

Work, Home, and In-Between: A Longitudinal Study of Spillover

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A longitudinal study of hospital-based health care professionals (N = 151) examined psychological states as a function of demands and resources in the workplace and at home. It found over the study interval (3 months) evidence of spillover relationships from the work to home environment, and to a lesser extent, evidence of spillover from home to work. A structural equation model focused on change, by including only relationships that enhanced the prediction of each measure beyond its inherent consistency across the study interval. Further, it considered relationships across the work and home domains in the context of relationships within each domain, so that spillover relationships were always in addition to domain-specific relationships. The analysis found health care workers' sense of professional efficacy to have the most wide-ranging relationships, with links within the work domain, the home domain, and the boundary between these two domains. The results suggest that in contrast with the lagged relationships of accomplishment with other constructs, the relationship of emotional exhaustion with dysfunctional coping responses occurs within an immediate time frame. The results are discussed in terms of an integrative model of work and family stress. The discussion makes suggestions for further research in this area.

The interaction of work and family presents challenging problems both conceptually and practically. The field focuses on two emotionally charged life domains, each of

This research was supported by a grant from the Social Sciences Research Council of Canada.

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JOURNAL OF APPLIED BEHAVIORAL SCIENCE, Vol. 32 No. 1, March 1996 29-47
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which has its own internal dynamics. Determining the impact of one domain on the other requires distinguishing their interactions from the complex influences occurring within each domain. This study uses a structural equation analysis of longitudinal data to clarify these relationships.

Both work and family domains are potentially stressful. The emotional, physical, and mental demands of roles within either domain may exceed an individual's coping resources. The interdependency between the two domains implies that strains experienced in one domain may also have an impact on experiences in the other domain. Spillover is a process in which stress in one domain accumulates within a person to be experienced in the other domain. In contrast, carryover is a process in which a person experiencing stress in one domain contributes to the strains experienced by other people in the second domain. In a complementary fashion, accomplishment or support in one domain may enhance a person's efficacy across domains.

Generally, the effects of the family on the worker have been investigated in the context of management studies (e.g., Gutek, Repetti, & Silver, 1988) focusing on the positive or negative influences of family life on career efficiency and advancement. For example, demands originating from the family, such as child care needs (Schultz, Chung, & Henderson, 1988), home conflict (Bolger, DeLongis, Kessler, & Wethington, 1989), overload (Gutek et al., 1988) have been shown to be related negatively to the individual's work role performance. In contrast, the effect of work on the family has been investigated by developmental psychologists and work-family sociologists (e.g., Piotrkowski, Rapaport, & Rapaport, 1987) interested in the fate of the family in the age of working mothers, sparked by concerns that working mothers could adversely affect the children and the family. The assumptions behind the research shaped the selection of constructs and the means of analysis to develop distinct research models.

Bartolome and Evans (1980) acknowledged that family experiences can have an impact on work, but proposed that work experiences are more likely to influence family. Essentially, these researchers suggested that although work intrudes on family on a daily basis, family affects work only in extreme circumstances such as career change and life decision. Using daily diaries and time series analysis, Bolger et al. (1989) were able to corroborate that the daily influence of work on family was more pronounced than the reverse. The focus of this study is spillover experienced by women working in a health care setting.

Burnout

Burnout is an occupational crisis encompassing the experience of stress with a crisis in self-efficacy. The principal measure of burnout—the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986)—assesses three dimensions: emotional exhaustion, depersonalization, and diminished personal accomplishment. Exhaustion is a response to the emotional demands of helping service recipients, whereas depersonalization is indicative of impoverished therapeutic relationships. Diminished personal accomplishment reflects human service professionals' doubts about their capacity to make a meaningful contribution through their work. Extremes on these dimensions in the

direction of burnout are indicative of a significant professional crisis; opposite scores appear to indicate a state of professional efficacy (Leiter, 1992a).

The MBI is well suited to an examination of spillover because it is highly specific to the context of human service work. Leiter and Durup (1994) through a confirmatory factor analysis demonstrated the distinction between burnout as a work-specific measure and depression as an emotional state relatively free of context. The MBI concentrates on the quality of the service relationship and the extent to which service providers perceive themselves as making a significant contribution to their work. A general measure of stress would leave ambiguity as to whether it was measuring a mood state that spanned all domains of an individual's experience, or feelings spilling over from one domain to another. The clear context specificity of the MBI permits the identification of relationships from the work to family domain.

Support Across Domains

Social support is a fundamental coping resource in that it provides people with a greater range of options when attempting to address demands (Hobfoll, 1989). According to House and Wells (1978), social support consists of frequent interactions, strong and positive feelings, and the availability of emotional and instrumental support when needed. Especially pertinent to interactions between work and family are the distinct social networks of the two domains. Within each domain, an individual interacts with a separate network of people, focusing on distinct issues with an emotional tone consistent with that domain. The nature and parameters of a supportive relationship differ between work and family. Research has confirmed that level of social support within each domain is related to an individual's experience of stress within that domain. Additionally, studies have demonstrated that experienced stress in either domain is related to the level of social support in the other (e.g., Durup, 1993; Leiter, 1990). This study identifies sources of social support within each domain to determine the extent to which support spills over from one domain to another.

The Present Study

The focus of this study was to identify relationships across domains over a 3-month time period. It assessed both positive and distressing experiences specific to the work domain and the family domain, using parallel measures within each domain. The study assessed marital satisfaction in the home domain as a parallel construct to exhaustion and personal accomplishment at work. The design included stressors and resources within each domain. It also assessed the boundary between work and family, as well as dysphoric mood as a subjective state that spanned the two domains.

The analysis investigates longitudinal relationships suggested by previous research that has been primarily cross-sectional. To provide a test of spillover relationships, confirmation of a relationship across domains must meet the stringent requirements of (a) a statistically significant path in a LISREL analysis, in addition to (b) the autocorrelation of the outcome measure with its counterpart at the first survey, and in addition to (c) relationships with other constructs within its own domain. For example,

a path from Time 1 work overload to the outcome measure of Time 2 marital satisfaction would have to make a statistically significant contribution in addition to the outcome measure's relationship with Time 1 marital satisfaction and with any other relevant Time 1 construct within the family domain. These conditions assure that cross-domain relationships are making a distinct contribution beyond that provided by the processes occurring within a given domain.

METHOD

Setting

The setting for this study was an 800-bed, tertiary care teaching hospital in eastern Canada. It is the major referral hospital for the region, providing highly specialized diagnostic and therapeutic services for the broader area, and general hospital services for people living in the immediate vicinity.

Participants

The participants were 151 female hospital workers with families, as defined by the presence at home of children, husband, or a partner with whom they had an enduring relationship. They included 89 nurses, 26 support staff, and 36 staff from occupational therapy, physical therapy, and social work. Experience on the job ranged from 1 to 31 years with an average of 8 years and a median of 4 years. The sample included 115 full-time and 36 part-time staff members. All participants were human service professionals about whom the burnout syndrome was originally conceived (Cherniss, 1980).

In the Time 1 assessment, 232 workers completed the questionnaire (78% response rate) that was the basis of a cross-sectional analysis (Durup, 1993). In the second assessment, 191 workers completed the package, but due to problems with the coding systems (people forgetting their code and failing to recall it with their reminder) and incomplete questionnaires at both times, only 151 fully complete Time 2 questionnaires could be matched with Time 1 questionnaires.

Instruments

Burnout. The most commonly used measure of burnout is the Maslach Burnout Inventory (MBI) developed by Maslach and Jackson (1986). The MBI is a 22-item scale in which items are scored using a Likert-type scale ranging from 0 (*never*) to 6 (*every day*) and are summed to provide a single score for each of three subscales. High scores on emotional exhaustion indicate feelings of emotional overextension and being worn out by one's work. High scores on depersonalization reflect a tendency to describe an unfeeling or impersonal response toward recipients of one's care or services and negative cynical attitudes and feelings about clients. Low scores on personal accomplishment reflect feelings of incompetence or ineffectiveness at work. Table 1 displays autocorrelations of the MBI subscales over various time lags in previous studies.

TABLE 1
Longitudinal Correlations of MBI Subscales From 1 to 12 Months

	<i>Interval</i>			
	<i>12 Months</i>	<i>8 Months</i>	<i>6 Months</i>	<i>1 Month</i>
Emotional exhaustion	.61	.74	.59	.82
Depersonalization	.56	.72	.50	.60
Personal accomplishment	.59	.65	.63	.80
Source ^a	JSS	LA	L	MJ

a. JSS = Jackson, Schwab, and Schuler (1986); LA = Lee and Ashforth (1993); L = Leiter (1990); MJ = Maslach and Jackson (1986).

Dysphoric mood. The Profile of Mood States (POMS), a self-report assessment of mood states (McNair, Lorr, & Doppleman, 1981), was used to measure dysphoric mood. The POMS is a 65-item inventory that can be completed in 5 minutes. Subjects are asked to rate on a 0-to-4 scale the extent to which they felt each of the adjectives during the previous week. The scores are organized into six mood states: tension-anxiety, depression-dejection, anger-hostility, fatigue-inertia, vigor-activity, and confusion. The POMS has been standardized to both clinical and normal populations, and has been used extensively in both clinical and research settings. This study used the summary score derived by summing the items with the vigor items reversed.

Work overload. A four-item measure of work overload was adapted from Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) by Leiter (1988) to assess task demands of health care work. The sum of the four items produces one score. Leiter (1988) reported an alpha of .79 for this measure. A sample item is, "How great is the amount of emotional strain your job puts on you?"

Work-family interference. Work-family interference was measured using two four-item scales. Work interference with the family (WIF) scale was developed by Kopelman, Greenhaus, and Connolly (1983). Another four items, paralleling the WIF items, were developed by Burley (1989) to assess family interference with work (FIW). Participants respond to items such as "My family/friends dislike how often I am preoccupied with my work while I am at home" (WIF) or "I'm often too tired at work because of the things I have to do at home" (FIW) on a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

Supervisor support. A contact rating scale (Leiter & Maslach, 1988) comprising items that measured instrumental and emotional support from central members of a worker's communication network provided a measure of supervisor support. Respondents rated their immediate supervisor/unit head on items such as "Gives me support when I need it," using a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Leiter and Maslach (1988) reported an alpha of .78 for the scale.

Family personal conflict. Personal conflict at home was measured with a five-item variation of an instrument developed by Leiter (1988) to measure conflict with

coworkers, supervisors, and service recipients at work. This scale was modified for this study to refer to people from respondents' personal lives to assess personal conflict at home. The sum of the five items, such as "I encounter conflict with other family members," produces one score.

Family and friend support. Social support from family and friends was measured by the Perceived Social Support scale developed by Procidano and Heller (1983). Total scores for family support and for friend support, with 20 items for each dimension, were used in this study. Each item consists of declarative statements, such as "My friends give me the moral support I need" or "My family enjoys hearing about what I think," measured by a response of "yes," "no," or "don't know." Items indicative of social support are scored 1, with the remaining two options scored as 0. The total number of items scored 1 are counted, resulting in a possible range from 0 (no perceived social support) to 20 (maximum perceived social support) from family and from friends. The authors reported high test-retest reliability ($r = .83$ over a 1-month interval) and internal consistency (Cronbach's $\alpha = .90$), with a correlation between two dimensions of .24.

Marital satisfaction. The Dyadic Adjustment Scale (DAS) provided the measure of satisfaction at home (Spanier, 1976). The DAS measures relationship satisfaction on four interrelated dimensions: dyadic consensus, dyadic cohesion, dyadic satisfaction, and affectional expression. Subjects are asked which series of statements best describe their marital relationship. The DAS has been shown to discriminate maritally distressed from nondistressed couples (Spanier, 1976) and to have alpha levels ranging from .73 to .94 in various samples. Only the dyadic satisfaction subscale was administered in this study. It includes items such as "In general, how often do you think that things between you and your partner are going well?" which are rated from 5 (*all the time*) to 0 (*never*).

Procedure

Contact was established with key individuals in middle and upper management positions who welcomed the study and offered support for this line of research in their departments and/or units. Management saw the study as a means of assessing the extent to which staff were distressed by conflict between work and family demands. They saw a better understanding of stress management as making a contribution to their initiatives to implement a total quality management program in the hospital. Participants saw the study as a means through which they could convey their concerns on a variety of issues to management. Participation in the study was completely voluntary and anonymous. Subjects generated their own code numbers for combining data over the two samples.

Subjects were recruited first through an information letter that was distributed to the department heads and head nurses to be posted for the perusal of all staff members. Second, the researchers requested time at departmental and ward staff meetings to discuss the research and answer questions during the weeks following distribution of the information letter. Each participant was requested to complete a participation form,

TABLE 2
Means, Standard Deviations, and Cronbach's Alphas for All Variables

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>α</i>
Time 1 emotional exhaustion	20.72	9.99	.87
Time 2 emotional exhaustion	19.27	8.93	.92
Time 1 depersonalization	5.64	4.95	.69
Time 2 depersonalization	5.53	4.79	.83
Time 1 personal accomplishment	36.17	6.84	.75
Time 2 personal accomplishment	35.43	7.25	.84
Time 1 marital satisfaction	36.09	8.70	.95
Time 2 marital satisfaction	37.19	7.36	.96
Time 1 dysphoric mood	52.35	21.64	.92
Time 2 dysphoric mood	46.92	19.38	.93
Time 1 work interference with family	11.05	3.59	.75
Time 2 work interference with family	10.62	3.56	.75
Time 1 family interference with work	6.51	2.40	.72
Time 2 family interference with work	6.40	2.23	.70
Time 1 work overload	13.87	2.14	.81
Time 2 work overload	13.54	2.50	.75
Time 1 supervisor support	47.64	10.22	.92
Time 2 supervisor support	47.90	10.12	.80
Time 1 family personal conflict	12.57	5.28	.74
Time 2 family personal conflict	11.48	4.87	.79
Time 1 friend support	32.21	6.73	.83
Time 2 friend support	32.70	2.23	.82
Time 1 family support	33.66	7.57	.96
Time 2 family support	32.70	6.79	.87

which clarified aspects of confidentiality and outlined the study. Data collection was completed over a period of 3 weeks (May 1991), during which time a researcher was available at the hospital to answer questions, assist subjects with unforeseen difficulties, and collect the completed questionnaires.

Three months later (August 1991), all participants were invited to complete a questionnaire package with the same measures. Identical procedures were used to distribute and collect questionnaires. A researcher was available in person and by telephone to assist respondents, particularly with recalling their code number. After data analysis, the researchers attended meetings of each organizational unit that participated in the study to summarize and discuss the study.

RESULTS

Table 2 displays the mean, standard deviation, and Cronbach's alpha for each variable in the study. The correlations among variables are in Table 3.

The analysis required a longitudinal spillover relationship to meet two criteria in addition to a statistically significant correlation. The first criterion was that spillover relationships across domains must exist in addition to relationships among comparable

TABLE 3
Correlations Among Variables

	1	2	3	4	5	6	7	8	9
Time 2									
1. Exhaustion									
2. Depersonalization	.53**								
3. Accomplishment	-.26**	-.40**							
4. Marital satisfaction	-.06	-.10	.11						
5. Dysphoric mood	.46**	.19**	-.05	-.28**					
6. Work overload	.49**	.24**	-.03	.01	.28**				
7. Work-family conflict	.55**	.36**	-.32**	-.12	.28**	.36**			
8. Supervisor support	-.42**	-.26**	.30**	.11	-.12	-.33**	-.33**		
9. Family-work conflict	.26**	.13	-.22	-.31**	.36**	.16	.21**	-.19*	
10. Friend support	-.23**	-.14	.19*	.12	-.14	.01	-.19*	.14	-.15*
11. Family conflict	.23**	.19*	-.11	-.40**	.44**	.25**	.32**	-.16*	.43**
12. Family support	-.15*	-.14	.12	.24**	-.21**	-.07	-.15	.20**	-.23**
Time 1									
13. Exhaustion	.75**	.33**	-.11	.04	.34**	.46**	.46**	-.39**	.14
14. Depersonalization	.47**	.64**	-.26**	-.09	.21**	.26**	.31**	-.35**	.07
15. Accomplishment	-.29**	-.31**	.62**	.14	-.05	-.02	-.27**	.30**	-.24**
16. Marital satisfaction	-.06	-.09	.10	.79**	-.22**	.04	-.05	.05	-.17*
17. Dysphoric mood	.50**	.37**	-.13	-.11	.52**	.27**	.33**	-.17*	.28**
18. Work overload	.37**	.26**	.01	.03	.16**	.63**	.29**	-.26**	.10
19. Work-family conflict	.49**	.21**	-.14	-.07	.28**	.26**	.61**	-.29**	.12
20. Supervisor support	-.35**	-.27**	.32**	.07	-.20**	-.22**	-.28**	.72**	-.14
21. Family-work conflict	.21**	.01	-.01	-.13	.23**	.18*	.29**	-.10	.51**
22. Friend support	-.18*	-.09	.15	.11	-.04	-.01	-.18**	.05	-.11
23. Family conflict	.24**	.16*	-.04	-.42**	.37**	.24**	.37**	-.17*	.34**
24. Family support	-.10	-.17*	.13	.36**	-.13	-.06	-.20**	.18*	-.26**

Note: Bold numbers signify Time 1/Time 2 autocorrelation.

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

predictors within a domain. The second criterion is that all longitudinal relationships among variables are assessed in the context of the outcome variables' stability over time. The relationship of two variables with one another over a study interval is an autocorrelation. When a study is examining stable conditions, the autocorrelations are often the largest correlations in the analysis. In light of the complex network of relationships within and across domains, the capacity of LISREL (Jöreskog & Sörbom, 1989) to assess all the relationships among all the variables simultaneously makes it appropriate to examine spillover relationships.

The first focus of this study was identifying Time 1 variables that enhance the prediction of constructs at Time 2 beyond the autocorrelation with the Time 1 measure of the constructs. Of particular interest in this analysis was the direction of the relationship. The inclusion of all variables in both panels of the analysis permitted a contrast between directional paths, such as contrasting a path from Time 1 emotional exhaustion to Time 2 supervisor support with one from Time 1 supervisor support to Time 2 emotional exhaustion. This design permitted the inclusion of either directional path or both paths into the model. A second focus was assessing the contribution of

TABLE 3 Continued

10	11	12	13	14	15	16	17	18	19	20	21	22	23

boundary constructs and spillover relationships from another domain to explaining relationships within a domain. The analysis assessed these cross-domain relationships in the context of relationships within each domain, and each variable's consistency over time.

Identifying Longitudinal Relationships

The analysis reported in Table 4 confirmed that the largest coefficients are those representing the autocorrelations of each variable across the 3-month interval. In the first phase of the analysis, an autocorrelation model comprising only paths from the Time 1 measure of each construct to its Time 2 counterpart was computed to provide reference points for the analysis. The second stage of the model development included domain-specific predictors, beginning with those established in previous research (Leiter, 1990, 1991, 1993). One notable departure from previous research was that the path from emotional exhaustion to depersonalization that invariably emerges during cross-sectional analyses and often in longitudinal analyses (e.g., Lee & Ashforth, 1993) was not significant in this analysis. Instead, a path from personal accomplish-

TABLE 4
Gamma Matrix: LISREL Estimates and Squared Multiple Correlations
for Structural Equations

Time 2 Variables	Time 1 Variables												R ²	
	1	2	3	4	5	6	7	8	9	10	11	12		
1. Exhaustion	.697						.147							.592
2. Depersonalization		.480	-.117		.123	.101								.412
3. Accomplishment			.616											.383
4. Marital satisfaction	.211		.132	.752			-.106				-.185			.708
5. Dysphoric mood				-.148	.307		.172				.137			.286
6. Work overload	.222					.502					.116			.450
7. Work-family conflict	.151		-.124				.457				.219			.468
8. Supervisor support	-.200							.662						.560
9. Family-work conflict			-.231	-.129					.484					.325
10. Friend support			.127							.817				.712
11. Family conflict											.665	-.178		.554
12. Family support											.147	.733		.640

ment to depersonalization improved the fit of model to the data. The analysis retained this latter path in the overall model.

Table 4 displays the statistically significant paths in the LISREL analysis in which the Time 1 measures of all variables were exogenous variables (i.e., those that are only predictors in the model) and the Time 2 measures of all variables were the endogenous variables (i.e., those that both contribute to the prediction of other variables and are the outcome variables for predictions).

The complexity of the relationships among the variables requires separate displays for the work domain Time 2 variables and the nonwork Time 2 variables. It is important to reiterate that they result from a single analysis of the full, integrated model. Figure 1 displays the predictors of work domain measures at Time 2. The relationships displayed are those that are statistically significant in addition to the autocorrelations shown on the main diagonal of the gamma matrix in Table 4; the autocorrelations are indicated by the coefficients next to the vertical arrows beneath each Time 2 variable. The unexplained error variance for each Time 2 variable is displayed on the far right of the figure.

The analysis indicated that predictors of work domain states are primarily, but not exclusively, in the work domain: emotional exhaustion, personal accomplishment, work overload. In addition to these relationships, the cross-domain construct of dysphoric mood contributed, along with personal accomplishment and work overload, as a predictor of depersonalization. The boundary construct of work interference with family was the sole additional predictor of Time 2 emotional exhaustion beyond Time 1 emotional exhaustion. The clearest example of home to work spillover was that family personal conflict contributed with emotional exhaustion to the prediction of work

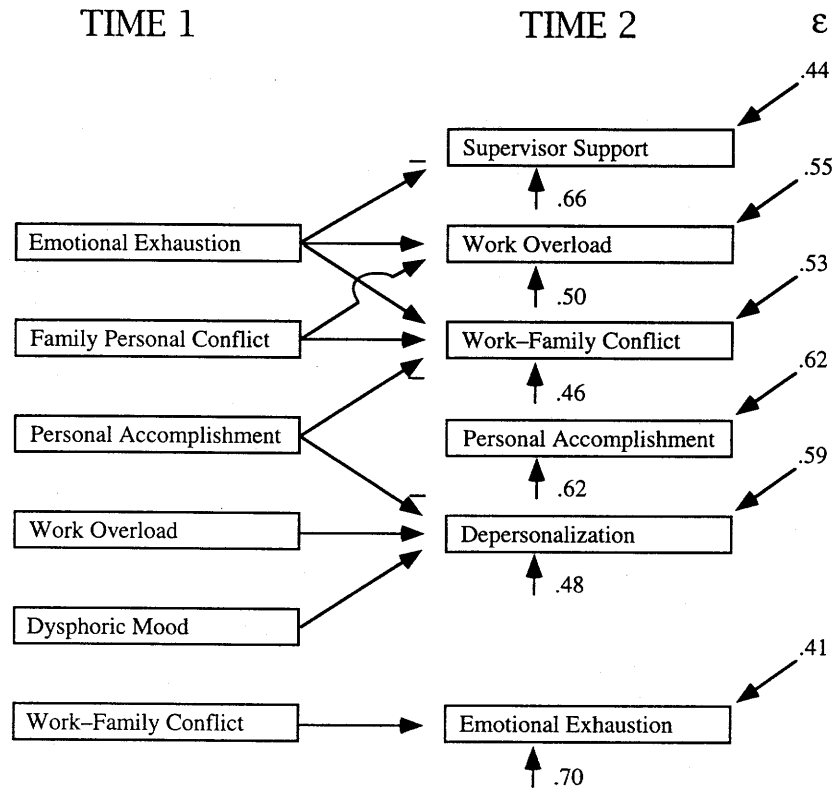


FIGURE 1: Significant Relationships: Work Domain Outcome

overload, and together with emotional exhaustion and personal accomplishment to the prediction of the boundary construct, work interference with family.

Figure 2 presents the predictors of Time 2 boundary and home states. As with the previous figure, the relationships displayed are those that are statistically significant in addition to the autocorrelations. The analysis found statistically significant paths from all of the predictors of work domain constructs in Figure 1, except for dysphoric mood.

This analysis indicated more evidence of relationships across domains. In addition, three family domain constructs—family support, friend support, and marital satisfaction—contributed as predictors. A balanced range of work domain, family domain, and the cross-domain construct of work interference with family contributed to the prediction of family domain constructs.

Two family domain constructs (marital satisfaction and family personal conflict) together with a boundary construct (work interference with family) contributed to predicting dysphoric mood. Family personal conflict and work interference with family, together with emotional exhaustion and personal accomplishment, enhanced the prediction of marital satisfaction beyond the autocorrelation. The major counter-

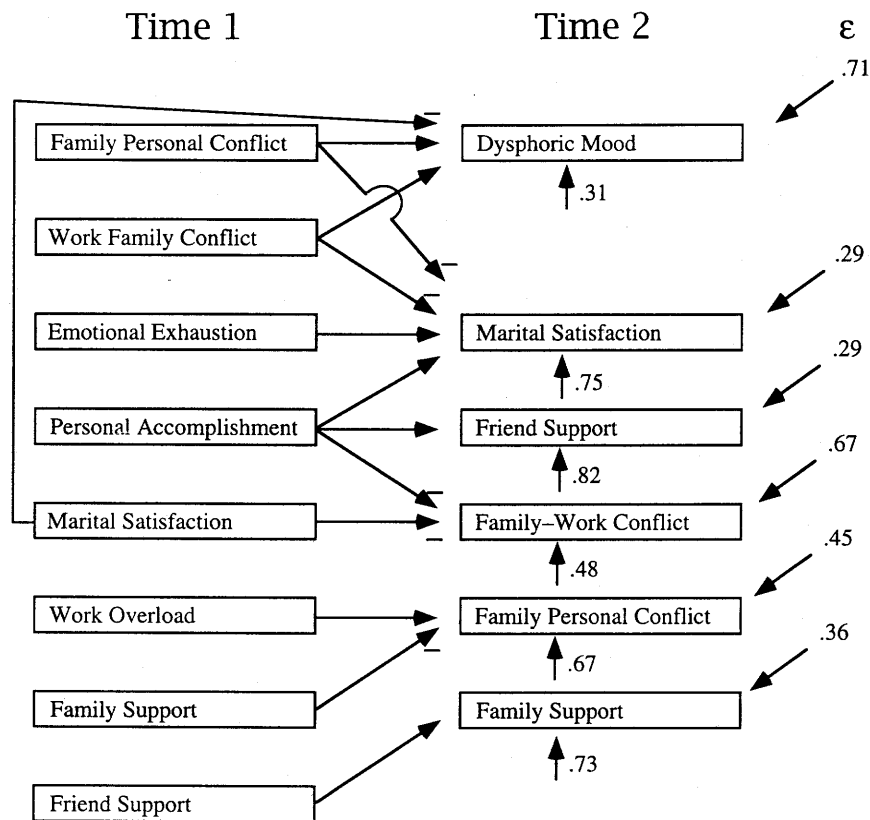


FIGURE 2: Significant Relationships: Home Domain Outcome

intuitive finding of the study was the positive relationship of Time 1 emotional exhaustion with Time 2 marital satisfaction. This is consistent with the simple positive correlation between these measures ($r = .04$), in contrast to the negative correlations between the constructs within each of the time periods ($r = -.01$, Time 1; $r = -.06$, Time 2). Personal accomplishment was the only predictor of friend support, whereas it joined marital satisfaction as a predictor of family interference with work. Both work overload and family support were predictors of family personal conflict. Friend support was the sole predictor of family support.

In this analysis, a few variables remained outside of the model. Time 1 family interference with work, depersonalization, and supervisor support did not enhance the prediction of any Time 2 construct. None of the variables enhanced the prediction of personal accomplishment beyond the autocorrelation.

Assessing Relationships Across Domains

Although the path coefficients discussed above help to assess specific components of a model, the overall quality of a model is indicated by goodness-of-fit indices. A

TABLE 5
Contrasts Among Models

<i>Model</i>	<i>df</i>	χ^2	<i>AGFI</i>	<i>p</i>	χ^2 <i>Difference</i>	<i>df</i>
Null	78	709.00	.000	.000		
Autocorrelation	132	251.29	.756	.000	457.71	54
Domain specific	123	192.41	.789	.000	58.88	11
Domain and boundary	115	139.78	.826	.040	52.63	8
Full model	110	106.25	.859	.034	33.53	5

series of analyses contrasted the goodness of fit of five models. The first two provided a reference point against which the other models are assessed. The simplest is a null model that specified no relationships among variables. Second, an autocorrelation model comprising only paths from each Time 1 variable to its state at Time 2 provided an indication of the extent to which the inherent stability of the variables in the study explained the results. These models provided a reference point for assessing three models of increasing complexity: a domain-specific model comprising only relationships within each domain, a domain-specific and boundary model comprising relationships within domains and with boundary variables, and a multiple domain model with all of the paths identified in the analysis above.

Bentler and Bonnett (1980) developed a means of determining whether one model is a clear improvement over a simpler model. They demonstrated that the difference in chi-square value of a model from that of a nested model—that is, a simpler model that includes only a subset of the paths in the more complex model—can be assessed with a chi-square test with the degrees of freedom equal to the difference in degrees of freedom between the two models. Mulaik et al. (1989) recommend this method to contrast the fit of structural models. The models described above are nested relative to one another. Table 5 displays these model contrasts, indicating each model's degrees of freedom, chi-square value, adjusted goodness of fit, and *p* level. The last two columns display the difference in chi-square value of a model from that of the preceding model, and the degrees of freedom of the chi-square difference test. Each of the four model contrasts is statistically significant, indicating that including the group of paths differentiating the models increases the quality of the models. The analysis confirmed that including predictors from both domains and the boundary provides a significantly more complete model than the model restricting relationships within each domain.

DISCUSSION

This study supported an integrated model of the interaction of work and family domains in the development of stress. Despite high levels of consistency on the measures over the 3-month study interval, the analysis identified significant relationships beyond the autocorrelations. Consistent with current research, the analysis found more evidence of associations from work to family than from family to work.

Boundary constructs also played an important role in the model. The results have implications for the design of studies in this field and for conceptual models of stress.

The LISREL analysis required spillover relationships to meet rigorous criteria beyond the presence of a statistically significant relationship. First, spillover relationships were assessed against the inherent stability of the constructs. The foci of this study were participants' enduring emotional states and perceptions of their environments or relationships. To a large extent, the current state is often the best predictor of future state. That is, a person who feels distressed at one time is likely to feel distressed at a later time unless an intervening event influences that emotional state. The analysis here identified relationships consistent with such influence. Second, the analysis assessed the contribution of cross-domain predictors in the context of relationships within each domain. The cross-domain predictors that emerged as significant in this analysis had to make a distinct contribution beyond the inertia of emotional states and the influence of the immediate environment.

This study confirmed the central role of emotional exhaustion in an employee's perception of the work environment. It contributed negatively to the prediction of supervisor support and positively to that of work overload and work interference with family. The relationship with work interference with family is the only reciprocal relationship supported in the model. It indicates both that people experiencing emotional exhaustion will be more likely to have more difficulty managing spillover from work to family in ensuing months, and that those with difficulty managing spillover from work to family will subsequently report more emotional exhaustion. This finding is consistent with the argument of Burke and Greenglass (1986) and Greenhaus and Parasuraman (1986) that the boundary of work and family presents demands distinct from those within each domain. In addition to emotional exhaustion, family personal conflict and diminished personal accomplishment contributed to the prediction of work interference with family. A breakdown in the work-family boundary is a signal of a variety of strains in both domains.

Family personal conflict was the only predictor specific to the family domain with direct relationships with the work domain. It contributed to the prediction of work overload as well as to work interference with family. Another predictor of Time 2 work states was dysphoric mood, which is a cross-domain construct, relatively free of context references. Along with work overload and personal accomplishment (negatively), it enhanced the prediction of depersonalization. These relationships make a distinct contribution to the model, indicating that the work domain is not completely buffered from outside demands. They suggest that active personal conflict, not simply an absence of support, is required before family concerns noticeably disrupt the work of health care providers. They also suggest that dysphoric mood may be the means through which people transport strains across domains.

Spillover from work made a much greater contribution to the prediction of family states than spillover from family did for work states. All of the work-specific measures except for depersonalization and supervisor support were related to the family domain. Specifically, work overload was related to family personal conflict, and work interference with family was related to marital satisfaction, as were emotional exhaustion and personal accomplishment. In contrast with the work domain in which emotional