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ABSTRACT

Rather than ask whether multiple roles, such as employee, wife, and mother, have a protective or harmful effect on women's psychological well being, this study examined the combination of stressors and supports associated with work and family roles. Female clerical workers (N=44) who were married and/or had a child living at home completed questionnaires rating two dimensions of their work and family roles: (1) quality of interpersonal relations and role satisfaction; and (2) levels of depression and anxiety. Associations satisfaction - and levels of depression and anxiety. Associations between mental health and role conditions were evaluated for work and family roles separately. Two models of how experiences in the two roles are jointly linked to mental health were tested. According to an additive model, work and family roles act independently, whereas an interactive model suggests that conditions in one role modify the effect of the other role. As predicted, greater psychological distress was found among women who described their social interaction at home and at work as conflictual and nonsupportive, and who reported being dissatisfied with their work and family roles. An additive model seemed to best describe how the two roles conjointly related to well being: stress in one role appeared to have a constant impact on mental health, regardless of interpersonal relations or satisfaction in the other role. There was no evidence for the interactive model; conditions in one role did not modify the psychological effects of the other role. (Author/NB)

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The Contribution of Work and Family Roles to
Mental Health: An Evaluation of Additive and
Interactive Models

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Abstract

Rather than ask whether multiple roles, such as employee, wife, and mother, have a protective or harmful effect on women's psychological well being, the present study examines the combination of stressors and supports associated with work and family roles. A group of 44 female clerical workers who were married and/or had a child living at home completed questionnaires rating two dimensions of their work and family roles - quality of interpersonal relations and role satisfaction - and levels of depression and anxiety. First, associations between mental health and role conditions were evaluated for work and family roles separately. Next, two models of how experiences in the two roles are jointly linked to mental health were tested. According to an additive model, work and family roles act independently, whereas an interactive model suggests that conditions in one role modify the effect of the other role. As predicted, greater psychological distress was found among women who described their social interaction at home and on the job as conflictual and nonsupportive, and who reported being dissatisfied with their work and family roles. An additive model seemed to best describe how the two roles conjointly relate to well being: stress in one role appeared to have a constant impact on mental health, regardless of interpersonal relations or satisfaction in the other role. There was no evidence for the interactive model; conditions in one role did not modify the psychological effects of the other role.

The Contribution of Work and Family Roles to Mental Health:
An Evaluation of Additive and Interactive Models

With a growing proportion of mothers joining the paid labor force, psychologists are focussing more attention on the psychological implications of multiple roles. Some studies indicate that women occupying more than one social role, such as employee, wife, and mother, have lower levels of depression (Kandel, Davies & Raveis, 1985; Radloff, 1975; Repetti & Crosby, 1984), improved psychological well being (Barnett & Baruch, 1982; Thoits, 1983), and better physical health (Verbrugge, 1983). However, other research indicates that the combination of employment and motherhood may be associated with strain and conflict, such as low levels of marital adjustment (Gove & Peterson, 1980; Staines, Pleck, Shepard & O'Connor, 1978) or feelings of guilt (McCartney & Phillips, in press). Still others argue that employment has no effect on mothers' mental health, except under special circumstances (Parry, 1986). These apparent contradictions may be the result of having reduced the problem to a false simplicity. A re-framing of the multiple-roles issue may be in order.

Any social role -- marriage, employment or motherhood -- can serve as both a source of support and a source of stress (Pearlin 1982, 1985). Rather than ask whether complex role configurations "per se" are stressful or health-promoting, researchers should examine the quality of life in each role. Repetti & Crosby (1984) found that moods experienced at home tended to be

stronger predictors of depression among housewives than among employed people. For the respondents with paid jobs, emotional experiences at home and on the job related about equally to depressive symptomatology. The authors speculated that the availability of diverse social arenas may partially protect employed women from the consequences of stressful home lives, possibly by providing alternative sources of gratification and social support. In an analysis of data from national surveys involving over 1600 women, Benin & Neinstedt (1985) similarly reported that marital happiness was a stronger predictor of overall happiness for housewives than for employed women. As in the Repetti and Crosby (1984) study, emotions associated with both work and family roles were significantly related to the overall well being of employed women. Golding (1986) also found that stressors and social supports associated with marital and employment roles simultaneously contributed to levels of depression in a sample of over 1,000 men and women.

The present study relates subjective mental health to two aspects of work and family roles, in a small sample of employed female clerical workers who are married and/or have children living at home. Married female clerical workers with children have been found to experience coronary heart disease rates twice as great as those of comparable non-clerical workers and housewives (Haynes & Feinleib, 1980). Thus, the present sample may be representative of the group of women facing the greatest risk of role strain.

Separate Contributions of Work and Family Roles

The paper first addresses the simple question: How are characteristics of

work and family roles separately linked to an employed woman's mental health? Recent research suggests that interpersonal conflict is the most stressful dimension of adult roles (Kandel et al., 1985). Two related dimensions of work and family roles are examined here: participants' reports of the quality of their interpersonal relations in each role and their level of role satisfaction. It is hypothesized that greater psychological distress is found among employed women who describe their interaction at home and on the job as conflictual and nonsupportive, and who are dissatisfied with their work and family roles.

The Joint Contribution of Work and Family Roles

The paper's primary goal is to explore two mechanisms through which experiences in work and family roles conjointly influence mental health. An additive model assumes that the two roles act independently - i.e. the impact of experiences in one role do not depend in any way on experiences in the other role. The additive model is a linear model. In contrast to an additive model, an interactive model describes a non-linear relation between role experiences and mental health. It suggests that conditions in one role modify the effect of the other role.

Both models are depicted in Figure 1. The two formulations make different predictions about the way that work and family roles combine to influence mental health. Consider a hypothetical case in which an employed mother experiences 3 units of stress at work and 7 units of stress at home. (For illustrative purposes, assume the variables are measured on a ratio scale and that a one-unit increase in stress leads to a one-point increase on a scale of

psychological distress.) According to the additive model, stress from the two roles would sum, thereby increasing the subject's level of psychological distress by 10 points. According to the interactive model, stress from the two roles would multiply, resulting in a 21-point increment in her distress score. In this example the interactive model predicts a much higher level of distress.

Now consider another woman who also experiences 3 units of job stress but who has no stress at home. In this case, the additive model predicts a 3-point increase in her distress level, whereas the interactive model predicts no increase at all. Here, according to the interactive model, the subject's supportive home environment "protects" her from the adverse effects of job stress. For both hypothetical women, the additive model predicts the same relation between job stress and psychological well being. However, under the interactive model, the effects of job stress vary depending on conditions at home. In short, the additive or linear model suggests that role stress has a constant impact on mental health, regardless of conditions in another role. On the other hand, the interactive or non-linear model suggests that conditions in one role domain can attenuate or intensify the psychological effects of the other role.

Two hypotheses, based on the models described above, are tested here. The additive hypothesis states that work and family roles each have a significant independent effect on mental health. Thus, deleterious conditions in one role (role dissatisfaction and poor interpersonal relations) are associated with greater psychological distress, independent of conditions in the other role. The interactive hypothesis, on the other hand, states that the effects of

experiences in each role are modified by experiences in the other role. Hence, the impact of deleterious conditions in one role are reduced by positive conditions, and increased by adverse conditions, in the other role. The two multiple-role hypotheses are tested in multiple regression analyses. The additive model is evaluated by estimating the impact of one role after controlling for conditions in the other role. The interactive model is evaluated by a polynomial term representing the cross-product of experiences in work and family roles.

Method

Procedures

The data used here were collected as part of a larger study examining social factors in the workplace (Repetti, 1986a). A group of clerical employees from two banks, one on the east coast and one on the west coast, rated their mental health and various aspects of their work and family roles. During Phase 1 of the study, participants filled-out a survey which included a job satisfaction inventory and work social environment scales. During Phase 2, a volunteer subsample of seventy women completed measures of mental health and family life, two to three weeks after the job survey.

Sample

The data reported here were obtained from the forty-four women who participated in both phases of the study and who were married and/or had a child living with them. All but 9 of the 44 were living with husbands at the time and 35 had at least one child. All of the participants had completed high

school; 16% had a college degree. The average age among the sample of women was 37 years.

Measures

Each role domain is represented in this study by two measures of the quality of interpersonal relations in that domain and by one measure of role satisfaction.

Work-Role Measures. The work-role scales were derived from a factor analysis of the Phase 1 survey (Repetti, 1986a)¹. Work Social Climate (Cronbach's Alpha = .93) is a 22-item scale describing the general social climate of a bank branch (example: "The social atmosphere in this branch is very friendly."). Most of the items are drawn from the "Relationship Dimension" of the Work Environment Scale (Insel & Moos, 1974). Supervisor Support (Cronbach's Alpha = .86) is a four-item scale assessing the amount of instrumental and emotional support an individual receives from her supervisor (example: "How much can your immediate supervisor be relied on when things get tough at work?"). The support scale is identical to the ISR Supervisor Support subscale (Caplan et al., 1975). Role satisfaction is assessed by a five-item Job Satisfaction scale (Cronbach's Alpha = .80) assessing satisfaction with one's job and type of work (example: "I am generally satisfied with the kind of work I do in this job"). Items are drawn from the Work Environment Scale (Insel & Moos, 1974) and the Job Diagnostic Survey (Hackman, 1980). High scores on the work-role scales indicate a pleasant and friendly social atmosphere at work, and high levels of supervisor support and job satisfaction, respectively.

Family-Role Measures. The family-role measures were part of the Phase 2 questionnaire. Two nine-item subscales of the Family Environment Scale (Moos & Moos, 1981) are included to represent the quality of interpersonal relations at home. Family Conflict (Cronbach's Alpha = .75) assesses the amount of openly expressed anger, aggression and conflict among family members (example: "We fight a lot in our family."). Family Cohesion (Cronbach's Alpha = .71) measures the degree of commitment, help and support family members provide for one another (example: "There is a feeling of togetherness in our family."). Marital and Family Satisfaction (Cronbach's Alpha = .87) is a six-item scale developed on the basis of a factor analysis (Repetti, 1986b). It measures marital satisfaction and happiness with family life in general (example: "Everything considered, how happy has your marriage been for you?"). High scores on the family-role scales indicate high levels of conflict, cohesion and satisfying relations in the family, respectively.

Mental Health Measures. Mental health refers here to an individual's subjective sense of emotional well being and comfort. Two dimensions of mental health are used in the present analyses². Depression is measured by the 20-item CES - Depression Scale, a self-report scale designed to assess depressive symptomatology in the general population (Radloff, 1977). Anxiety is assessed by The Trait Anxiety Scale (Spielberger, Gorsuch, & Lushene, Vagg, & Jacobs, 1983), a self-report measure of trait anxiety. The scale consists of 20 statements that ask the respondent to describe how she generally feels. High scores on the mental health measures indicate high levels of depression and anxiety, respectively.

Results

Descriptive Statistics

Ratings made by the sample of 44 women on the three work-role variables were compared to ratings made by the entire group of 302 Phase 1 respondents; there were no significant differences. Scores on the Family Conflict ($x = 3.02$, $S.D. = 2.42$) and Family Cohesion ($x = 7.07$, $S.D. = 1.88$) scales resembled normative data based on a sample of non-distressed families. Each of the family relations scales can range from 0 to 9³. The sample of Depression scores ($x = 1.50$, $S.D. = .40$, on a 1-4 scale) resembled those of employed women with similar incomes⁴. Many researchers use a cutoff score of 1.85 on the CES-D scale to identify high-depressed subjects (Lewinsohn & Teri, 1982). About 25% of the participants scored in this range, which coincides with Radloff's (1975) finding of 22-29% high scorers in a national sample of women. Anxiety scores ($x = 1.84$, $S.D. = .44$ on a 1-4 scale) also matched data from a standardization sample of employed women ($x = 1.74$) (Spielberger, et al., 1983).

Separate Contributions

The hypothesis that the two dimensions of work and family roles, quality of social interaction and role satisfaction, would be separately related to the mental health of employed women was tested by Pearson product-moment correlations. As can be seen in Table 1, all six of the associations between mental health and conditions in the work role are statistically significant, in the predicted direction. Out of the six correlations between mental health and family-role variables, five are statistically significant, all in the predicted

direction. In sum, perceptions of harmonious and supportive social interaction and role satisfaction, in both work and family roles, were positively associated with psychological adjustment in this sample of clerical workers. As predicted, greater psychological distress was found among women who tended to describe their social interaction at home and on the job as conflictual and nonsupportive, and who reported being dissatisfied with their work and family roles.

Although the first hypothesis was supported by the correlations presented in Table 1, a word of caution is in order. First, it is impossible to determine direction of causality; mental health may influence role perceptions just as characteristics of work and family roles may affect psychological functioning. A second limitation is the possibility that some unmeasured "third variable" actually accounts for the results. For example, a correlation between individuals' role evaluations and their self-reported mental health could be explained simply by respondent bias — some people are inclined to use positive terms and others are inclined to use negative terms when describing themselves and their life circumstances. Third, in a matrix, such as the one presented in Table 1, a portion of the correlation coefficients may be significant simply by chance. Moreover, when two variables are truly related their correlation may be duplicated by another pair of variables, which happens to be correlated with the former pair for other reasons. Multiple regression analyses examining the combined effects of work and family roles, which are described next, reduce the interpretive problems associated with unmeasured variables and multiple comparisons.

3.2.4. Controlled Analysis: Evaluating the Additive and Interactive Models

Hierarchical multiple regressions were used to test the additive model of the combined effects of work and family roles. Each measure of mental health was regressed onto the entire group of work and family predictor variables. In two sets of analyses, first, the three family role measures were entered into the equation first and the three work-role measures were entered second. In another set of analyses, the reverse ordering was used, family variables were added after controlling for the effects of the work-role variables.

Results are reported in Table 2. The combination of experiences in work and family roles predicted a significant amount of the variance in Depression scores (.79) and Anxiety scores (.44). Moreover, interpersonal factors and satisfaction in both work and family roles separately accounted for significant proportions of the variance in mental health scores, after controlling for the effect of the other role. The findings support the additive hypothesis, indicating that experiences in work and family roles have additive, independent effects on mental health.

The interactive model predicted that conditions in one role would modify the relationship between mental health and conditions in the other role. This multiple-role mechanism was evaluated through interaction terms in multiple regression analyses. Depression and Anxiety scores were regressed onto nine different sets of predictors. Each set of predictors consisted of (1) a work-role variable, (2) a family-role variable, and (3) a product term representing the interaction of the work-role and family-role variables. The nine interaction terms represented three separate work variables multiplied by

three separate family variables. All together, 18 regressions were performed (two mental health outcomes x nine sets of predictors). In not a single case did an interaction term contribute a significant amount of variance to the model. Thus, no support was found for the non-linear hypothesis; experiences in one role did not attenuate or magnify the impact of experiences in the other role.

Discussion

The results reported here indicate that subjective psychological distress is associated with dissatisfaction with one's work and family roles and the perception that interpersonal relations in those roles are nonsupportive and/or conflictual. Moreover, a linear, additive model appears to best describe how the two roles conjointly influence mental health. The findings may be interpreted as evidence that work and family roles each uniquely contribute to the psychological well being of employed married women.

No support was found for an interactive model. The quality of social life and satisfaction in one role appears to have a constant effect on well being, regardless of the quality of social life and satisfaction in the other role. For example, the harmful effects of job dissatisfaction do not appear to be reduced by a supportive family environment. Rather, according to the additive model, the positive outcomes of family support might counterbalance the negative outcomes of job dissatisfaction. Note that, according to the latter formulation, distress resulting from experiences at work remains the same -- the presense or absense of support from family members does not change that relation. However, the impact that family support has on mental health might

neutralize the detrimental results of job stress.

The findings also suggest that there is more to the relation between mental health and experiences in multiple roles than simple respondent bias. The first step in the hierarchical regression analyses controlled not only for a set of role perceptions, but also for any other variable with which the role perceptions were confounded. If the zero-order correlations reported here were simply the result of respondent bias or some other "third" variable, the second set of role variables entered in the hierarchical regressions would not have added to the total amount of explained variance in mental health scores. Instead, results supported the interpretation that correlations between role characteristics and mental health represent true relationships.

Of course the correlational data presented here do not permit a determination of causal direction. Analyses reported elsewhere (Repetti, 1986a) suggest that social factors in a work environment do affect mental health. However, it seems likely that there are reciprocal relations between experiences in multiple roles and mental health. For example, an individual's level of psychological adjustment might influence her social behavior, thus affecting the social environment in all major role arenas. In addition, if there is a reciprocal causal link between roles and well being, then conditions in one role can indirectly influence the quality of life in another role. For example, mood engendered at work may be expressed at home, thereby establishing a carry-over effect from one role arena to the other (Repetti, 1986b).

One conclusion to be drawn from this study is that the question of whether

multiple roles protect or hurt women is too simplistic. It may be more informative to investigate the circumstances surrounding the enactment of each role. Preliminary analyses presented here suggest that experiences in work and family roles contribute to mental health in an additive, linear fashion. However, both the additive and non-additive models require further evaluation. The present study is based on a small, restricted sample. Wider sampling could uncover other multiple-role mechanisms. For example, the interactive model may come into play only under highly stressful conditions. It is also important to determine whether the same processes apply to men & to people in different occupational groups.

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Footnotes

¹ The factor analysis of the 53-item Phase 1 survey resulted in five factors with eigenvalue greater than or equal to 1.0. Four of the factors represented aspects of the social environment at work and one represented job satisfaction. The two factor-based measures of the social environment with the best psychometric properties were chosen for inclusion in this study.

² A third dimension of mental health, self esteem, was also assessed in the study. The pattern of findings using self esteem as the dependent variable paralleled results based on the depression and anxiety measures. However, self esteem was generally not as reliably predicted by the work and family variables as was depression and anxiety. The differences may have been due to the fact that the self-esteem scale consisted of fewer items. Or, self esteem may represent a stable set of beliefs about the self that is protected by the individual.

³ Moos and Moos (1981) reported means of 6.61 (S.D. = 1.36) for the Cohesion subscale and 3.31 (S.D. = 1.85) for the Conflict subscale, for a sample of 1125 normal families.

⁴ The following scores on the CES-D have been reported for samples of employed women with incomes in the \$10,000 to \$15,000 range: $\bar{x} = 1.47$, $N = 165$ (Radloff, 1975), $\bar{x} = 1.55$, $N = 109$ (Yugas, Radloff, & Kessler, 1983), $\bar{x} = 1.55$, $N = 73$ (Repetti & Crosby, 1982).

Table 1
Correlations Between Mental Health and Work and Family Roles

	Mental Health Outcome	
	Depression	Anxiety
Work Role		
Work Social Climate	-.40**	-.40**
Supervisor Support	-.45***	-.43***
Job Satisfaction	-.31*	-.37**
Family Role		
Family Conflict	.38**	.24
Family Cohesion	-.44***	-.37**
Marital and Family Satisfaction	-.35**	-.42**

Note: N = 44. Probability levels are based on one-tailed tests because the alternate hypotheses are directional (Hays, 1981).

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Table 2

Results of Hierarchical Multiple Regression Analyses Testing

The Additive Model of Combined Work and Family Roles

Measure	Statistic	Mental Health Outcome	
		Depression	Anxiety
Total variance accounted for by six work and family predictors	\underline{R}^2 \underline{F}	.39 3.95**	.44 4.80***
Contribution of three work-role variables after controlling for three family-role variables	$\Delta \underline{R}^2$.17*	.22**
Contribution of three family-role variables after controlling for three work-role variables	$\Delta \underline{R}^2$.17*	.22**

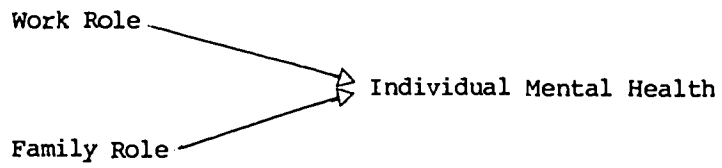
Note: N = 44.

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Figure 1

Two Models Describing the Relationship Between Individual Mental Health
And Work and Family Roles

Additive Model



Interactive Model

