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Motherhood, Balance, and Health Behaviors of Academic Women

Confronted with long work hours and "publish-or-perish" pressures, academic mothers need to balance their multiple roles and practice health-promoting behaviors in order to be "good mothers." This study examined the relationship among motherhood ideology, role balance, and health-promoting behaviors of 69 teaching faculty in New England with children under age fourteen. The struggle to balance multiple roles and a woman's maternal role were considered immediate competing demands, as they deal with time-sensitive activities that may inhibit women's participation in health-promoting behaviors. Significant relationships were found among the independent variables and health-promoting behaviors, particularly physical activity, stress management and sleep. The more intensive a woman's motherhood ideology, the more role imbalance she reported. Further, women experiencing more balanced roles reported greater participation in health-promoting behaviors. The results support the need for institutions of higher education to facilitate the integration of work and family through policies, practices, and programs, especially those that consider the experiences and needs of working mothers.

Having a baby changes everything, especially for women. In particular, academic mothers often add babies to their complicated, yet skillfully managed myriad of publish-or-perish pressures associated with the demands of the tenure-track positions many child-bearing women occupy. From this perspective, it is babies that tip the scale of balance for many mothers, although as 'good mothers' they would never admit that it results from their typically long awaited and highly coveted children. In an attempt to regain some semblance of balance, moms frequently cut back on time engaged in regular self-care or health-promoting behaviors, like physical activity and stress management, which can have serious health consequences. According to the Centers for Disease Control and

Prevention, the leading causes of death in females in the United States, 2004 are (1) heart disease, (2) cancer, (3) stroke, (4) chronic lower respiratory diseases, (5) Alzheimer's disease, (6) unintentional injuries, (7) diabetes mellitus, (8) pneumonia and influenza, (9) kidney disease, and (10) septicemia (CDC, 2004). Fifty percent of these ten causes of death are a result of unhealthy lifestyles (NWHIC, 1999). It is for this reason, that I sought evidence to support the hypothesis that academic mothers neglect their self-care in an attempt to maintain balance among their roles, especially their motherhood and professoriate roles. For the purposes of this study, sleep, physical activity, nutritional intake, stress management, and utilization of health care were examined, since they were linked to the aforementioned ten leading causes of death and disability for women.

Mary Ann Mason and Mark Goulden's (2004) "leaky pipeline" shows that "babies do matter" to mothers in academia when it comes to tenure and promotion. Although several factors may be lost in these women's struggle for professional perseverance, few if any studies have considered the affect on academic women's health-promoting behaviors. Despite the acknowledgement within the literature that women cutback on self-care (Adams, Bowden, Humphrey, and McAdams, 2000), including sleep, leisure, relaxation or self-fulfillment (Milkie and Peltola, 1999), reduce work hours, or make changes in their careers (Fothergill and Feltey, 2003), little research has been conducted on the health behavior and work experiences of mothers in the academy. To fill this gap, this study extends previous research on the topic by investigating associations among motherhood ideology, role balance and health-promoting behaviors of academic mothers with children under age fourteen by answering four research questions: Does motherhood ideology relate to health-promoting behaviors of academic mothers? Does role balance relate to health-promoting behaviors of academic mothers? What is the relationship between motherhood ideology and role balance of academic mothers? Taken together, do motherhood ideology and role balance explain more variance in their relationship to health-promoting behaviors of academic mothers than each variable on its own?

In this paper, I present the results from a survey of 69 women who are full-time tenured or tenure-track university faculty members in the Northeastern region of the United States. Then, I discuss the relative literature on academic motherhood, role balance, and health behaviors, followed by the findings. Finally, I conclude with recommendations and directions for future research and programming around mothers in the academy.

Literature review

Approximately 31 percent of the women filling the 37 percent of faculty positions ("Unequal Progress," 2003) are mothers (Perna, 2001). Further, fourteen percent of academic mothers in public, liberal arts universities have children under age 14 (Vancour, 2005). Motherhood has been identified in studies as the major hurdle faced by women faculty in meeting performance

standards (Drago and Colbeck, 2003). Since advancement in the academic arena tends to be incompatible with family commitments, many women often are required to sacrifice family to meet promotion and tenure criteria. Further, the structure of university life necessitates long hours that exceed the time constraints of the traditional nine-to-five workday, multitasking to complete the various tasks associated with an academic position, performing a multitude of service work, generating research and publications, and creating a perfect teaching record that demonstrates creativity, scholarship, and innovation. This is synonymous with the ideal worker norm, and contradictory to the motherhood norm, which involves raising one's children and performing most of the child care and household responsibilities (Williams, 2000). "Nowhere is it more dramatically illustrated [that mothers adjust their lives to accommodate the needs of their children, including forgoing status, income, advancement, and independence] than in the experience of the nation's most educated women—the ones who had the best shot at having it all" (Crittenden, 2001: 27). Women working in higher education may feel excessive pressures to be superwomen, the perfect mom and the successful career woman. They are striving to manage multiple roles in a male-oriented and dominated arena, at a time when financial constraints are a reality and opportunities for advancement are scarce (Rosen, 1999).

The responsibilities of an academic career coupled with the demands of motherhood in the twenty-first century are the principal competitors for women's time, energy and resources. However, researchers have suggested that care giving can impede women's well-being and health-promoting behaviors, specifically eating a balanced diet and obtaining medical care (Adams et al., 2000; Sisk, 2000). Caregivers typically lack time and opportunity for exercise, and other health-promoting behaviors. Further, they are dependent upon immediate competing demands, over which people usually have low control (Adams et al., 2000). Gayle Acton and Porntip Malathum (2000) examined competing work and family demands, and found that employees reported fewer health-promoting or self-care behaviors. Similarly, Lorraine Walker and Misha Best (1991) conducted a study, which compared mothers with infants who were employed full-time to their unemployed counterparts. They found that employed mothers reported significantly greater stress and less healthy lifestyles than unemployed mothers. The most popular stressors for employed mothers were related to "returning to work, lack of time, fatigue, overload, and infant illness" (Walker and Best, 1991: 84). They expected these results were due to mothers' perceptions of their lives becoming less controllable, predictable, and leisurely. Further, the results of their study indicate that mothers of infants employed full-time "may adopt a pattern of self-neglect to manage multiple demands" (85). Interestingly, they did not find a difference in women's evaluations of their maternal roles, indicating that both employed and unemployed mothers gave priority to that role. Walker and Best (1991) concluded that employed mothers preserved their self-images at the expense of their health.

Working women engage in multiple roles, however, there is a scarcity of research on balancing roles (Marks, Houston, Johnson and MacDermid, 2001). According to Stephen Marks and Shelley MacDermid (1996), role balance is a cognitive-affective orientation that reflects balance across roles. However, this type of balance seems difficult for mothers to achieve, since they often are engaged in roles that are not in agreement (i.e., being interrupted at work to care for sick children) and fulfillment of some roles may be associated with greater distress than other roles.

Three studies specifically examined the role balance of working mothers (Marks et al., 2001; Marks and MacDermid, 1996; Milkie and Peltola, 1999). These studies provided a foundation from which deeper exploration could occur. In their study involving a sample of employed mothers, Marks and MacDermid (1996) used a single item to assess women's role balance. They found that those who reported more role balance were very similar to those who reported less balance. They also found that it did not matter how demanding employed mothers' roles were, which suggests that role balance may be related to the number of roles (Milkie and Peltola, 1999), or the combination of these roles (Tiedje, Wortman, Downey, Emmons, Biernat, and Lang, 1990), supporting the need for further analysis. Similarly, Marks et al. (2001) examined 80 parents' role balance across several variables, including paid work, parenthood, childcare, housework, marriage, and leisure activity. They found that women who engaged in more roles experienced greater role balance (Marks and MacDermid, 1996). Likewise, Melissa Milkie and Pia Peltola's (1999) study of a national sample showed that for women working full-time, having preschool children and school-aged children (6-12 years of age), negatively affected their work-family balance. The authors attributed this to the demands of childcare arrangements and the cultural expectations of motherhood. Since, they believe women's strongest commitment and devotion is to their role as mothers, cultural expectations would have a powerful effect on women's beliefs about mothering as well as their ability to manage multiple roles.

Methodology

Sampling and Data Collection

This study used a cross-sectional survey design to better understand the relationship of academic women's expectations of motherhood and role balance to their health-promoting behaviors (sleep, physical activity, nutritional intake, stress management, and utilization of health care). Women holding full-time teaching faculty positions at four public liberal arts universities in New England with at least one child under 14 years of age were invited to participate in this study. In April 2004, a 96-item questionnaire was sent through an interoffice mailing system to female teaching faculty. After multiple follow-ups, 69 academic mothers returned completed questionnaires representing one hundred percent participation rate.

Measures

Motherhood Ideology. The Motherhood Ideology Scale was developed to measure variation in motherhood ideology as experienced by professional mothers working in a higher education setting. Table 1 shows the twenty-four items that were generated from concepts in the academic and parenting literature and developed into a four-point Likert scale. Respondents indicated the extent to which they agreed or disagreed with these items. Each item was drawn from authoritative literature to support face validity. A pilot study was conducted to seek evidence of reliability. The Motherhood Ideology Scale attained a Cronbach's alpha of .73 in the pilot study. Each item was drawn from authoritative literature to support face validity.

Table 1: Descriptive Statistics for the Motherhood Ideology Items

Motherhood Ideology Items	Mean	SD
1. My children benefit because I work.	3.16	.673
2. I wish I could spend more time each day with my children.	3.19	.762
3. My career is important, but my role as a mother comes first.	3.53	.627
4. My children need me more hours than I am available.	2.93	.799
5. I strive to give 100 percent of myself to my children and to my career.	3.35	.772
6. I'd feel more comfortable not meeting my job expectations than not meeting my mothering expectations.	2.93	.884
7. If money were not an issue, I would prefer to stay at home with my children.	2.13	.977
8. By working I am able to provide for my family.	3.35	.653
9. The responsibilities of my job take me away from my children more than I'd like.	2.75	.835
10. My job is flexible. I am able to spend as much time as I'd like with my children.	2.39	.783
11. I do not pursue professional development activities (i.e. conferences and trainings) as much as I'd like because they require me to leave my children more than I'd like.	3.01	.942
12. I would prefer to work part-time, so that I could spend more time with my children.	2.61	.839

13. I feel guilty leaving my children when I go to work.	2.39	.912
14. A good mother is always there for her children.	2.63	1.013
15. Every mother should spend time engaged in activities with her children.	3.56	.579
16. A good mother provides for her children by doing things for her children.	3.11	.733
17. I wish I had more time to dedicate to my child's development (i.e. athletic, social, artistic, and educational).	2.99	.789
18. I love my children and my job, but some days I feel incapable of juggling work and family.	3.19	.882
19. As a working mother, I am instilling a good work ethic for my children.	3.32	.555
20. Working makes me a better mother.	2.94	.695
21. The schedule I have is ideal for a working mother.	2.85	.856
22. I do not have enough time to be completely successful as a mother or a worker.	2.70	.947
23. Motherhood has not affected the role of work in my life.	1.71	.745
24. My work is central to my identity.	3.04	.806

Role Balance. Marks and MacDermid (1996) published a scale to measure a general interpretation of role balance, which was appropriate for this study. Their Role Balance Scale contains eight items that represent balance of enjoyment across roles, balance of attention among roles, distribution of importance among roles, and balance of satisfaction across roles, as well as a non-balanced role system (Marks and MacDermid, 1996). Respondents were asked to indicate the degree to which they agreed or disagreed with each statement. In terms of reliability, Marks and MacDermid (1996) believed that the items demonstrated consistency with an alpha coefficient of .68. They interpreted this result as ideal for their complex, theoretical construct (Marks and MacDermid, 1996).

Health-Promoting Behaviors. This study utilized the 52 items designed to assess the frequency of health-promoting behaviors in the Health-Promotion Lifestyle Profile II (HPLPII) (Walker, Sechrist and Pender, 1995), which has a reliability of .96 (Acton and Malathum, 2000). The HPLPII has subscales that assess three of the five health-promoting behaviors physical activity (α =.85); nutrition intake (α =.80); and stress management (α =.79) (Walker, Sechrist and Pender, 1995). For this study, five items (35, 47, 53, 59, and 71) on the HPLPII were pooled to characterize women's utilization

of health care (α = .71). Additionally, the single item measuring sleep on the HPLPII was used.

Susan Walker and Diane Hill-Polerecky (2004) established content, construct, and criterion-related validity for the HPLPII. Content validity was confirmed through review of the literature and evaluation by content experts. A factor analysis confirmed the "six-dimensional structure of health-promoting lifestyle for construct validity … and criterion-related validity was indicated by significant correlations with concurrent measures of perceived health status and quality of life (r's = .269 to .491)" (Walker and Hill-Polerecky, 2004).

Data analysis

Data analysis was performed using SPSS. Aside from the demographic variables, all variables were measured using Likert scales and were treated as continuous variables, which is consistent with their treatment in their original studies (Marks and MacDermid, 1996; Walker, Sechrist and Pender, 1995). Data analysis began with descriptive statistics for demographic variables. As appropriate, frequencies or mean and standard deviation were calculated. The three main variables (motherhood ideology, role balance and health-promoting behaviors) were summarized by mean and standard deviation (see Table 2). Pearson's product-moment correlations were calculated between scores on the Motherhood Ideology Scale, Role Balance Scale, and the Health-Promoting Lifestyles Profile II. The significance level was set at $p < .05$ for all three analyses. Multiple linear regressions were calculated in order to best describe the relationship among the three main variables. Regression analysis provided a prediction of the variability of the dependent variable, health-promoting behaviors, using information about the two independent variables, motherhood ideology and role balance (Vogt, 1993). The significance level for this analysis also was set at $p < .05$.

Results

The mean age of 69 women participating in this study was 42 years, with a range from 30 to 58 years. The majority of women (75.4 percent) participating in this study identified themselves as Caucasian, which was representative of the demographic composition of female faculty employed at the four universities studied. The majority were married (88 percent) and reported that their spouses worked full-time (83 percent). Fifty-five percent of women had two children, with almost thirty percent reporting one child, and sixteen percent reporting three children. The majority (94 percent) of women had at least one child in the 5-14 years category, while forty-five percent of women were caring for preschool children. Forty-one percent of women participating in this study were assistant professors, forty-five percent were associate professors, and twelve percent were full professors. Consistent with the literature, most of the academic mothers (53.6 percent) were non-tenured (Mason and Goulden, 2004; Spalter-Roth and Erskine, 2004).

Table 2: Descriptive Statistics for the Study Variables

	Mean		SD	Range		*N*
Variable	**Overall**	**Scale**		**Possible**	**Actual**	
Motherhood Ideology	69.65	2.90/4	7.36	24-96	55-87	49
Role Balance	19.71	2.46/4	3.87	8-32	12-31	64
Health-Promoting Behaviors	131.39	2.53/4	22.45	52-208	91-181	50
Physical Activity	17.80	2.22/4	6.55	8-32	8-31	60
Nutrition Intake	25.54	2.84/4	4.43	9-36	16-36	67
Stress Management	17.10	2.14/4	4.71	8-32	8-29	68
Sleep	*	2.22/4	.95	1-4	1-4	69
Utilization of Health Care	12.52	2.50/4	3.07	5-20	7-20	68

* one item

The results provided evidence to support the hypothesis; academic mothers neglected their self-care in an attempt to maintain balance among their roles, especially their motherhood and professoriate roles. This was further illustrated through the answers to the following research questions: *Does motherhood ideology relate to health-promoting behaviors of academic mothers?* Motherhood ideology had a significant negative relationship with health-promoting behaviors, principally physical activity, stress management, and sleep (see Table 3). Women, who were intensive mothers, seemed to encounter difficulties regularly participating in these health behaviors.

Does role balance relate to health-promoting behaviors of academic mothers? Role balance had a significant positive relationship with health-promoting behaviors. Positive associations were found between role balance and the five health-promoting behaviors. In particular, role balance was significantly related

to physical activity, stress management, and sleep (see Table 3). Women who experienced greater role balance reported more regular participation in physical activity and stress management.

What is the relationship between motherhood ideology and role balance of academic mothers? The relationship between motherhood ideology and role balance was negative and significant (see Table 3). The more intense a woman's motherhood ideology the more role imbalance she reported. Although role balance inhibited academic mothers' participation in health-promoting behaviors, it was likely that motherhood ideology contributed to the imbalance.

Taken together, do motherhood ideology and role balance explain more variance in their relationship to health-promoting behaviors of academic mothers than each variable on its own? Table 4 presents the regression analysis of the dependent and independent variables. Using the enter method, in which all variables are inserted into the equation as a group, indicated that together motherhood ideology and role balance explained almost twenty percent of the variation in health-promoting behavior, with role balance being significantly correlated with health-promoting behaviors (ß = .35). For every unit of change in motherhood ideology, health-promoting behavior decreases .58 units. For every unit of change in role balance, there was a 2.0 increase in health-promoting behavior. Analyses showed that role balance made a significant contribution to the model, suggesting that the more balanced academic mothers' roles, the greater their participation in health-promoting behaviors. However, the interaction of motherhood ideology and role balance (Model 2) accounted for no unique variance above motherhood ideology and role balance alone.

Discussion

With cultural and societal pressures insisting that "a remotely decent mother … devotes her entire physical, psychological, emotional, and intellectual being, 24/7, to her children" (Douglas and Michaels, 2004: 4), it is not surprising that so many mothers do not sleep well. In fact, intensive mothers seem to have difficulty practicing health-promoting behaviors, in general.

The negative, but weaker than expected, relationship found between motherhood ideology and health-promoting behavior may be explained in several ways. First, the majority of women in this study had older children, and motherhood may be more intensive for newer mothers/mothers with preschool children as suggested by Milkie and Peltola (1999). Second, with the emphasis in the media on physical activity and diet, more mothers may be practicing healthier behaviors alone or with their children, which may have a positive effect on mothers' distress or act as effective stress managing techniques. Third, most of the mothers in this study reported being married, which may mean that their spouses provide equitable childcare, alleviating some degree of 'mother-guilt,' and allowing these women more time and energy to provide better self-care.

In this study, the struggle to balance multiple roles, and a women's mater-

Table 3: Pearson's correlations between the independent variables, overall health-promoting behaviors, and the five health-promoting behaviors

	Motherhood Ideology	Role Balance	Health-Promoting Behaviors	Physical Activity	Nutrition Intake	Stress Management	Sleep	Utilization of Health Care
Motherhood Ideology	1.000 . 69	-.313** .009 69	-.298* .013 69	-.309** .010 69	-.191 .116 69	-.439** .000 69	-.331** .005 69	-.099 .420 69
Role Balance		1.000 . 69	.405** .001 69	.283* .018 69	.229 .059 69	.393** .001 69	.316** .008 69	.214 .077 69
Health-Promoting Behaviors			1.000 . 69	.811** .000 69	.646** .000 69	.860** .000 69	.367** .002 69	.599** .000 6
Physical activity				1.000 . 69	.535** .000 69	.648** .000 69	.323** .007 69	.515** .000 69
Nutrition Intake					1.000 . 69	.381** .001 69	.070 .570 69	.297* .013 69
Stress Management						1.000 . 69	.529** .000 69	.501** .000 69
Sleep							1.000 . 69	.212 .080 69
Utilization of Health Care								1.000 . 69

*$p < .05$, **$p < .01$ (2-tailed)

nal role were considered immediate competing demands, since they deal with time-sensitive activities. Linda Beth Tiedje et al. (1990) found that women, who perceived their roles as conflicting, experienced more negative health consequences than those who perceived their roles as enhancing. For women with conflicting roles, this likely translates into a bigger obstacle for practicing health-promoting behaviors. Women who reported more role balance also reported more routine participation in health-promoting behaviors, especially physical activity and stress management.

Not surprising, the more intensive a woman's motherhood ideology the more role imbalance she reported in this study. This may be due, at least in part, to the impossible and idealized expectations and standards placed on American mothers. In line with intensive mothering in the twenty-first century, the rules of "new momism" dictate that the world polices mothers to make certain that super-human standards are met. This ideology is perpetuated by the media and represents the belief that a woman is not complete unless she is a mother who is her children's primary care giver, devoting her entire being (physical, emotional, psychological, and intellectual) to her children twenty-four hours a day, seven days a week (Douglas and Michaels, 2004). Adhering to such an intensive motherhood ideology, with its disproportionate weight on the mother role, seems incongruent with women experiencing balance across a system of multiple roles. This ideology threatens to force mothers out of the workforce, undoing over thirty years of progress (Hartmann, 2004). This is similar to Milkie and Peltola's (1999) finding that the cultural expectations surrounding motherhood affect women's beliefs about mothering and their abilities to manage multiple roles.

Role balance was significantly correlated with the Motherhood Ideology Scale item assessing job flexibility, which contradicts the findings of several researchers studying the relationship between flexible schedules and role balance. In their final report, Robert Drago and Carol Colbeck (2003) indicated that flexible schedules were not indicative of balanced lifestyles, since commitment to a tenure-track position leaves little time for other responsibilities. "Faculty status tends to be incompatible with family commitments, especially for women" (1). In addition, increasing demands, time constraints, performance pressures, and insufficient rewards are likely to result in dissatisfaction (Jacobs and Winslow, 2004b). "It is exceedingly challenging to be a responsible parent while maintaining this extent of work commitment, even if academic jobs are highly flexible" (Jacobs and Winslow, 2004b: 127). The nature of academic appointments tends to be flexible with regard to arranging meetings, office hours, teaching schedules, and scholarly activities, which enables spillover between work and home.

Significant relationships were found between both independent variables and health-promoting behaviors. However, the relationship between motherhood ideology and health-promoting behaviors was negative, indicating that intensive mothers have difficulty practicing health-promoting behaviors. While,

Table 4: Regression of Motherhood Ideology and Role Balance on Health-Promoting Behaviors (N = 69)

Model		B	SE	β	S.E.E.	Adj. R^2	*t*	*p*
1	Constant	132.096	31.560				4.186	0.00
	Motherhood Ideology	-.578	.354	-.189			-1.630	.108
	Role Balance	2.005	.673	.346	20.420	.172	2.979	.004
2	Constant	147.413	109.199				1.350	0.00
	Motherhood Ideology	-.797	1.540	-.261			-.518	.606
	Role Balance	1.205	5.502	.208			.219	.827
	Motherhood Ideology and Role Balance	1.155E-02	.079	.135	20.580	.160	.147	.884
	R^2 = .197							

the relationship between role balance and health-promoting behaviors was positive, demonstrating that mothers with more balanced role systems find it easier to engage in health-promoting behaviors. Analyses indicated that together motherhood ideology and role balance explain about twenty percent of the variation in academic mothers' health-promoting behavior. These findings suggest that women who are intensive mothers have less balanced role systems, which likely inhibits their participation in health-promoting behaviors. The interaction between motherhood ideology and role balance accounted for no unique variance in health-promoting behaviors above the independent variables on their own.

Conclusions

There is ample evidence to support the need for family-friendly aca-

demic work environments that facilitate the integration of work and family for employees. For colleges and universities this may translate into the implementation of policies without penalty to faculty status regarding the following: paid and unpaid leave for pregnancy, family care, and emergencies; reduced workload for family responsibilities; and stopping the tenure clock for up to two years following the birth or adoption of a child (AAUP 2001). Family-related changes, such as the birth or adoption of a child, can create stress and anxiety, which likely will have a negative impact on productivity in the workplace (Curtis, 2004).

Since academic mothers spend a good portion of their time on the job, it may be necessary to consider improvements to the social environment, such as access to healthy foods, safe work locations, and up-to-date exercise facilities. Newsletters and fliers containing healthy options (e.g., healthy recipes, nutrition and exercise tips, and encouragement for living healthier) may be a cost-effective strategy for reaching mothers.

Programs, including presentations, workshops, and support groups, can help protect mothers from burnout associated with trying to "have it all," while identifying factors that contribute to their work-family difficulties and strategies for dealing with them (Warren and Johnson, 1995). It may be necessary to provide academic mothers with a realistic picture of motherhood, since the media often perpetuates the supermom ideal. There is an opportunity for college health educators to support caregivers with their health-promoting behaviors. Interventions need to consider the experiences and lifestyles of mothers, as well as the rewards and burdens of care giving (McDonald, Fink, and Wykle, 1999).

Future directions

This study makes a unique contribution to our knowledge about academic mothers' health-promoting behavior. Previous studies focused on health-damaging behaviors and the consequential health outcomes of unhealthy choices. Future studies should consider the relationship between health-promoting behaviors and health outcomes (e.g., stress management and depression, physical activity and heart disease) for faculty mothers, as well as mothers holding other positions within academia.

The results of this study are cross-sectional, so it is not possible to make causal inferences about the variables. Therefore, longitudinal data are needed to further our understanding of how motherhood ideology and role balance effect health-promoting behaviors over time.

The relatively small sample size may introduce bias, as the results may introduce Type II error. Although significant relationships were found among the study variables, other associations that are significant may not have been identified as significant. Replication of this study with larger numbers of academic mothers would be useful.

Future research should examine academic mothers' strategies for balanc-

ing motherhood, work, and health-promoting behaviors. In particular, studies should include additional variables women consider in developing strategies to balance work and family roles, such as income needs, child care needs, spouse needs, child needs, work needs, personal and self-care needs (Garey, 1999). Additionally, variables of support should be considered as women often use social support as a coping mechanism and an indicator of success in managing multiple roles and health (Hattery, 2000).

Additional research should involve qualitative methods to gain greater insight to the underlying ideologies and rationales supporting mothers' beliefs and behaviors. Additionally, other "competing demands," such as housework and childcare should be observed. Carol J. Erdwins, Louis C. Buffardi, Wendy J. Casper, and Alison S. O'Brien (2000) found that women who reported failure in balancing work and family also perceived an unfair division of household labor. They found mothers' satisfaction with their childcare arrangements to be related to their anxiety about leaving their children. In addition, first time and younger mothers reported greater difficulty in balancing their multiple roles than older more experienced mothers (Erdwins et al., 2000). Therefore, studies involving mothers through their lifespan would be a contribution.

Further quantitative studies should examine the experiences of academic fathers as they relate to fatherhood ideology, role balance and health-promoting behaviors, especially since men seem to be undertaking more responsibility for child care through shared parenthood, and single parenthood in the aftermath of death or divorce. Additionally, a study that compares the experiences and behaviors of faculty fathers and mothers would make a worthwhile contribution to the literature, especially as there is a need to research the pressures faced by dual-earner academic couples (Jacobs and Winslow, 2004a).

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