used to make important decisions about him or her (Kuncel, et al., 2005). Academic performance was measured using the students' current GPA or CGPA and the number of supplementary examinations completed by the students since joining the university. University academic performance is classified based on a 5-point scale as first class honors (4.40-5.00), second class upper division (3.60-4.39), second class lower division (2.80-3.59), and a pass degree (2.00-2.79).

**Data Analysis.** SPSS 16 was used to analyze the study data. Mann-Whitney test and Kruskal Wallis, Pearson correlations and regression tests were used to determine relationships among the study variables.

### Results

The students experienced an overall academic stress to some degree ( $M = 2.77$ ;  $SD = 0.73$ ). Daily academic hassles were the most stressful ( $M = 3.11$ ;  $SD = 0.96$ ), while personal problems ( $M = 2.27$ ;  $SD = 0.86$ ) were reported as the least stressful (see Table 1).

**Table 1. Academic stress levels of university students (N =196)**

Stress Factor	Range	M (SD)
Overall academic stress	1.13-4.94	2.77(.73)
Course requirements	1.00-5.54	2.96(.91)
Personal problems	1.00-5.14	2.27(.86)
Campus environment	1.00-5.00	2.38 (.80)
Academic overload and time	1.13-5.00	2.93 (.88)
Financial concerns/hardships	1.00-5.83	3.02 (1.08)
Daily academic hassles	1.17-5.50	3.11(.96)
Social milieu or expectations	1.00-5.40	2.62 (.91)

The average score ( $M = 33.14$ ;  $SD = 6.61$ ) of the respondents on the study habits scale was well above average basing on the scoring range (0-50) on the study habits scale. Motivation was found to be the most commonly used study habit ( $M = 6.52$ ;  $SD = 1.18$ ) among the respondents, while studying a chapter was found to be the least common study habit ( $M = 3.86$ ;  $SD = 1.35$ ) among the respondents (see Table 2).

**Table 2. Study habits of university students**

Type of Study Habit	Range	M (SD)
Overall study habits	11-45	33.14(6.61)
Concentration	0-7	4.69 (1.64)
Remembering	0-7	4.61(1.55)
Organizing time	0-7	4.30 (1.56)
Studying a chapter	0-7	3.86 (1.35)
Listening and taking notes	1-6	4.28 (1.18)
Taking test	1-7	4.88 (1.48)
Motivation	3-8	6.52 (1.18)

Most of the respondents 107 (54.6%) at the time of the study had a GPA/CGPA range between 3.00-3.59 which is second lower class categorization of a degree, 54 (27.6%) were between 3.60-4.39, 24 (12.2%) were between 2.00-2.90, and 11(5.6%) were between 4.40-5.00. In addition, 26% of the respondents had taken a supplementary examination. Faculty of Medicine had the highest number of supplementary examinations ( $N = 20$ ). The number of supplementary examinations was in the range 1-12.

Students from the Faculty of Development Studies had better overall study habits ( $\chi^2 = 8.75$ ;  $p = .03$ ), scored highest on concentration ( $\chi^2 = 11.26$ ;  $p = .01$ ), and organizing time ( $\chi^2 = 11.06$ ;  $p = .01$ ) compared to students' scores from other academic units. Female students had significantly higher scores at organizing time compared to the male students ( $U = 3717$ ;  $p =$

.01). The Faculty of Science students were better at listening and taking notes compared to students from other academic units ( $\chi^2 = 10.27$ ;  $p = .016$ ).

Students with GPA/CGPA range of 4.40-5.00 had better study habits scores (mean rank = 119.55) than students with other GPA/CGPA ranges ( $\chi^2 = 11.47$ ;  $p = .01$ ). On the contrary, students with GPA/CGPA ranging 3.60-4.39 had better remembering scores compared to students in other GPA/CGPA categories ( $\chi^2 = 7.93$ ;  $p < .05$ ).

Daily academic hassles were more stressful for students who were not employed ( $U = 1186.5$ ;  $p < .05$ ). Financial concerns caused academic stress among non-resident students ( $U = 2124.5$ ;  $p = .01$ ), first year students ( $\chi^2 = 10.71$ ;  $p = .03$ ), and students from the Faculty of Development Studies ( $\chi^2 = 13.86$ ;  $p < .05$ ) compared to continuing students.

First year students experienced the most academic stress from academic overload ( $\chi^2 = 10.23$ ;  $p = .04$ ), and social expectations ( $\chi^2 = 18.38$ ;  $p < .01$ ) compared to continuing students. Faculty of medicine student experienced higher academic stress from academic overload ( $\chi^2 = 10.38$ ;  $p < .02$ ) and course requirements ( $\chi^2 = 10.79$ ;  $p = .01$ ) compared to students in other faculties.

**Table 3. Predictors of having a supplementary exam**

Predictor	OR	Wald	<i>p</i>
Age	.88	5.58	.02
Faculty		12.83	.01
Medicine	.24	7.24	.01
Science	.30	4.37	.04
Development Studies	.99	< .001	.98
CGPA		7.15	.07
2.00-2.90	.19	1.97	.16
3.00-3.59	.21	2.03	.16
4.00-4.40	.64	.13	.70
Total Study Habits	1.01	.08	.78
Total Academic Stress	1.01	3.70	.06
Constant	61.18	3.91	.05

Note. Nagelkerke R Square = .23

The likelihood of having a supplementary exam was high among students from the Faculties of Medicine and Science respectively. In addition, the likelihood of having a supplementary exam was found to be significant based on age. The model accounted for 20.4% of the variance of the supplementary exams obtained by the university students.

### Discussion

In considering academic stress among university students, first year students experienced the most stress from the perception of academic overload. This was attributed to the fact that these university students must deal with the transition into university life as well as meet the academic demands. Misra and McKean (2000) confirmed these findings as they emphasized that students experienced stress because of the pressure to meet assessment deadlines amidst other responsibilities.

Daily academic hassles were reported to be the most stressful. This finding disagrees with findings for example from Zeidner (1992), who used the same instrument and reported that students experienced most stress from academic overload and academic evaluation procedures. The present study's findings agreed with previous findings of Ross et al. (1999) who also reported daily academic hassles as the most stressful among university students.

As MUST has a relatively small student population compared with other public universities; it makes constant monitoring of students performance by the academic staff and university administration easy. As a result, the students are under pressure to obtain good grades to meet the personal and social expectations and are therefore sensitive to feedback from the people in their lives (Ang & Huan, 2006). This will result in higher levels of stress mainly from daily academic hassles, like a competitive environment and the pressure to obtain good grades, among others. Therefore, emphasis on developing and implementing strategies of how to deal with the inevitable academic hassles must be made right from the orientation of students' first year and throughout their stay at the university.

Unexpectedly, personal problems such as perceived prejudice, religious activities, relationship problems, and medical problems were found to be the least stressful factor in the academic environment. This finding agrees with Zeidner (1992) whose study's findings revealed that the least salient stressors among university students were personal, familial, social, and administrative factors.

First year students experienced higher levels of stress than continuing students. This finding affirms results by Ross et al. (1999) who revealed that stress levels varied based on the year of study of the students, with first year students being more prone to stress followed by the continuing students. Most of the time first year students are leaving home for the very first time and therefore need to adjust to the new-found freedom as well as how to maintain a high level of academic performance (Robotham, 2008). During these adjustments the first year students have to conform to the particular campus values, culture and traditions, at the same time adjust to the new mode of instruction and pursue academic interests, which often can be very stressful as pointed out by several researchers (Zeidner, 1992; Krause et al., 2005). Furthermore, students perceive course load to be high in their first year of study that in turn causes exam stress (Mani, 2010).

Shaikh et al. (2004) varied somewhat to this study's findings; as they found those continuing students in their final year of study also experienced higher levels of stress. This posits that the perceived academic stress is not only dependent on the year but also the nature of the course of study, for example, medical students had higher levels of stress from course requirements plausibly caused by a combination of academic and clinical work.

Among study habits of university students, motivation was identified as the most commonly used study habit. Study motivation was found to be a positive influence on general study habits of students (Crede & Kuncel, 2008; Nagaraju, 2004). Most students display extrinsic motivation for obtaining good grades (Crede & Kuncel, 2008; Schmakel, 2008). Motivation indicators measured in this study included not giving up on a difficult assignment, enjoying learning, and belief in the ability to obtain better grades, and others. Motivation may be the most commonly identified because at the university, students are motivated to study hard so that they can get good jobs and eventually have a better life (Ang & Huan, 2006).

Studying a chapter as a study habit reflected the student's ability to do independent study through personal reading of textbooks and other academic materials beside the lecture notes. Studying a chapter was the least used study habit in this study and confirms previous study findings that students had passive reading strategies like rote memorization and reviewing texts without knowing or understanding what one is reading (Gettinger & Seibert, 2002; Jiao & Onwuegbuzie, 2001). Furthermore Kakai and colleagues (2004) found out that undergraduate students had limited information-seeking techniques exemplified by only relying on reading their lecture notes for final examinations and their textbooks for completing assignments. However at university level, students are expected to do independent study to enable them complete course work assignments with little or no help and enhance their knowledge base on the subject matter (Slate et al., 1998). Hansen and

Hansen (2008) recommend that students should highlight main points, learn, and understand content when reading. It is therefore important that students are encouraged to improve their information-seeking strategies to enhance their ability to study independently and enhance their knowledge in addition to the lecture notes given.

In this study, female students were found to have relatively better study habits than the male students with statistically significant differences observed as per organizing time. These findings affirm previous findings where females had better study habits (Suneeta et al., 2010). In addition Misra and Mckean, (2000) particularly noted that females have better time management skills with regards to control of time available, planning and organizing tasks and time control. Female students were also more recognized for taking good lecture notes, proof reading work, and having the ability to recall more facts from lectures than the male students.

Faculty of Science has over fifteen course units per year where as the Bachelor of Development Studies has seven course units per year. The course overload in the Faculty of Science programs may account for the low scores on the study habits scale because it is likely that these students may be overwhelmed with academic concerns such as coursework deadlines and attending lectures.

Students with high CGPA/GPA, as expected, scored highest on study habits. Several research findings have continuously expounded on the fact that high achievers have better study habits than low achievers, which explains their continuous good academic performance. This is because study habits are positively related to the academic performance of students (Aluja & Blanch, 2004; Culler & Hollan, 1980; Elliot et al., 1990). In addition, the ability of students to employ appropriate study habits influences how much they are able to recall and accurately demonstrate during a test or examination, which is the yardstick of academic performance. Therefore students with poor study habits can benefit from study habit training on goal setting, prioritization, note taking, and reading skills (Jiao & Onwuegbuzie, 2001).

There were several predictors of academic performance of university students considered in this study. Students with GPA/CGPA 4.40-5.00 were found to have better study habits than the other GPA/CGPA categories. This study finding confirms previous research that study habits positively correlate with academic performance (Aluja & Blanch, 2004; Onwuegbuzie et al., 2001). Furthermore, students with particularly higher GPA were found to have better study habits than those with lower CPA (Lammers et al., 2001)

The likelihood of having a supplementary exam increased depending on age and faculty. The regression model accounted for 23% of the variance of the supplementary exams obtained by the university students with Faculty of Science and Faculty of Medicine being more at risk of having a supplementary exam. This could be attributed to the course load of the faculties compared to the other faculties. The course load in the Faculty of Science could account for the possibility of performing poorly as the students may fail to juggle their academic work and the university life (Mani, 2010). Medical students having a higher risk of obtaining a supplementary exam could be attributed to the stressful academic demands like variable hour shift for clinical rotations, and sleep deprivation in addition to curriculum overload (Kuhn, et al., 2005). As a result, university students should supported closely through study habits, time management, and stress skills training so that they can handle both the academic demands and university life in general. Regarding age, results indicated that the older the student the more likely they were to take a supplementary exam.

There were some limitations to the study findings on academic stress, study habits, and academic performance. First was that the results were based on a small sample of undergraduates. The researcher received 196 completed questionnaires from the respondents with 58.1% response rate. Also some respondents such as the third year and fifth year Bachelor of Medicine and Bachelor of Surgery students, fourth year Bachelor of Medical Laboratory Science, and Bachelor of Pharmacy students who were all in their clinical years and research semester. As a result, generalization to other universities cannot be made basing on this study predictions unless the traits are similar to target population. Finally, issues related to academic stress, study habits, and academic performance are assumed to also affect all university students including postgraduate students. However, this study only considers undergraduate students. Therefore, the research findings cannot be generalizable to postgraduate students.

### Conclusions

This study confirms the existing body of information about undergraduates regarding the academic stress, study habits, and academic performance. Academic environment exposes undergraduate students to stressful situations. First year students experience greater levels of stress than continuing students. Study motivation was the strongest study habit, while studying a chapter is the weakest study habit of the university students.

A majority of the students on average had a current GPA/CGPA in the second-class honors degrees. The nature of the course (academic program) students are pursuing can predict the academic performance of the university students as evidenced by the high number of those who took supplementary exams in the Faculty of Medicine and Faculty of Science. Therefore, students pursuing medical and science-based programs at MUST are more likely to perform poorer than those who are pursuing humanities programs due to the comparatively higher course load and subsequent academic demands. The likelihood of having a supplementary exam was also higher among older students.

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