Distance Learning Postgraduate Student Stress while Writing a Dissertation or Thesis

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Abstract: Working on a postgraduate degree can be a stressful experience for students, including distance learning postgraduate students who are at the stage of writing their dissertation or thesis. In this mixed methods study, 748 distance learning postgraduate students who were enrolled at a South African university and were engaged in the dissertation or thesis stage, completed an online questionnaire about potential stressors and experienced stress. Quantitative and qualitative data both indicated two general sources of stress: 1) uncertainty about the research/writing process along with insufficient support from supervisors, and 2) difficulties with time management. Issues pertaining to relationships, health, and finances were not as strongly related to overall stress. The findings suggest that universities with distance learning postgraduate programs could help their students by offering training or counselling services that are tailored to their needs, such as in how to balance academic work with family and employment responsibilities. Other implications include improving how supervisors assist distance learning postgraduate students, such as in maintaining regular contact with students, expediting the provision of feedback, and improving clarity in correspondence, to help ensure that distance learning students receive the guidance they require when writing their dissertation or thesis.

Résumé: Le fait de travailler sur un diplôme d'études supérieures peut être une expérience stressante pour les étudiants, y compris les étudiants au cycle supérieur en apprentissage à distance qui en sont à l'étape de rédaction de leur mémoire ou thèse. Dans cette étude de méthodes mixtes, 748 étudiants au cycle supérieur en apprentissage à distance qui étaient inscrits dans une université sud-africaine et avaient commencé l'étape de mémoire ou de thèse ont rempli un questionnaire en ligne sur les facteurs de stress potentiels et le stress vécu. À la fois les données quantitatives et qualitatives ont indiqué deux sources générales de stress: 1) l'incertitude sur le processus de la recherche/processus d'écriture au même titre que le soutien insuffisant de la part des superviseurs, et 2) des difficultés avec la gestion du temps. Les questions relatives aux relations, la santé et les finances n'ont pas été aussi fortement liées au stress global. Les résultats suggèrent que les universités avec des programmes de cycles supérieurs d'apprentissage à distance pourraient aider leurs étudiants en proposant de la formation ou des services de counseling adaptés à leurs besoins, comme de quelle façon équilibrer le travail universitaire avec les responsabilités familiales et professionnelles. D'autres implications comprennent l'amélioration de la façon dont les superviseurs aident les étudiants au cycle supérieur en apprentissage à distance, tel que de maintenir un contact régulier avec les étudiants, d'accélérer la fourniture de rétroaction, et l'amélioration de la clarté dans la correspondance, pour aider à faire en sorte que les étudiants en apprentissage à distance reçoivent l'encadrement dont ils ont besoin lors de la rédaction de leur mémoire ou thèse.

Keywords: distance learning, graduate/postgraduate students, stressors, stress, dissertation or thesis writing

Introduction

The attrition of master's and doctoral students is a common problem for many universities. For instance, an estimated 40-50% of doctoral students leave university before completing their programmes in the U.S. (Golde, 2005) and in South Africa the attrition rate of doctoral students

is up to 88% (Department of Higher Education and Training, 2013). Student attrition can bring costs and consequences for governments, communities, as well as the students themselves (Lovitts, 2001). For example, governments may waste resources, such as grants and subsidies, that are awarded to students who dropout. Communities lose the skills and knowledge that students could have brought with a completed education, and students can experience a sense of frustration and uncertainty during and after the dropout process.

Various factors can affect a master's or doctoral student's decision to leave or stay in university. Some of the psychological factors that can have an impact on attrition are the potential stressors and experienced stress that are posed to students (Ehrenberg, Jakubson, Groen, So, & Price, 2007; Lovitts & Nelson, 2000). According to Lazarus and Folkman (1984) stressors are objects or events in the environment that can put demands on an individual's external or internal resources. When a stressor is perceived by the individual as taxing, exceeding his or her resources, or endangering his or her wellbeing, then the individual can experience stress. While stress can be positive by increasing awareness and motivation, it can also be debilitating by reducing concentration and interfering with a student's performance (Seyle, 1978).

Some of the stressors that have typically been found to relate to postgraduate student stress include having too much academic work, along with issues regarding time management (Al-Saleh et al., 2010; Bhat & Basson, 2013; Bukhsh, Shahzad, & Nisa, 2011; Mazzola, Walker, Shockley, & Spector, 2011), professional isolation and lack of social support (Bukhsh et al., 2011; El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Mazzola et al., 2011), issues with personal relationships (El-Ghoroury et al., 2012; Muirhead & Locker, 2007), financial difficulties and debt (El-Ghoroury et al., 2012; Soares, Prestridge, & Soares, 1992), and concerns regarding the future (Soares et al., 1992). Although a number of studies have been conducted on the potential stressors and experienced stress of postgraduate students, the majority of these studies have been conducted with residential students. Such students attend classes and seminars on a university campus and can interact with their advisers and fellow students face-to-face. For distance learning students, however, the potential stressors, and the relationships between stressors and stress, may be different. For example, distance learning students may experience greater stress from feeling academically isolated, but may experience less stress from relationship difficulties, since they may live closer to their personal relations.

A limited amount of research has been conducted on the stressors and stress of distance learning postgraduate students. Furlonger and Gencic (2014) conducted a quantitative survey of both residential and distance learning students on their overall, experienced stress and found no difference between the groups but the researchers did not look at specific sources of stress. Other studies that focused exclusively on distance learning students took a qualitative approach and included a unique focus that makes them different from the current study. Kampfe et al. (2006) studied counselors transitioning into distance learning internships and specifically asked participants about stressors related to the transition. A second study by Maunganidze, Sodi, Mudhovozi, Mberi, and Mutasa (2010) asked distance learning postgraduate students about the sources of their academic counseling needs, a line of research that could shed light on the stressors and stress of this population, but which is still different. At the same time, Maunganidze and colleagues found that the most commonly reported counseling needs included conflicting work and family commitments, difficulties in communicating with academic staff, and financial strain. The counseling needs of distance learning postgraduate students were therefore similar to the commonly reported stressors of residential postgraduate students. The present study will contribute to the research on distance learning students, and their overall well being, by directly investigating the potential stressors that are placed on this population and how those stressors are related to experienced stress.

The present study will also take its own unique focus by sampling from students who are in the process of writing their dissertation or thesis. During this period of a postgraduate degree

students are required to develop their own research idea, execute a variety of research tasks, and then write a full paper, all of which they may, to various degrees, be doing for the first time. This phase of a postgraduate degree can therefore bring unique challenges and could heighten the effects of certain potential stressors on the manifestation of student stress, particularly for students in a distance learning program, who do not have the same academic environments and resources as residential students. The present study is, therefore, a look at the stressors and stress that occur at the intersection of distance learning programs and the phase of writing a dissertation or thesis.

Finally, the majority of previous studies on student stress have drawn samples from specific academic programs such as the social sciences or medicine (e.g., Cahir & Morris, 1991; El-Ghoroury et al., 2012; Gunasingam, Burns, Edwards, Dinh, & Walton, 2015; Hudson & O'Regan, 1994; Mechanic, 1962; Nelson, Dell'Oliver, Koch, & Buckler, 2001). The present study sampled from postgraduate students across all colleges (i.e., facul

A mixed methods approach was used to address the research question regarding the stressors and stress that postgraduate students experience when writing dissertations and theses in a distance learning environment. A mixed methods approach offers two advantages. The first advantage is that different methods can divulge different sources of student stress (Mazzola et al., 2011), which can improve the breadth of understanding regarding student stress. The second advantage is that it provides a means of triangulation, which can verify and validate the more common sources of student stress (Denzin, 2012).

Method

Participants and Procedure

An email was sent to all registered master's and doctoral students at a distance learning university in South Africa inviting them to participate in an online survey. A total of 6,758 emails were sent. The email requested participation from students who were in the process of writing their dissertation or thesis. The questionnaire was completed by 815 students; however, 67 students reported that they were completing coursework and were not actually involved in writing a dissertation or thesis. The final sample was therefore 748 students.

Of the participating students, 37% were female and 63% were male. The sample was 77% Black, 17% White, 4% Indian, and 2% Coloured. Students ranged in age from 23 years to 72 years (M = 39.12, SD = 8.74). The sample's distribution by colleges was as follows: 39% College of Human Sciences, 22% College of Economic and Management Sciences, 17% College of Law, 10% College of Agriculture and Environmental Sciences, 8% College of Science, and 4% College of Accounting Sciences.

Ethics approval for the present study, and for contacting the university's students, were obtained from the university's College of Human Sciences Ethics Committee and from the Senate Research and Innovation and Higher Degrees Committee. Participation in this study was voluntary and anonymity was guaranteed to participants. Students were made aware that they could withdraw from the study at any time.

Instruments

Quantitative

Stress. Overall stress was measured using a single item. Students were asked to indicate the extent to which they experience stress while engaged in the process of writing their dissertation or thesis. Responses were provided on a 5-point scale that ranged from 1 (Not at all) to 5 (Large extent).

Stressors. The amount of stress that students experienced from specific stressors was measured using an adapted version of the Stress and Support Questionnaire for University

Students (SASQUS; Pillay & Ngcobo, 2010). The SASQUS includes 21 items that measure stress from specific stressors and was developed for undergraduate students at residential universities. Five items from the SASQUS were not used in the present study because they were considered to be irrelevant to distance learning students in the process of writing a dissertation or thesis. Example items that were removed are "Failing tests/exams" and "Difficulties with classmates." To the 16 items that were taken from the SASQUS, eight items were added. These items came from two sources: 1) prior studies on the stressors of postgraduate students and 2) prior, informal discussions that one of the authors had with distance learning postgraduate students who were writing a dissertation or thesis. Based on prior research, the following items were added: "Lack of time management" (Kampfe et al., 2006; Soares et al., 1992), "Supervisors not supportive" (El-Ghoroury et al., 2012; Maunganidze et al., 2010), "Failing to meet deadlines" (Kampfe et al., 2006), and "Personal problems" (Maunganidze et al., 2010; Soares et al., 1992). From informal discussions with distance learning students, the following items were added: "Difficulties with colleagues at work," "Procrastination," "Not sure what is expected," and "Pushing yourself beyond limit." The stressors scale used in the present study therefore consisted of 24 items. Participants were asked to report the degree of stress they experienced with respect to each item. While the SASQUS used a three-point scale to record responses, the present study used a five-point scale that ranged from 1 (Feeling no stress) to 5 (Extreme stress). Cronbach's alpha for the adapted questionnaire, which was used in the present study, was .92.

Qualitative

The online survey also included an open-ended question in order to provide an additional means of exploring the sources of stress that distance learning postgraduate students might experience during the process of writing a dissertation or thesis. For the open-ended question, students were asked to write down any reasons for experiencing stress while writing their dissertation or thesis.

Data Analysis

The reason for collecting the quantitative data was to statistically determine which of the previously identified stressors, included in the stressors scale, would predict the overall experienced stress of the students. Although 24 potential stressors were included in the study design, it was possible that some of the stressors overlapped in content area and would not represent independent sources of stress. It was therefore decided to amalgamate similar stressors into single subscales and to then see how the subscales would predict the overall experienced stress of students. To develop the subscales, an exploratory factor analysis of the stressor items was conducted. The stressor items of each factor were then combined by calculating the mean score of the items. The reduced set of stressor factors were then inserted into a linear regression analysis, with overall experienced stress as the outcome variable, to determine how the factors predicted the overall experienced stress of the students. The purposes for collecting the qualitative data were 1) to confirm the principal sources of stress found in the quantitative analysis and 2) to determine if there were any sources of stress for this population of students that were not identified prior to conducting the study. The qualitative data were analysed using grounded theory procedures involving open, axial, and selected coding (Strauss & Corbin, 1998). Verification of themes was done by two researchers presenting and supporting their decisions regarding the themes they selected.

Results

Factor Analysis of Stressor Items

An exploratory factor analysis was conducted to reduce the 24 stressor items into a set of stressor factors. The principal components method extracted five factors based on the eigenvalue > 1 criterion. The factors accounted for 65% of the variance. Factor loadings after

direct oblimin rotation are presented in Table 1. Individual items were retained if they had factor loadings greater than or equal to .40, and if they loaded on a single factor. Only two stressor items were removed. The analysis determined that the remaining 22 stressor items formed five categories of stressors, which were labelled as follows: relationship stressors, time management/workload, health problems, financial and transport problems, and academic stressors. Cronbach's alphas for the stressor subscales were .89 (relationship stressors), .70 (time management/workload), .87 (health problems), .84 (financial and transport problems), and .75 (academic stressors).

Table 1. Exploratory Factor Analysis of Stressor Items

Item	1	2	3	4	5
Relationship stressors					
Difficulties with parents	.858				
Difficulties with siblings	.850				
Difficulties with other relatives	.815				
Difficulties with friends	.811				
Difficulties with colleagues at work	.605				
Parents in conflict with each other	.603				
Personal relationship problems	.521				
Time management/workload					
Lack of time management		.853			
Procrastination		.729			
Academic work too demanding		.505			
Stressful job		.452			

Health problems

Item	Health problems	Financial and transport problems	Academic stressors
Death of main family	.839		
Death of a significant person	.786		
Family members ill	.712		
Personal illness	.602		

Financial and transport problems

Item	Health problems	Financial and transport problems	Academic stressors
Transport problems		.827	
Financial problems		.824	
Accommodation problems		.755	

Academic stressors

Item	Health problems	Financial and transport problems	Academic stressors
Not sure what is expected			.806
Fear of failing			.713
Supervisors not supportive			.703
Pushing yourself beyond limit			.472
(Removed)			
Failing to meet deadlines	.470		.471
Personal problems			

Note: Loadings ≥ .40 are reported.

Descriptive statistics for the stressor factors and the overall stress item are presented in Table 2. Of the stressor factors, time management/workload and academic stressors had the highest mean stress levels. Also, each stressor factor, except financial and transport problems, had a significant, positive correlation with overall stress.

Table 2. Descriptive Statistics of Stressors and Stress

Variable	M (SD)	1	2	3	4	5
1 Stress	3.44 (1.20)	-				
2 Relationship stressors	2.00 (.90)	.08*	-			
3 Time management/workload	2.86 (.88)	.33***	.36***	-		
4 Health problems	2.37 (.97)	.17***	.62***	.44***	-	
5 Financial and transport problems	2.27 (1.07)	.07	.58***	.33***	.52***	-
6 Academic stressors	2.62 (.98)	.34***	.41***	.54***	.66***	.45***

*** $p < .001$.

Regression Analysis

A linear regression analysis was conducted to determine the relative strength of the stressor factors in predicting the overall experienced stress of students. The regression model accounted for a significant amount of variance in overall stress, $F(5, 742) = 28.547$, $p < .001$, $R2 = .161$. Time management/workload, financial and transport problems, and academic stressors were significant predictors of overall stress (Table 3).

Table 3. Regression Analysis Predicting Overall Stress from Specific Stressors

Variable	B	SE	β	p
Relationship stressors	-.05	.07	-.04	.447
Time management/workload	.31	.06	.23	.000
Health problems	-.09	.06	-.07	.165
Financial and transport problems	-.10	.05	-.09	.033
Academic stressors	.39	.06	.32	.000

Time management/workload and academic stressors had the strongest relationships with overall stress and the relationships were both positive. Financial and transport problems was negatively related to overall stress in the regression analysis. The negative relationship of financial and transport problems with overall stress may have resulted from controlling for the other stressors, particularly that of time management/workload. The time management /workload factor included items related to job stress and not having enough time to work on the dissertation or thesis. Students who have more job stress and more time demands may also be earning more money compared to students with less job stress and fewer time demands. With a strong, positive relationship between time demands and overall stress, students with fewer time demands might experience less stress when it comes to the process of writing their dissertation or thesis, even though they may have more financial difficulties and more stress in other areas of their lives. In other words, when controlling for the positive relationship

between time demands and overall stress, a negative relationship emerges between financial difficulties and the stress associated with writing a dissertation or thesis.

Although a negative relationship emerged between financial problems and overall stress, the main findings that have practical implications are those involving time management /workload and academic stressors. These two factors had the highest mean stress scores when looking at the individual stressor factors, they had the largest correlations with overall stress, and they were the strongest predictors of overall stress in a regression analysis.

Qualitative Analysis

The narratives that students provided about the stress they experienced while working on a dissertation or thesis were analysed using grounded theory techniques (Strauss & Corbin, 1998). The themes that emerged were lack of balance, lack of support, lack of feedback, and uncertainty.

Lack of Balance

Some of the students reported experiencing stress from having difficulties in balancing numerous responsibilities. Of those students, many reported that they found it overwhelming to find a balance between work, family, and academic tasks. For example, one student stated, "I feel overwhelmed with the scope of research expected. I am trying to juggle a hectic work schedule, three children, church activities as well as research and study which leaves me overwhelmed at times and demoralised and feeling unable to cope."

Some of the responses were framed in a way that indicated work and family responsibilities were interfering with academic work. For example, "Mostly time constraints. I will set myself certain goals and everything else just seems to get in the way, family issues, money issues and before you know it the targets you set are not attainable." Another student responded, "The only real time for study is during the weekends, when my energy is often spent after a hectic week, and I still have responsibilities towards my family."

Other students indicated that making time for their dissertation or thesis interfered with work and family, which then created stress that was related to those aspects of their lives. One student stated, "The stress that emanates from the lack of achieving balance between work, family and study demands. Usually complete study work at the last moment which is stressful as it might call for unplanned leave from work." Another wrote, "not making enough progress. Not having enough time for my doctoral thesis or not spending enough time with my family when I take time for my doctoral thesis."

Having numerous, time intensive responsibilities was therefore one of the stressor themes that emerged from the analysis. These findings are in line with previous research, which showed that university students can experience a lack of time management due to additional work and family commitments (Al-Saleh et al., 2010; Bukhsh et al., 2011; Muirhead & Locker, 2007).

Lack of Support

Most of the students who reported that they were experiencing stress with the dissertation or thesis process stated that they were not getting enough support. Sometimes students indicated a general absence of support and other times students referred to a lack of support from the department, supervisors, people at home, or people at work. Regarding a general lack of support, one student stated, "I have no one to direct and discuss with the problems I incur when compiling my information." Another gave the reply, "I'm working on my own. When I need direction I do not know who to turn to?" As a result, some students experienced stress because they found it challenging to complete a specific stage of the research process. For example, one student stated, "I find it difficult to write a proposal by myself, without support."

Some students perceived a lack of support from supervisors, which resulted in them feeling despondent about the postgraduate program. One student described this experience by stating, "I can hardly get any support from the supervisors. I am just on my own. I am thinking of quitting this program." Other examples from students were the following: "It is related with the supervisor and scarcity of senior advisors/professors in the field of business leadership. So that I could not get support beyond my personal effort to do the research," and

I am doing my dissertation by myself without any support from [the university] including the supervisor. I have no one to ask and get responses. What I am doing by myself finally may not fulfil the universities requirement. Therefore, I feel that I may be wasting my time. Believe me I am very much stressed. A minor question in my mind demands from me a lot of time and effort because I don't have support from the supervisor.

Other students reported that they experienced stress because they did not have the necessary resources to write a dissertation or thesis. One student reported, "even though the library is helpful when you manage to get through the books do not come on time." Another stated, "due to distance learning, I am unable to get all the materials which are necessary to my study."

Prior research has also found that students who do not have adequate support systems can experience increased levels of stress (Gardener, 2009; Mechanic, 1962). Furthermore, academic support can help students to integrate and connect with their academic departments and disciplines (Golde, 2000; Lovitts, 2001). Another theme that emerged from the qualitative analysis, which is related to the above issues regarding a lack of support from supervisors, was the lack of feedback.

Lack of Feedback

Although problems with a lack of feedback are related to the theme of lack of support, responses from students about feedback were common enough for them to form their own theme. Some students reported a loss in motivation due to a lack of feedback: "the thing of just writing things without being sure whether you will get feedback or not may be stressful, hence motivation to work hard becomes low as you are not sure of what you are doing due to lack of encouragement or direction to continue with what you are doing."

Other students indicated that the stress from a lack of feedback came indirectly through concerns with time and not being sure when they would complete their studies. One student stated, "I wait for too long for feedback therefore I worry so much and this overworks me mentally. Anxiety is too much since I am not completing in time." Another student reported, I have been on these chapters for many years and progress seems to be very slow. If I get feedback after a long period from my supervisor e.g. after 3 or 4 months, data will be like outdated and it's like you are always starting afresh and going round and round on one issue. Prior research has shown that lack of feedback from supervisors often results in feelings of frustration among students (Ezebilo 2012; Girves & Wemmerus, 1988; Jones 2013). For the students in this study, the stress from lack of feedback was often tied to other sources of stress, such as time demands and feelings that progress was not being made. Experiencing a lack of feedback could also exacerbate the final stressor theme, which was uncertainty.

Uncertainty

Students reported that they experienced stress because they felt uncertain about what was expected of them. Such uncertainty also led students to experience a fear of failure, which itself was reported to be a source of stress. "I feel like I am in darkness. Don't know if I am going North or South but I'm going anyway." "Absence of direction driving me crazy. I'm overwhelmed by fear of failure yet I don't know how to go forward without guidance or supervision."

Some students indicated that their uncertainty was related to not understanding the comments from their supervisors, to not knowing how they should write, and to whether their written work would be approved. "You mostly stress about whether what you will submit next is going to meet your supervisors expectation or whether he will be satisfied." "I have submitted it twice, and I seem not to get it right. There is something I need to include and I do not quite know what."

Other students conveyed that communicating over a distance was difficult in clarifying topics, such as research methodology and statistics. "Face to face supervision is better. E-mail communication may fail to clarify some of the issues." Another student provided the following response:

> Methodology can be confusing especially the quantitative side. I find that my one supervisor refers me to the other supervisor who is supposed to be strong with methodology. But he is the useless one and it is hard to get information out of him. She keeps telling me to make an appointment to see him but I am WORKING, I can't just take off work. That is the reason I chose [this university] - so that everything could be done without me having to travel to the university.

The qualitative themes indicate that distance learning students, who are in the dissertation or thesis stage of their degrees, can experience a number of sources of stress. Some stressors were related to reasons for enrolling in a distance learning program, such as not having the flexibility in time or travel to enrol in a residential program. Other sources of stress were related to the distance learning program itself, such as not having sufficient contact with supervisors. While the qualitative themes verified some of the stressors that were found in the quantitative analysis, they also provided an expanded description of the stressors that students were experiencing.

Discussion

Writing a dissertation or thesis can be a challenging task for students, perhaps particularly for distance learning students who are geographically removed from colleagues and supervisors. To our knowledge, this is the first study of the stressors and stress that postgraduate students encounter while writing a dissertation or thesis in a distance learning environment. The study made use of a mixed methods research design, which both replicated and expanded on the types of stressors that led to stress for the students in the study.

A factor analysis of 24 potential stressors revealed five overarching stressor factors, which are all relevant to student life: relationship stressors, time management/workload, health problems, financial and transport problems, and academic stressors. A linear regression analysis then showed that overall experienced stress was predicted primarily by issues related to time management/workload and academic stressors. The results are in line with previous studies that found these stressors to elicit relatively high levels of stress in postgraduate students (El-Ghoroury et al., 2012; Mazzola et al., 2011; Soares et al., 1992), but highlights their relative importance by comparing them against other potential stressors in a multiple regression analysis.

The role that time management/workload and academic stressors play in the manifestation of stress may be particularly relevant to distance learning students during the process of writing a dissertation or thesis. Postgraduate students who enrol in a distance learning program may do so because of work and family commitments that do not allow them the flexibility to relocate close to a university or to enrol in regular, daytime courses (which would be part of a residential program before the dissertation or thesis phase). The percentage of students who are employed, or have other time demands in addition to their academic work, may, therefore, be higher amongst distance learning students compared to residential students. Future research could determine whether this is the case.

Academic stressors were the strongest predictor of stress, and this may have occurred for a number of reasons. The academic stressor items that formed the academic stressor factor included the following: not being sure of what is expected during the writing process, not receiving enough support from supervisors, and having a fear of failing at the task. Distance learning students do not have the opportunity to visit their supervisor's office for discussions and to develop clarity on how to proceed through the dissertation or thesis process, nor do they have as much contact with colleagues to ask informal questions and to problem-solve during social interactions. The difficulty and novelty of writing a dissertation or thesis could, therefore, easily lead to stress when combined with academic isolation and insufficient assistance from supervisors (El-Ghoroury et al., 2012; Hadjioannou, Shelton, Fu, & Dhanarattigannon, 2007).

Another reason for the relationship between academic stressors and stress may be one that is unique to the present sample of students. In South Africa, during the 15 years leading up to 2009, the number of students enrolled in postgraduate programs more than doubled, while the number of permanent academics increased by only 40% (Council of Higher Education, 2009). These trends may have produced a particular strain on the supervisory resources available to the current sample. Whether the relationship between academic stressors and stress was particularly strong in this study, for this reason, could be verified in future research with other samples of students. Notwithstanding the mentioned trends within South Africa, however, academic pressures, lack of support, and isolation have been found to be related to stress for residential postgraduate students (El-Ghoroury et al., 2012; Gardener, 2009; Mechanic, 1962; Soares et al., 1992). Furthermore, if the context in South Africa exacerbated the connection between lack of supervisory support and student stress, then the relationship contains a message for future distance learning programs. While distance learning can make higher education more accessible to a wider range of potential students (Drew et al., 2015), and although the technology to offer distance learning is becoming more practical for universities, the expansion of distance learning programs, and a proliferation of distance learning enrolments, could outpace the supervisory resources of a university and consequently exacerbate the stress of students.

From the qualitative analysis, it was found that the most commonly reported stressors were a lack of balance, a lack of support, a lack of feedback, and uncertainty. These four themes confirmed the quantitative findings which showed that time management/workload and academic stressors were the primary predictors of overall stress. The quantitative factor of time management/workload could be seen as mapping onto the qualitative theme of lack of balance. The three remaining qualitative themes seem to expand the dominant quantitative factor of academic stressors: lack of support from supervisors, lack of feedback from supervisors, and ensuing uncertainty about the writing process. These qualitative themes help illuminate why academic stressors were a strong predictor of stress in the regression analysis. Issues related to relationships, health, and finances did not emerge as prevalent themes from the qualitative data, nor did they predict overall stress in an analysis of the quantitative data.

The study shows that, while distance learning programs can bring education opportunities to more students (Drew et al., 2015), they can also come with potential stressors that make learning, and graduating, difficult. Universities with distance learning programs, however, could set up policies and programs to address the more critical stressors that students experience during the dissertation and thesis process.

One of the main sources of stress that was found in the study was uncertainty regarding the process of completing a dissertation or thesis. This included students not knowing what was expected from them and not receiving sufficient support and feedback from supervisors. The role that supervisors play in the academic experiences of postgraduate students can be very important. Offering professional support, and even emotional support, can reduce student stress and increase student persistence (Gardner, 2009; Herman, 2011; Jairam & Kahl, 2012;

Jones, 2013; Myers et al., 2012). University departments with distance learning programs could develop policies requiring supervisors to make periodical contact with their students in order to maintain rapport and to provide students with a sense that they are not alone. The policy could also encourage supervisors to communicate to students the length of time it will typically take them to provide feedback, and even indicate the maximum amount of time that is permitted. Letting students know when a response will come would remove the guesswork and uncertainty on the students' side.

Distance learning programs could also offer their students seminars in time management strategies and make time management counselling available. The time management strategies could include components specifically designed to help students who are working or who have family obligations. Also, during the student seminars, students could be encouraged to interact with fellow students in order to develop social networks to help them work through academic and time management problems, which could alleviate stress (Bukhsh et al., 2011; Gardner, 2009).

A university could also produce a social media network for distance learning students who are in the process of writing their dissertation or thesis. Using the network, students could discuss their experiences, post questions that other students might respond to, and even post invites to special interest groups (e.g., based on an academic topic, geographic region, or phase of the writing process). Peer mentoring among postgraduate students has been shown to provide students with increased psychosocial and instrumental support (Grant-Vallone & Ensher, 2000), and to help students adjust to new challenges and to continue with their programs of study (Gardner, 2007; Grant-Vallone & Ensher, 2000; Leidenfrost, Strassnig, Schabmann, Spiel, & Carbon, 2011).

The present study provides new insights into the challenges experienced by distance learning postgraduate students, and although the study's sample included students from a variety of academic disciplines, which improves the generalizability of the findings, there remain a few unique characteristics about the sample. The students in the present study may have been older than the postgraduate student populations at other universities (mean age of this study's sample was 39 years). As a result, the students of this study may have had more work and family commitments, and, therefore, more stressors related to time management than would be the case for other students. Also, the students in the sample were distance learning students throughout their postgraduate degrees. They did not complete their postgraduate coursework as residential students and then transition into a distance learning format to complete their dissertation or thesis. Students who do complete their coursework as residential students, and then transition to a distance-learning format to finish their degrees, may be able to form more academic support networks before entering the dissertation or thesis stage.

In conclusion, distance learning programs are becoming more technologically viable for universities, and they can open the doors of education to a wider range of students. Unfortunately, however, attrition rates remain a problem for universities and distance learning postgraduate students may be at greater risk of not completing their degrees. With low graduation rates in mind, Jones (2013) argues that universities and supervisors need to understand the problems and issues that may arise in a postgraduate student's journey. The present paper provides an analysis of the sources of stress that distance learning postgraduate students experience while writing their dissertations and theses, the last stage before completing their academic degrees.

References

Al-Saleh, S. A., Samar, A., Ebtissam, M., Al-Madi, N. S., Al-Angari, H. A., Al-Shehri, D., & Mohammed, S. (2010). Survey of Perceived Stress-Inducing Problems Among Dental Students, Saudi Arabia. *The Saudi Dental Journal, 22*, 83-88.

Bhat, S. B., & Basson, W. J. (2013). Perceived Stress of Dental Students. *Journal of Psychology in Africa, 23*, 647-649.

Bukhsh, Q., Shahzad, A., & Nisa, M. (2011). A Study of Learning Stress and Stress Management Strategies of the Students of Postgraduate Level: A Case Study of Islamia University of Bahawalpur, Pakistan. *Social and Behavioral Sciences, 30,* 182-186.

Cahir, N., & Morris, R. D. (1991). The Psychology Student Stress Questionnaire. *Journal of Clinical Psychology, 47,* 414-417.

Council on Higher Education. (2009). *Higher education monitor: Postgraduate studies in South Africa: A statistical profile.* Pretoria, South Africa: The Council on Higher Education.

Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research, 6,* 80-88.

Department of Higher Education and Training. (2013). *Statistics on post-school education and training in South Africa: 2011.* Pretoria, South Africa: Government Printer.

Drew, J. C., Oli, M. W., Rice, K. C., Ardissone, A. N., Galindo-Gonzalez, S., Sacasa, P. R., & Triplett, E. W. (2015). Development of a Distance Education Program by a Land-Grant University Augments the 2-Year To 4-Year STEM Pipeline and Increases Diversity in STEM. *PLoS ONE, 10,* 1-16.

Ehrenberg, R. G., Jakubson, G. H., Groen, J. A., So, E., & Price, J. (2007). Inside the Black Box of Doctoral Education: What Program Characteristics Influence Doctoral Students' Attrition and Graduation Probabilities? *Educational Evaluation and Policy Analysis, 29,* 134-150.

El-Ghoroury, N. H., Galper, D. I., Sawaqdeh, A. B., & Bufka, L. F. (2012). Stress, Coping, and Barriers to Wellness Among Psychology Graduate Students. *Training and Education in Professional Psychology, 6,* 122-134.

Ezebilo, E. E. (2012). Challenges in Postgraduate Studies: Assessments by Doctoral Students in a Swedish University. *Higher Education Studies, 2,* 49-57.

Furlonger, B., & Gencic, E. (2014). Comparing Satisfaction, Life-Stress, Coping and Academic Performance of Counselling Students in On-Campus and Distance Education Learning Environments. *Australian Journal of Guidance and Counselling, 24,* 76-89.

Gardner, S. K. (2007). "I heard it through the grapevine": Doctoral Student Socialization in Chemistry and History. *Higher Education, 54,* 723-740.

Gardner, S.K. (2009). The Development of Doctoral Students: Phases of Challenge and Support. *ASHE Higher Education Report, 34,* 1-126.

Girves, J.E., & Wemmerus, V. (1988). Developing Models of Graduate Student Degree Progress. *Journal of Higher Education, 59,* 163-189.

Golde, C. M. (2000). Should I stay or should I go? Student Descriptions of the Doctoral Attrition Process. *The Review of Higher Education, 23,* 199-227.

Golde, C. M. (2005). The Role of the Department and Discipline in Doctoral Student Attrition: Lessons from Four Departments. *Journal of Higher Education, 76,* 669-700.

Grant-Vallone, E. J., & Ensher, E. A. (2000). Effects of Peer Mentoring on Types of Mentor Support, Program Satisfaction and Graduate Student Stress: A Dyadic Perspective. *Journal of College Student Development, 41,* 637-642.

Gunasingam, N., Burns, K., Edwards, J., Dinh, M., & Walton, M. (2015). Reducing Stress and Burnout in Junior Doctors: The Impact of Debriefing Sessions. *Postgraduate Medical Journal, 91,* 182-187.

Hadjioannou, X., Shelton, N. R., Fu, D., & Dhanarattigannon, J. (2007). The Road to a Doctoral Degree: Co-Travelers Through a Perilous Passage. *College Student Journal, 41,* 160-177.

Herman, C. (2011). Obstacles to Success – Doctoral Student Attrition in South Africa. *Perspectives in Education, 29,* 40-52.

Hudson, S. A., & O'Regan, J. (1994). Stress and the Graduate Psychology Student. *Journal of Clinical Psychology, 50,* 973-977.

Jairam, D., & Kahl, Jr. D. H. (2012). Navigating the Doctoral Experience: The Role of Social Support in Successful Degree Completion. I*nternational Journal of Doctoral Studies, 7,* 311-329.

Jones, M. (2013). Issues in Doctoral Studies - Forty Years of Journal Discussion: Where Have We Been and Where Are We Going? I*nternational Journal of Doctoral Studies, 8,* 83-104.

Kampfe, C. M., Smith, S. M., Manyibe, E. O., Moore, S. F., Sales, A. P., & McAllan, L. (2006). Stressors Experienced by Interns Enrolled in a Master's Rehabilitation Counselor Program Using a Distance Education Model. *Rehabilitation Education, 20,* 201-212.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping.* New York: Springer.

Leidenfrost, B., Strassnig, B., Schabmann, A., Spiel, C., & Carbon, C. C. (2011). Peer Mentoring Styles and Their Contribution to Academic Success Among Mentees: A Person-Oriented Study in Higher Education. *Mentoring & Tutoring: Partnership in Learning, 19,* 347-364.

Lovitts, B. E. (2001). *Leaving the ivory tower.* Lanham, MD: Rowmand & Littlefield.

Lovitts, B. E. & Nelson, C. (2000). The Hidden Crisis in Graduate Education: Attrition from Ph.D. Programs. *Academe, 86,* 44-50.

Maunganidze, L., Sodi, T., Mudhovozi, P., Mberi, E., & Mutasa, J. (2010). Academic Counseling for Graduate Research Students with Distance Learning. *Journal of Psychology in Africa, 20,* 95-100.

Mazzola, J. J., Walker, E. J., Shockley, K. M., & Spector, P. E. (2011). Examining Stress in Graduate Assistants: Combining Qualitative and Quantitative Survey Methods. *Journal of Mixed Methods Research, 5,* 198-211.

Mechanic, D. (1962). *Students under stress: A study of the social psychology of adaptation.* Oxford, England: Free Press Glencoe.

Muirhead, V., & Locker, D. (2007). Canadian Dental Students' Perceptions of Stress. *Professional Issues, 73,* 323.

Myers, S. B., Sweeney, A. C., Popick, V., Wesley, K., Bordfeld, A., & Fingerhut, R. (2012). Self-Care Practices and Perceived Stress Levels Among Psychology Graduate Students. *Training and Education in Professional Psychology, 6,* 55-66.

Nelson, N. G., Dell'Oliver, C., Koch, C., & Buckler, R. (2001). Stress, Coping, and Success Among Graduate Students in Clinical Psychology. *Psychological Reports, 88,* 759-767.

Pillay, A. L., & Ngcobo, H. S. (2010). Sources of Stress and Support Among Rural-Based First-Year University Students: An Exploratory Study. *South African Journal of Psychology, 40,* 234-240.

Seyle, H. (1978). *The stress of life* (rev. ed.). Oxford: McGraw-Hill.

Soares, L. M., Prestridge, S. K., & Soares, A. T. (1992). Gender and Temporal Differences in Identifying Sources of Stress. *Current Psychology: Research & Reviews, 11,* 59-68.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks. CA: Sage.

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