

Advancing Women in Leadership Vol. 31, pp. 144-152, 2011
Available online at http://advancingwomen.com/awl/awl_wordpress/
ISSN 1093-7099

Full Length Research Paper

An Analysis of Stress Levels of Female Graduate Students in an Online Program

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Accepted June 13, 2011

This quantitative study was designed to investigate the differences in stressors and demographic variables of women enrolled in an online master's degree program in education. Participants were women with multiple personal, career, and family responsibilities. Survey data and demographic data were used to identify which stressors were most frequently experienced and whether there was a significant difference between stress scale scores and demographic variables. Seven hundred and fifty women completed the Social Readjustment Rating Scale – Revised (Hobson, 1998) and non-parametric tests were used to analyze the data. Findings indicated the stressors most common to female graduate students were related to family, finances, and health-related issues. The results also suggested there were significant differences among the demographic variables of age, ethnicity, program start date, number of courses completed, and marital status.

For institutions of higher education these findings may offer insight for incorporating student services such as learning communities, flexible financing options, and accelerated programs to allow for increased retention of women in online programs. For women seeking to enroll into an online graduate program, this study may provide insight into assessing their resources for successful completion of an online master's degree.

Keywords: female, women, stressors, stress, online, graduate, education, masters

Introduction

Between 1998 and 2008, there was a 50% increase in the number of master's degrees earned by women (IES National Center for Education Statistics, 2009), however, primarily due to financial constraints, lack of affordable and flexible child care, and lack of health insurance, female graduate students with children are the single most at-risk population for attrition from their on-campus, full-time graduate programs (Anderson, 1998; Lynch, 2008). According to the IES National Center for Education Statistics (2009), in 2006-07, women earned 61% of

master's degrees and, for the first time, females and males earned an equal number of doctoral degrees. Based on these data, it appears that students of both genders were completing degrees at an equitable rate; however, women have been faced with different challenges than men in their pursuit of higher education (Devos, Viera, Diaz, & Dunn, 2007; Grenier & Burke, 2008; Heenan, 2002; Johnson & Robson, 1999; Lynch, 2008; Mallinckrodt & Leong, 1992; Scott et al., 1998; Sullivan, 2001; Younes & Asay, 1998). With the rapid development of distance learning opportunities, women who are balancing

multiple responsibilities such as careers, families, and community obligations that might have previously impeded their pursuit of higher education, are being provided the option to complete classes online in the comfort of their own home, on their own schedule (Muller, 2008).

Background of the Problem

In investigating how women have negotiated their various roles, including taking on the additional responsibility of being a student, researchers have found that women experienced a great deal of conflict and stress in balancing their status as a student with being primarily committed to their family and children (Giancola, Grawitch, & Borchert, 2009; Grenier & Burke, 2008; Johnson, Schwartz & Bower, 2000, Mallinckrodt & Leong, 1992; Younes & Asay, 1998). One study found that women who took on additional roles without delegating other responsibilities were more likely to experience strain on relationships, health and overall functioning (Home, 1997). Giancola et al. (2009) discussed how the accumulation of family, school and work demands could create stress and role strain for female students while women from low income households experienced the greatest levels of stress (Home, 1997; McGrath & Burkhart, 1983).

Distance education has opened doors for many who were previously unable to access on-campus programs, such as working mothers, single mothers or caregivers to multiple generations (Heenan, 2002; Sullivan, 2001). However, some women motivated to return to school have found it difficult to persist through to graduation due to issues such as lack of family or employer support, rather than due to inherent personality characteristics (Scott, Burns, & Cooney, 1998).

Statement of the Problem

Muller (2008) posited that similar to their on-campus counterparts, the primary impediment for female online students was the challenge of juggling multiple roles and responsibilities, in addition to a perceived lack of institutional support and involvement. Several studies corroborated the findings of Mallinckrodt and Leong (1992) that female graduate students experienced significantly less support from their families, employers, and academic programs, as compared to their male counterparts (Park & Hee Jun, 2009; Scott et al., 1998). These findings, taken with the increased likelihood that women reported more financial and relationship strain, have led researchers to assert that women experienced more challenges in balancing multiple roles, particularly with the additional responsibilities of being a graduate student (Gouthro, 2007; Mallinckrodt & Leong, 1992). However, one gap in the research literature appears to be the lack of exploration as to the differences in the demographics of female online graduate students who manage stressful life experiences immediately preceding or during their time in graduate school.

Purpose of the Study and Research Questions

The purpose of this study was to investigate the differences in stressors and demographic variables of female graduate students enrolled in an online distance education graduate program. This study was guided by the following research questions:

1. What stressors were experienced most frequently by female graduate students?
2. Was there a difference between demographic variables and the total score on the Social Readjustment Rating Scale - Revised?

This study was an exploratory investigation leading to further work in identifying female graduate students who had experienced a relatively high level of perceived stress for further qualitative research exploring their experiences with stressors and support systems while enrolled in an online graduate program.

Theoretical Framework

As a framework for the study, McClusky's Theory of Margin (1963) and post-structural feminist pedagogy were used to investigate female graduate students' management of stressful life events and responsibilities. McClusky (1963) developed his theory of margin in the early 1960's as he studied adult learning and how life responsibilities changed as people moved through different stages of the lifespan. He analyzed the impact of increased demands on adult learners' resources over time and his theory of margin examined how people balanced their resources against the demands of their time and energy to determine whether they had the capacity to take on additional endeavors such as committing to a graduate program. In his theory, McClusky defined Margin as the difference between a person's Load (responsibilities) and their Power (resources). Both Power and Load had external and internal components encompassing one's psychological strengths and weaknesses, as well as physical and time commitments or freedom. The more margin that was available to a person, the more opportunities that could be pursued, including furthering one's education. However, one criticism of the theory of margin was that there was no examination of how the stressors may create different levels of load or power (Home & Hinds, 2000). Through McClusky's framework, this study examined whether some particular subset of female online learners experienced more challenges balancing Load and Power than other women in the study.

Tisdell (1998) discussed post-structural feminist pedagogy and examined similar psychological and sociological issues as McClusky (1963), but addressed the issues from a feminist perspective by providing focus on the additional influences of knowledge, privilege, and power on women's identity development and pursuit of equity (English, 2006). From a post-structural feminist perspective, women who were attempting to balance many roles, and trying to seek educational and career opportunities, were faced with

additional difficulties in managing their responsibilities within a society that perpetuated unequal opportunities based not only on gender, but on class, race, sexual orientation, and the balance of power (Gouthro, 2007; Tisdell, 1998). By acknowledging factors other than gender, this study attempts to address the critical complexity of women as they struggle to manage the demands of their lives in addition to being successful in an online graduate program.

Literature Review

The review of literature examined the impact of stressors and multiple roles of female graduate students' persistence to degree completion. Additionally, the effects of demographic variables on adult learners were investigated and a brief assessment of the online format for graduate education was reviewed.

Female Students' Managing Stressors

Muller (2008) posited that even within online programs, the primary impediment for female students was the challenge of juggling multiple roles and responsibilities, in addition to a perceived lack of institutional support and involvement. Several studies have corroborated the findings of Mallinckrodt and Leong (1992) that female graduate students experienced significantly less support from their families, employers, and academic programs, as compared to their male counterparts (Park & Choi, 2009; Scott et al., 1998). These findings, taken with the increased likelihood that women reported more financial and relationship strain, led the researchers to assert that women experienced more challenges in balancing multiple roles, particularly with the additional responsibilities of being a graduate student (Gouthro, 2007; Mallinckrodt & Leong, 1992).

Mallinckrodt and Leong (1992) found that women in graduate programs experienced more stressors, role strain in dealing with their family obligations, less social support, and more depression than their male counterparts. Several researchers have determined that for most female students, the effect of managing multiple roles and additional stressors was determined largely by the student's perception of the enormity of the task (Giancola, Grawitch, & Borchert, 2009; Glynn, Maclean, Forte, & Cohen, 2009; Hammer, Grigsby, & Woods, 1998; Home, 1997; Lawson & Fuehrer, 1989). The more stressors and conflicts experienced by students, and the more students viewed these as unmanageable or negative, the lower their overall life satisfaction and the more likely they were to use maladaptive coping mechanisms (Giancola et al., 2009; McGrath & Burkhart, 1983). Barnett (2004) discussed the notion that directly related to the increase in post-secondary educational achievement of women was the increase in married women, with children, returning to the workforce. The researcher predicted that it was likely that women would continue to manage multiple roles such as employee, mother, wife, and student.

According to Johnson et al. (2000), many adult students were often already managing a job and family when they decided to return to school and found it extremely stressful to balance schooling with parenting, which could exacerbate attrition and low completion rates for female students. When women took on the additional role of student, there was an expectation that they would accommodate the new role without any reduction in the load of the responsibilities as mother, employee or wife (Mallinckrodt & Leong, 1992). In addition, stressful life events, such as divorce or loss of a job, became the instigator for adults to seek furthering their education (Johnson, Schwartz, & Bower, 2000).

Several researchers studied the tensions and conflict surrounding women who were embracing both motherhood and academics (Devos, Viera, Diaz, & Dunn, 2007; Grenier & Burke, 2008; Lynch, 2008; Younes & Asay, 1998). Younes and Asay (1998) found that women felt stuck in a paradox with an equal desire to be a good parent, as well as a focused student. This was supported by Lynch's (2008) study of graduate student mothers who struggled to balance the demands of two (or more) roles that required a large, and sometimes conflicting, emotional and time commitment. These issues created feelings of emotional dissonance and stress in attempting to succeed in both roles simultaneously. Grenier and Burke (2008), in their co-generative ethnography regarding the authors' experiences with pregnancy and graduate work, identified stress as a major theme throughout their narratives, and the researchers' role strain, between being pregnant or being a new mother, and maintaining an expected level of productivity at school, as a primary source of guilt and stress. Home (1997) found that the perception of role strain and demands was a better predictor of stress than the actual responsibilities of the varying tasks. At some critical point, multiple responsibilities became overwhelming and perception of role overload created a level of stress that was negatively associated with mental health functioning. Glynn et al. (2009) found that women who maintained a perception of significant role overload experienced lower mental health functioning. In contrast, an assessment of women who were managing multiple roles indicated a moderate level of responsibility could be beneficial to women's mental health status (Barnett, 2004).

Additionally, Younes and Asay (1998) found that women who incorporated the responsibility of graduate work to their load of responsibilities reported feeling empowered and capable. In addition, a higher level of income, being employed, and the perception of positive role quality as a parent, spouse or friend positively contributed to women's mental health status. Giancola et al. (2009) found that students who viewed stressors as challenges to overcome had a more positive outlook, better adaptation skills and felt a higher level of general well-being. Bachay and Cingel (1999) concurred with Giancola and colleagues that some women had the ability to reframe their experiences, even adversity such as death and divorce, to view them as developmental opportunities.

These findings suggest that busy women were more likely to have better mental health, but there was a limit to the number of tasks that could be undertaken. Barnett (2004) pointed out that many clinicians have ignored the positive mental health effect for women working outside the home and the author ultimately found the idea of women's multiple roles having a negative impact on women's health was largely a myth.

Giancola et al. (2009) assessed the levels of stress of adult students as they managed multiple roles in order to create a working model of conflict, appraisal and coping. Specifically, these researchers examined inter-role conflict between family, school, and work. Giancola and colleagues found that adult students ranked workplace demands as the greatest source of stress, with life stressors in the middle and school stressors as producing the least amount of stress. They suggested that for adult students in particular, work requirements might be less negotiable than family and social commitments and role strain was a significant influence on students' levels of stress.

Additionally, students who did not have family support in pursuing their educational goals felt the most inter-role conflict. Nevill and Super (1986) outlined three criteria for assessing the importance of a particular role: one's emotional commitment to a role, the amount of time invested, and a deeper understanding through experience in the role. While Nevill and Super addressed career choices over the lifespan, they indicated that women continued to take on more responsibility within the home and child rearing and, over the course of a lifetime, invested fewer resources in work outside of the home (1986). For female students in particular, Home (1997) found that students who reported multiple role duties experienced a higher level of stress and role strain than students with fewer responsibilities.

Demographic Variables of Female Graduate Students

Recent research has indicated that individual demographic traits such as gender, ethnicity and age had no significant impact on the persistence of adult online learners (Park & Hee Jun, 2009). In fact, rather than inherent personal characteristics, Park and Hee Jun (2009) supported earlier research by Scott et al. (1998) that indicated external factors, such as lack of family or employer support, were the primary reasons adult learners did not persist in their education. Home (1998) also supported these findings by indicating that perhaps women did not adequately predict the amount of time required to complete all coursework requirements.

In assessing factors other than gender, Perna (2004) discovered that, all factors other than race being equal, Black women were more likely than White women to enroll in graduate education. Bachay and Cingel (1999) stated that minority women who were successfully pursuing graduate education had a strong sense of competence and belief in their own abilities. In addition, a positive outlook on life and their religious faith also

contributed to their persistence in working toward a graduate degree.

Morales' (2008) study indicated that it was impossible to completely separate gender and ethnicity when exploring the two aspects of a student's identity. Other findings, such as those of Calicchia and Graham (2006), indicated that spirituality and the social resources of graduate students have a limited impact on buffering stress; however, they reported that specific stress factors, such as financial stress, are inversely correlated with specific domains of support, such as family income.

Several researchers also found women with lower income experienced higher levels of stress, and household income was the greatest predictor of the level of stress experienced by female students (Home, 1997; McGrath & Burkhart, 1983). Women with children under the age of 13 experienced more role strain while women with more than two children experienced less stress than their counterparts with fewer children (Gerstel & Gallagher, 1993; Home, 1998).

There were complex and varied reasons why women did not persist in graduate education, including family responsibilities and economic reasons (Heenan, 2002). Mature women returning to school shared the same level of motivation; however, it was discovered that complicated life situations were the primary difference between those who persisted to graduation and those who did not (Scott, Burns, & Cooney, 1998). Research has indicated that women who do not successfully persist in online education usually leave programs for family, health or financial reasons (Johnson et al., 2000; Park & Hee Jun, 2009).

Women's Experiences with the Online Format

During the period of time from 1998-2008 there was a 50% increase in women's enrollment into graduate school (IES National Center for Education Statistics, 2009) and online education was generating heated discussions within higher education. While colleges and universities focused on the implementation of online programs, women were finding that online learning was a viable option for pursuing a degree while managing multiple life roles (Price, 2006; Rovai & Baker, 2005; The College of 2020, 2009).

Benefits have been found in using online methods of delivery for educational content including flexibility, anonymity, and opportunity for engagement with other students (Price, 2006; Sullivan, 2001; Sullivan, 2002). Students in Sullivan's (2002) study indicated that they particularly liked being involved in asynchronous discussions where everyone had equal opportunity to participate and there was a lack of bias based on age, physical characteristics, or ethnicity. The feeling of anonymity gave some students a sense of freedom that they may not have felt within a classroom setting.

In addition, Lawson and Fuehrer (1989) investigated the relationships between specific stressors and the types and sources of support that aided in lessening the stress of first-year graduate students. They found that the most highly stressed students benefitted the most from perceived social support. Students who were most highly stressed also stated that they were most satisfied with their first-year graduate experience, indicating that stress may be a necessary component of graduate school, as long as students identified that there were adequate resources to manage the increased pressure.

MacKinnon-Slaney (1994) proposed the Adult Persistence in Learning Model (APIL) as a guide for developing support services for adult learners in higher education. Viewed as a tool for retention of adult learners, the author incorporated the stresses and concerns of traditional college students with the additional responsibilities of managing work and family life. The researcher identified a three-fold diagnostic approach with attention given to personal/self efficacy issues, learning/academic issues and environmental/community issues that could be supported through individual and group counseling services offered within the higher education institution.

Methodology

In measuring a subjective phenomenon such as reported levels of stress, it was important to utilize an instrument that reflected common stressors. The 51 items on the Social Readjustment Rating Scale – Revised (SRRS-R) (Hobson, Kamen, Szostek, Nethercut, Tiedmann, & Wojnarowicz, 1998) encompassed five themes from which stress arose, leading with death and dying, healthcare issues, crime and involvement with the criminal justice system, financial/economic issues, and family related issues (Hobson et al., 1998). These themes are reflected in previous research indicating that women who do not successfully persist in online education usually leave programs for family, health or financial reasons (Johnson et al., 2000; Park & Hee Jun, 2009).

Although gender had a statistically significant impact on how life events were perceived and there was support of the contamination hypothesis, neither of these affected the practical use of the SRRS-R instrument to assess levels of stress (Hobson et al., 1998; Scully, Tosi, & Banning, 2000). In evaluating levels of stress in female students, Gadzella and Carvalho (2006) reported that women who identified their stress at a particular level, either mild, moderate or severe, were found to mirror their self report by scoring at the same level on the Student-Life Stress Inventory, indicating that women's perceptions of their stress accurately represented their lived experiences with stressors.

Population

Participants for this study were purposely selected from a database of currently enrolled graduate students pursuing a master's of education degree through an online program at a university in south Texas. The students in this program were

pursuing advanced degrees in Educational Administration, Teacher Leadership, or Educational Technology Leadership, providing opportunities for advancement to positions of leadership within the educational setting. The researchers sent 2254 female graduate students an email with a link to complete the Social Readjustment Rating Scale – Revised (Hobson et al., 1998). Seven hundred and fifty students participated in the survey - a 33% response rate, and 15 were removed from the sample for not answering any questions. The respondents to the survey ranged in age from under 25 to over 56 years old and came from a variety of ethnic backgrounds, though the majority were Caucasian (n=561). Participants lived in many parts of the United States, but most lived in the state of Texas, with the largest concentration in Southeast Texas (n=234). The typical woman who completed the survey was married (n=545), has taught in public education anywhere from 5 to 20 years (n=508), and the majority of women have been enrolled in the master's program for 18 months or less (n=508), though the number of courses they have completed was equally distributed and ranged from 1-12. The number of respondents was sufficient to meet the minimum required for a given population (Bartlett, Kotrlik, & Higgins, 2001). A post hoc power analysis was conducted to assess power. Using an acceptable small effect size of .1 (Cohen, 1992), the sample of 750, and an alpha at .05, the power was .84.

Data Collection

Data were collected by using the secure website, www.surveymonkey.com, through which participants volunteered to complete the Social Readjustment Rating Scale-Revised (Hobson, et al., 1998) and provide their demographic information.

Instrumentation. The original Social Readjustment Rating Scale (SRRS) (Holmes & Rahe, 1967) has been used in psychology and counseling to assess levels of stress (Turner & Wheaton, 1995) and in medicine to predict the likelihood of stress-related health outcomes (Scully et al., 2000). The original SRRS has been criticized for not taking into account the nature of the events, whether the event was in the person's control, whether the stressor could be considered a positive life event versus a negative experience, and how that difference may impact the extent of the stress on a participant (Hobson et al., 1998; Scully et al., 2000). Additionally, the contamination hypothesis alleged that some life events on the original SRRS list were actually effects of stress (i.e., change in eating habits) and were not stressful events in themselves (Scully et al., 2000). McGrath and Burkhart (1983) reviewed the original SRRS and stated that many of the items on the scale were skewed toward people in the midst of establishing jobs, families and financial stability. These findings indicated that the scale may not appropriately recognize stressors in age groups in which creating a career and beginning a family were not priorities.

The Social Readjustment Rating Scale – Revised was created by Hobson et al. (1998) to address additional criticism surrounding the original sample size, the weighting of the life events, confounding variables and the subjective interpretation of the life events. Several studies found that events that had occurred in the preceding twelve months had a greater impact on overall stress levels, indicating that the more recent an event, the higher the level of stress, as well as highlighting the possibility that the effects of stressful events diminished over time. The researchers found the instrument to be a practical and valid tool for measuring levels of readjustment after experiencing stressful events (McGrath & Burkhart, 1983; Scully et al., 2000).

The SRRS-R contains 51 items or events that have been indicated to create stress and a weighted measure of readjustment. For example, the event “death of a spouse/mate” has a weighted score of 87 while the event “getting married” has a score of 43. By indicating which of the events have been experienced within the past year, the student then received a total score that indicates their relative level of stress (Hobson, et al., 1998).

Data Analysis

In assessing the data to ensure that it met the assumptions for parametric analysis, it was observed that data were positively skewed, violating one of the assumptions for *t*-tests and ANOVA. Although the *t*-test and ANOVA are considered to be robust tests despite minor violations of assumptions (McMillan & Schumacher, 2006), it was determined that the use of non-parametric tests for analysis, specifically the Kruskal-Wallis test and the Mann Whitney *U* test would provide the most conservative analysis. The Mann-Whitney with Bonferroni correction (Pallant, 2007) was also used for post-hoc analysis when needed. The default alpha level was .05.

Findings

The findings indicated that female online graduate students experienced stress and that there are statistically significant differences in stress levels based on demographic variables. The findings are reported by research question. No significant differences were found between total score on the SRRS-R and the student’s geographic area or number of years of teaching experience.

Research Question 1

The first research question investigated what stressors were experienced most frequently by female graduate students. The five stressors that were most frequently experienced in the past twelve months by the participants were: changing work responsibilities (n=354), beginning/ceasing formal education (n=343), financial difficulties (n=304), illness/injury to family member (n=253), and changing positions, transfer/promotion at work (n=207). These findings reinforce previous research which stated that women tended to leave graduate school for

family, health or financial reasons (Heenan, 2002; Johnson et al., 2000; Park & Hee Jun, 2009) and that women experienced a great deal of role conflict and stress due to the differing demands of work, home, and school (Giancola et al., 2009).

Research Question 2

An analysis was conducted of the demographic variables of the participants, which included age, ethnicity, geographic area, and marital status, and an analysis of professional and programmatic variables included years of teaching experience, program start date, and number of courses completed. Significant differences were found in the categories of age, ethnicity, program start date, number of courses completed, and marital status.

Age. The Kruskal-Wallis analysis found a statistically significant difference in total scores on the SRRS-R across the five age groups, $X^2(4, n = 733) = 11.9, p = .018$. To determine which groups were significantly different from each other, the Mann-Whitney post-hoc test indicated that the oldest group of students (n=18) scored significantly higher ($Md=312$) on the SRRS-R scale than students under 25 years old (n=34) ($Md=124$), $z=-2.24, p=.02, r=-.31$. Cohen (1992) defined small effect size as $r = 0.1-0.23$; medium as, $r = 0.24-0.36$; and large as, $r = 0.37$ or larger. Using the Bonferroni correction when comparing the oldest age group to the youngest age group, it was found that older women experienced significantly higher stress levels than the youngest group of women ($p<.25$).

Ethnicity. According to the Kruskal-Wallis Test, total stress scale score differences between ethnic groups were also found to be statistically significant, $X^2(5, n=734) = 14.63, p=.012$. Based on the post-hoc Mann Whitney test with Bonferroni correction ($p<.25$), significant differences were found between scores for African American students ($Md=287$) and Caucasian students ($Md=202$) $z=-3.046, p=.002, r=-.12$. In other words, African American students reported higher stress levels than Caucasian students.

Geographic Area. There were no significant differences found between the geographic locations of the participants.

Marital Status. A Mann-Whitney *U* test revealed a significant difference in total stress scale scores with married women attaining a lower median score ($Md=190, n=545$) than single women ($Md=275, n=183$), $U=38873, z= -4.47, p=.00, r=-.17$, indicating that married students experience a lower total level of stress than their single counterparts.

Years of Teaching Experience. No statistically significant differences were found based on the number of years the participants had been teaching.

Program Start Date. Statistically significant differences were found for students based on when they began

the master's program. The Kruskal-Wallis test indicated a significant difference between groups, $X^2(8, n=734)=38.89$, $p=.00$, and the Mann-Whitney post-hoc analysis, with a Bonferroni adjustment ($p<.25$) indicated that those who had been enrolled in the program longest ($n=3$) had a higher median stress scale score ($Md=398$) than students who had most recently started the online masters program ($n=55$) ($Md=160$) $z=-1.422$, $p=.16$, $r=-.19$.

Number of Courses Completed. Number of courses completed produced statistically significant findings similar to program start date when using identical analyses, $X^2(3, n=733)=27.19$, $p=.00$. The Kruskal-Wallis test and the Mann-Whitney post-hoc analysis, with a Bonferroni adjustment ($p<.25$) indicated that students who had completed the highest number of courses ($n=181$) had a higher median SRRS-R score ($Md=259$), while students who had completed fewer courses ($n=175$) exhibited a lower median stress scale score ($Md=164$) $z=-4.789$, $p=.00$, $r=-.25$, indicating a significant difference in levels of stress.

Discussion and Implications

As more women enter into and complete graduate education programs while managing multiple responsibilities, institutions of higher education who are interested in retaining these students need to be aware of the issues facing this growing population. As found in this study, the most frequently experienced stressors, which were - changing work responsibilities, beginning/ceasing formal education, financial difficulties, illness/injury to family member, and changing positions/transfer/promotion at work - align with other studies that mirror the complex lives of working adult students with families, and the complicated reasons that muddle the issue of retention of female students in graduate programs (Johnson et al., 2000; Park & Hee Jun, 2009). Based on the findings from research question 2, there are significant differences in the total stress scale scores on the SRRS-R based on age, ethnicity, length of time of enrollment in the program, and the number of courses completed.

The findings of this study support previous research on women's perceived stress and their increasing role conflict as they take on the added responsibility of graduate school. Based on McClusky's Theory of Margin (1963), it appears women who begin school with a sufficient amount of resources, may become increasingly strained the longer it takes to degree completion. Women who are considering graduate school may be advised to assess their levels of margin and their ability to manage the demands of a graduate program in addition to commitments to work, family, and community.

Although Park and Hee Jun (2009) found that individual demographic traits such as gender, ethnicity and age had no significant impact on the persistence of adult online learners, this study found that female students who are single, older, and of African American heritage experience the highest level of

stress while those who are married, younger, and Caucasian experience a lower level of stress while attending graduate school. Based on Tisdell's (1998) post structural feminist pedagogy, privilege and power are influential in women's pursuit of equity. This study reflects post structural feminist ideas that marginalized groups experience increased difficulty in reaching their educational goals by virtue of the struggles inherent in race, age, socioeconomic status, gender, and other variables (Tisdell, 1998). It may be that students who fall within these demographic guidelines, and experience a higher level of stress, might not complete their graduate degree. In addition, students with spouses might find their positive partnerships to be vital in their progress toward a graduate degree.

Institutions of higher education could evaluate their institutional and programmatic support for online female graduate students and consider establishing learning communities, mentoring, and flexible financing options in order to attract and retain female students. Colleges and universities might also consider that accelerated graduate programs leading to shorter time-to-degree may alleviate some of the stress experienced by female online graduate students. In addition, a model such as the MacKinnon-Slaney Adult Persistence in Learning Model (1994) may provide a valuable structure of student services for adult learners that incorporates the understanding of the multiple roles being balanced by many female graduate students.

Conclusion

This study supported the findings of previous researchers that adult learners have needs that are varied and complex (Gouthro, 2007; Mallinckrodt & Leong, 1992). The top stressors experienced by female online graduate students are related to health, family, and finance, supporting research by Johnson et al. (2000) and Park & Hee Jun (2009) in which the complicated issues surrounding this population of students were examined. Significant differences in levels of stress experienced by female online graduate students based on age, ethnicity, length of time to degree, and total number of courses completed were also discovered through this research.

Although this study does not explore how the online format impacts persistence, further research could examine the specific effects of online learning on women's levels of stress. Additional studies could examine the impact of stress on persistence to degree since there were statistically significant findings based on several demographic and programmatic factors.

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