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Role stress, interrole conflict, and job satisfaction among university employees: the creation and test of a model

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Abstract

Many universities have experienced financial hardships during the recent economic downturn. To save money, several have resorted to laying off employees, which has often resulted in increased work and stress for the remaining employees. Such an increase has the potential to adversely affect employees' sense of job satisfaction. This study created and tested the fit of a conceptual model containing role stress and interrole conflict as a way to account for employees' job satisfaction. The model demonstrated an acceptable fit to the data and contained several significant paths. Implications of the results, study limitations, and future directions for research are discussed.

Institutions of higher education have experienced significant financial losses because of the economic recession that began in 2008 (Kelderman, 2009). In response to decreased funding, many universities have saved money by laying off employees or implementing hiring freezes. A consequence of these actions is that the university employees who remain employed may be overwhelmed by increased workloads because they have to perform their job duties and those of their former coworkers. The increased job demands often result in role stress, specifically, *work overload*, which is defined as a situation in which employees believe that too many responsibilities or activities are expected of them in light of their availability, abilities, or other factors (Rizzo, House, & Lirtzman, 1970). Work overload can lead to *job stress*, which is characterized as an unpleasant emotional experience riddled with fear, dread, anxiety, irritation, and other negative emotions (Motowidlo, Packard, & Manning, 1986), or *interrole conflict*, which is defined as conflicts between work and family responsibilities (Aryee, Luk, Leung, & Lo, 1999). For instance, increased work demands can detract from family time and create a sense of *family overload*, which is when employees feel an overabundance of family responsibilities. Either way, work overload and interrole conflict are likely to result in adverse consequences for employees, namely in the area of job satisfaction (Karasek, 1979).

As the budget crisis continues, the number of employees seeking counseling services for issues related to role stress, interrole conflict, and satisfaction is likely to increase; therefore, counselors must be prepared to address the needs of this unique clientele. To gain a greater understanding of the complex associations between role stress, interrole conflict, and job satisfaction, counselors must examine a comprehensive model. Doing so will allow counselors to plan interventions that can assist university employees. The current study

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tested the fit of a model containing role stress and interrole conflict as a way to explain job satisfaction among universities' employees (see Figure 1).

INTERROLE CONFLICT AND JOB SATISFACTION

One of the biggest challenges that employees face is balancing the complex, and often conflicting, demands of work and family responsibilities. These competing demands and responsibilities commonly result in interrole conflict. Interrole conflict consists of *work-to-family conflict* (WFC), which occurs when work responsibilities interfere with family and responsibilities, and *family-to-work conflict* (FWC), which occurs when familial responsibilities interfere with work responsibilities (Greenhaus & Beutell, 1985). An example of WFC would include mandatory weekend hours that detract from family activities such as church attendance or social events. An example of FWC would be a child's illness preventing a parent from attending work.

WFC and FWC have contributed to adverse consequences for employees, families, and employers (e.g., Allen, Herst, Bruck, & Sutton, 2000; Boyar, Maertz, & Pearson, 2005; Winslow, 2005). One such area in which interrole conflict has been known to exert an influence is on job satisfaction (e.g., Aryee et al., 1999; Bolino & Turnley, 2005). Researchers have revealed that increased interrole conflict typically results in decreased job satisfaction (Allen et al., 2000). In a meta-analysis conducted on articles from 1977 through 1998, Allen et al. (2000) found that increased WFC was related to lower workplace productivity, increased tardiness and absences, greater job turnover, and increased job dissatisfaction ($r = -.24$, $p < .05$ for job dissatisfaction).

Although not studied as extensively as WFC, the influence of FWC on job satisfaction has also been explored. For example, Boyar, Maertz, Mosley, Carr, and Keough (2003) found that employees who experienced high levels of work overload tended to perceive family responsibilities as barriers to accomplishing work goals, thereby creating FWC, which decreased job satisfaction. Similarly, employees who believed that their colleagues and supervisors expected them to prioritize work over family created a sense of FWC and dissatisfaction. Aryee et al. (1999) found work overload and parental overload to be directly related to FWC, and FWC was associated with decreased job satisfaction. Because universities are expected to endure more budget deficits, the number of university employees experiencing role stress is likely to increase (Kelderman, 2009). By examining the influence of role stress on interrole conflict and job satisfaction, counselors can develop policies and interventions to assist university personnel.

RESEARCH QUESTIONS AND HYPOTHESES

Determining the extent to which the conceptual model fits the data is the primary research question in this study: "Does the proposed conceptual model demonstrate a close fit to the data?" Corresponding to this question, we formulated several hypotheses regarding the constructs of interest. We hypothesized that role stress (work and family overload) would predict increased interrole conflict (WFC and FWC), and increased interrole conflict would predict decreased job satisfaction.

METHOD

Participants

Participants were 166 employees from three mid-sized, midwestern U.S. cities. The average age of participants was 42.26 years ($SD = 10.54$; range 20–75). Of the 166 participants, 70% ($n = 116$) were women. Slightly less than half of participants, 47% ($n = 78$), reported that

they did not have children, whereas 53% ($n = 88$) reported that they had children. Regarding marital status, 68% of participants were married, 12% were divorced, 10% were single, and 10% were either widowed or legally separated from their partners. In terms of their education levels, 4% of participants had obtained doctoral degrees, 33% had master's degrees, 30% had bachelor's degrees, 14% had vocational certificates, 13% had high school diplomas, 3% had general equivalency diplomas (GEDs), and 3% did not indicate their education levels. Participants' average work week was 41.35 hours ($SD = 15.62$), and their average length of employment in their current jobs was 3.17 years ($SD = 2.00$). Regarding their occupations, 60% of employees were staff members and 40% were faculty members.

Measures

Work overload—We measured work overload using five items adapted by Aryee et al. (1999). These items measured the extent to which employees felt overwhelmed or overburdened at work (e.g., “I am responsible for too many activities in my job”). Participants responded using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). We calculated scores by summing item responses; higher scores represent greater work overload. Aryee et al. reported adequate validity and reliability data in a previous study. The alpha coefficient for scores among employees in the present sample was .94.

Family overload—We measured family overload using five items adapted by Aryee et al. (1999). These items measured employees' perceptions of their abilities to fulfill their family responsibilities (e.g., “On average, how often do you feel you adequately fulfill your family responsibilities?”). Participants responded using a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*). We calculated scores by summing item responses; higher scores represent higher perceptions of being able to fulfill family responsibilities adequately. Aryee et al. reported adequate validity and reliability data. The alpha coefficient for scores among employees in the present sample was .85.

Interrole conflict—WFC and FWC were measured using a 10-item scale developed by Netemeyer, Boles, and McMurrian (1996). These items measured the extent to which family responsibilities interfered with work responsibilities (5 items; e.g., “I have to put off doing things at work because of the demands on my time at home”) and vice versa (5 items; e.g., “My job produces strain that makes it difficult to fulfill my family duties”). Participants responded using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). We calculated scores by summing item responses; higher scores represent greater amounts of WFC or FWC. Previous studies have reported adequate psychometric data (Aryee et al., 1999). The alpha coefficients for scores among employees in the present study were .92 and .88 for WFC and FWC, respectively.

Job satisfaction—We assessed job satisfaction by using an abbreviated 5-item version of Brayfield and Rothe's (1951) 18-item Job Satisfaction questionnaire. This scale measured participants' enjoyment of and satisfaction with their jobs (e.g., “I like my job better than the average person” and “I feel fairly well satisfied with my job”). Participants responded using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). We calculated scores by summing item responses; higher scores represented greater job satisfaction. Adequate validity and reliability have been established in previous studies (e.g., Aryee et al., 1999); the alpha coefficient for scores in the present study was .90.

Recruitment Procedures and Study Administration

After obtaining institutional review board (IRB) approval, we mailed questionnaire packets containing informed consent forms, demographic identification forms, and the survey

materials to randomly selected employees at their work sites. Approximately 40% of individuals who received questionnaire packets participated in the study. Completing the questionnaire packets took approximately 20 minutes; participants did not receive any incentives for their participation. Universities that were partners or affiliates of the University of Missouri–Kansas City and accepted the IRB approval were selected as universities from which to recruit participants.

RESULTS

The descriptive statistics, internal consistency reliabilities, and bivariate correlations of all study variables are presented in Table 1. To test the hypothesized path model, we used the Amos 7.0 statistical package (Arbuckle, 2006). Conditions for multivariate normality were met (Bentler & Chou, 1987). Our sample of 166 employees was relatively small but met the minimum requirements for conducting the path analysis (Kline, 2005; Marsh, Balla, & McDonald, 1988). Using maximum likelihood estimation, we evaluated the adequacy of the model-to-data fit on the basis of examinations of the chi-square statistic and several other indices: the comparative fit index (CFI); the incremental fit index (IFI), which is the equivalent of the Tucker–Lewis index for small samples (Hoyle & Panter, 1995); and the root mean square error of approximation (RMSEA; McDonald & Ho, 2002). A nonsignificant chi-square statistic ($p > .05$) indicates a close fit of the model to the data, because this nonsignificance indicates that the model does not vary significantly from the data. In addition, an RMSEA value less than .05 paired with CFI and IFI values greater than .95 represent close fits of the model to the data. Adequate or acceptable fits are characterized by RMSEA values of .08 or less with CFI and IFI values being greater than .90 (McDonald & Ho, 2002).

The results of the hypothesized path model are presented in Figure 2. The fit indices demonstrated an acceptable model-to-data fit, meaning that the proposed model should not be rejected, $\chi^2(3, N = 166) = 8.23, p = .049, CFI = .93, IFI = .94, RMSEA = .08, 90\%$ confidence interval [.04, .20]. Although the model did not demonstrate a “close” fit per se, the model fit was adequate. An examination of the standardized regression weights of the paths among the variables in the model revealed that all paths in the model were significant except for the path between FWC and job satisfaction. As hypothesized, roles stress predicted interrole conflict. Namely, work overload predicted WFC (critical ratio [cr] = 6.68, $p < .01$), indicating that employees who experienced greater work overload also experienced high levels of WFC. Additionally, individuals who reported high levels of work overload also reported high levels of FWC ($cr = 3.12, p < .01$). Likewise, family overload served as a precipitator to WFC ($cr = 4.89, p < .01$) and FWC ($cr = 3.78, p < .01$); employees who reported high amounts of family overload also reported high levels of WFC and FWC. As predicted, our model also indicated that aspects of interrole conflict predicted job satisfaction. Specifically, employees who experienced high amounts of WFC reported low levels of job satisfaction; that is, they were dissatisfied ($cr = -3.43, p < .01$).

DISCUSSION

This study examined a model consisting of variables related to role stress, interrole conflict, and job satisfaction among university employees. As universities continue to experience financial hardships and lay off employees or implement hiring freezes, the amounts of role stress and interrole conflict that the remaining employees experience is likely to increase. To understand the consequence of such a phenomenon, we tested a comprehensive model that examined the intertwining influence of role stress, interrole conflict, and job satisfaction. In general, we uncovered relationships that will have important implications for counselors who interface with employees in the workplace or through their private practices.

Our model demonstrated an adequate fit to the data, meaning that our model depicted patterns in the data relatively well. Consistent with the literature, work overload predicted WFC and FWC, with those experiencing greater work overload reporting greater WFC and FWC (e.g., Aryee et al., 1999). Moreover, WFC resulted in decreased job satisfaction. Employees who were overwhelmed and overburdened by their work responsibilities reported that work responsibilities significantly interfered with family responsibilities. Individuals who felt overwhelmed at work may feel the need to work increased hours to catch up or *maintain float* (i.e., complete their daily tasks and assignments in a timely manner), thereby introducing work spillage into their family lives. Likewise, these employees also viewed their family responsibilities as interfering with their abilities to perform their jobs, which created a sense of FWC, which is consistent with findings by Boyar et al. (2003).

Interrole conflict, that is WFC and FWC, resulted not only from work overload, but also from family overload. On the extreme end, some of the employees in this study worked nearly 56 hours per week; thus, family responsibilities were likely to interfere with work responsibilities. However, unlike WFC, FWC did not significantly relate to job dissatisfaction. In this regard, employees may have been able to compartmentalize family responsibilities and not attribute their job dissatisfaction to an overload of family responsibilities.

IMPLICATIONS FOR COUNSELORS

Counselors are encouraged to educate employees and employers regarding the negative affects of role stress and interrole conflict on job satisfaction. Counselors who interact with employers should advocate for their clients by recommending workplace changes such as providing flexible or compressed workweek schedules, both of which have been found to enhance job satisfaction and work performance (Baltes, Briggs, Huff, Wright, & Neuman, 1999) as a way to decrease WFC and FWC. Additionally, encouraging employees to use interventions such as Employment Assistance Programs or mental health counselors to help them learn the necessary skills to manage their role stress and interrole conflict can be very beneficial. Although reducing work and family overload may not be possible, researchers have found that factors such as partner support, family support, and coping strategies significantly reduce the negative effects of WFC and WFC on job satisfaction (e.g., Aryee et al., 1999; Byron, 2005; Crouter, 1984; Grzywacz & Bass, 2003; Parasuraman, Greenhaus, & Granrose, 1992; Rotondo, Carlson, & Kincaid, 2003). Encouraging employees to solicit help from partners, spouses, friends, or family members may reduce feelings of FWC. Teaching employees emotion-focused coping strategies (reducing or eliminating stress through distancing) and problem-focused coping strategies (reducing or eliminating stress through proactive, tangible behaviors) can reduce WFC, and thereby increase job satisfaction. For example, teaching employees organizational skills (e.g., using to-do lists or daily planners), relaxation techniques, cognitive restructuring, and positive filtering may minimize the negative influences of role stressors and interrole conflict among employees.

STUDY LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Despite several important findings in this study, we recognize that some limitations should be noted. The descriptive nature of data collected in this study means that causality cannot be inferred; we can conclude only that the variables are associated with one another. Furthermore, although we gathered participant demographic information, we were unable to determine ethnic composition, which potentially limits the generalizability of our findings to ethnically diverse groups. In addition, many participants in our sample were well-educated university employees, so the results can be generalized only to like persons. Also, although

our sample size was sufficient, it was relatively small. This study should be replicated with a larger sample from a variety of work environments with adequate representation of individuals from varying racial backgrounds, career fields, and socioeconomic statuses to provide additional support for the model. Last, as indicated by the literature, role stress and interrole conflict may manifest differently for men and women, particularly for women who have children (e.g., Allen et al., 2000). Whereas this study did not specifically examine subgroup differences (e.g., men vs. women or those with children vs. those without children), we recommend that this model be replicated with a larger sample that is sufficiently powered to examine such differences. Checking for invariance in the model across subgroups will determine how accurately the model depicts relationships for specific groups such as women, men, those with children, and those without children, and by other subgroup classifications as determined by the researchers.

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FIGURE 1.
Hypothesized Path Model Depicting Role Stress, Interrole Conflict, and Job Satisfaction

FIGURE 2. Results of the Hypothesized Path Model

Note. All reported regression weights are standardized.

** $p < .01$. *** $p < .001$.

TABLE 1

Means, Standard Deviations, and Bivariate Correlations Among Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	
1. Work Overload	14.92	5.44	.94	—	-.08	.45**	.25**	-.15
2. Family Overload	15.32	2.22	.85	.85	—	-.21**	-.19*	.19*
3. Work–Family Conflict	14.71	5.14	.92	.92	.92	—	.38**	-.27**
4. Family–Work Conflict	10.01	3.91	.88	.88	.88	.88	—	-.10
5. Job Satisfaction	18.60	3.99	.90	.90	.90	.90	.90	—

*
 $p < .05$.**
 $p < .01$.