

# Balancing Work and Home: How Job and Home Demands Are Related to Burnout

**Maria C. W. Peeters**

*Utrecht University*

**Anthony J. Montgomery**

*Aristotle University*

**Arnold B. Bakker and Wilmar B. Schaufeli**

*Utrecht University*

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*The aim of the present study was to make a clear distinction between work and home domains in the explanation of burnout. First, a 3-factor structure of job and home demands was hypothesized, consisting of quantitative demands, emotional demands, and mental demands. Next, a model was tested that delineates how demands in both life domains are related to occupational burnout through work–home interference (WHI) and home–work interference (HWI). In doing so, the partial mediating role of WHI and HWI was examined. Consistent with hypotheses, empirical support was found for the 3-factor structure of both job and home demands as well as for the partial mediating effects of both WHI and HWI. Job demands and home demands appeared to have a direct and indirect effect (through WHI and HWI, respectively) on burnout.*

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**KEY WORDS:** burnout; home demands; job demands; work–home interference; home–work interference

Changes in family structures, increasing participation by women in the workforce, and technological changes (e.g., mobile phones and portable computers) that enable job tasks to be performed in a variety of locations have blurred the boundaries between job and home life. For many workers,

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Maria C. W. Peeters, Arnold B. Bakker, and Wilmar B. Schaufeli, Department of Social and Organizational Psychology, Utrecht University, Utrecht, the Netherlands; Anthony J. Montgomery, Department of Economics, Aristotle University, Thessaloniki, Greece.

Correspondence concerning this article should be addressed to Maria C. W. Peeters, Utrecht University, Department of Social and Organizational Psychology, P.O. Box 80140, 3508 TC Utrecht, the Netherlands. E-mail: m.peeters@fss.uu.nl

this has created the potential for interference or conflict to occur between their work and nonwork lives (Hill, Miller, Weiner, & Colihan, 1998). From the perspective of role stress theory (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), Greenhaus and Beutell (1985) defined work-home conflict as “a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible, such that participation in one role makes it difficult to participate in the other” (p. 77). This definition implies a bidirectional dimension in that work can interfere with home (work-home interference; WHI) and home can interfere with work (home-work interference, HWI; Frone, 2003).

Studies by Frone, Russell, and Cooper (1992) and Netemeyer, Boles, and McMurrian (1996) provided factor analytic support for the distinction between WHI and HWI, suggesting that this distinction is not only implied by definition but is also observed empirically. In the current study, we try to replicate this factor analytic finding. *Hypothesis 1* is that confirmatory factor analyses will confirm the two-factor structure of negative interference (i.e., WHI and HWI). In addition, we propose a job- and home-demands model that delineates how demands in both life domains are related to occupational burnout through WHI and HWI.

## JOB DEMANDS AND HOME DEMANDS

The general definition of *job demands* refers to the degree to which the working environment contains stimuli that require some effort (Jones & Fletcher, 1996) and encapsulates the idea that job demands lead to negative consequences if they require additional effort beyond the usual way of achieving work goals (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Until recently, most studies concerning the relationship between job demands and strain have focused on quantitative demands (e.g., workload). One of the most prominent models in this area, Karasek's (1979) demand-control model has received critical attention with regard to the possible multifaceted nature of job demands. As a result, different types of job demands have been examined within the framework of the model (de Jonge, Mulder, & Nijhuis, 1999; Söderfeldt, Söderfeldt, Muntaner, O'Campo, Warg, & Ohlson 1996).

The need to evaluate a range of job demands is prompted by the fact that the nature of work is changing. Environmental, political, and sociocultural forces have contributed to the restructuring of work over the last half century (see Cooper, Dewe, & O'Driscoll, 2001, for a full discussion). For example, new technologies are one major reason for the emergence of new forms of working (Hesketh & Neal, 1999) and, consequently, new forms of mental job demands. In terms of emotional job demands, increasing numbers of people

are employed as service professionals today (e.g., customer service representatives, consultants). This suggests that the nature of work is changing in terms of demands for more mental and emotional effort (rather than physical effort alone).

Given this background and the fact that research suggests that work overload is one of the most important factors determining WHI (Aryee, 1992; Geurts, Rutte, & Peeters, 1999; Wallace, 1999), in the present study, we assess demands by dividing them into quantitative, emotional, and mental demands. *Quantitative job demands* refer to work overload or work pressure or too much work to do in too little time. *Emotional job demands* refer to the affective component of work and the degree to which one's work puts one in emotionally stressful situations. *Mental job demands* refer to the degree to which work tasks call on a person to expend sustained mental effort in carrying out his or her duties. *Hypothesis 2a* predicts that factor analyses will confirm the three-factor structure of job demands.

A more complete picture of how individuals balance work and home responsibilities is aided by evaluating the potential impact of *home demands* on outcomes. Traditionally, the WHI literature has measured predominantly structural home demands such as the number of children, whether the partner has a job, and child care arrangements. However, a recent literature review of structural variables (Montgomery, 2003) has indicated that there is little evidence to link them to either WHI or HWI. This does not imply that the more traditional demands should be ignored in future studies; it merely signifies a desire to examine the home side of the work–family nexus in more psychological detail.

The present study aimed at providing a more balanced view of work and home by designing a set of subscales that roughly mirror the job demands scale. Therefore, home demands were operationalized by three subscales: quantitative home demands, emotional home demands, and mental home demands. Using a job-related measure as a model for constructing a symmetrical home-related measure has previously been used successfully (e.g., Frone & Rice, 1987; Montgomery, Peeters, Schaufeli, & Den Ouden, 2003; Parasuraman, Purohit, & Godshalk, 1996). *Hypothesis 2b* predicts that factor analysis will confirm the three-factor structure of home demands.

## WHI, HWI, AND BURNOUT

*Burnout*, referring to the draining of mental resources caused by chronic job stress, is considered a work-related indicator of psychological health (Schaufeli & Enzmann, 1998). A large body of research has identified both job demands and WHI as antecedents of burnout. More specifically, it can be

assumed that certain job stressors cause WHI and as a result lead to impaired psychological health (including burnout). This hypothesis (also referred to as the mediation hypothesis) can be quite well explained by the effort–recovery (E-R) model (Geurts & Demerouti, 2003; Meijman & Mulder, 1998). According to this model, the quantity and quality of recovery plays a crucial role. The central idea is that job demands that require too much effort are associated with the building up of negative load effects that spill over to the home domain. As a consequence, it will be more difficult to recover at home sufficiently from the effort one has put forth into the job. In the end, this will increase the possibility that job demands harm psychological health.

Until now, many studies have provided evidence for a mediating role of WHI in the stressor–strain relationship (e.g., Geurts et al., 1999; Geurts, Kompier, Roxburgh, & Houtman, 2003; Janssen, Peeters, de Jonge, Houkes, & Tummers, 2004; Kinnunen & Mauno, 1998; Parasuraman et al., 1996). In accordance, it is assumed that high job demands are related to negative WHI (*Hypothesis 3a*) and, consequently, to burnout (*Hypothesis 3b*). An equivalent line of reasoning also can be applied to the relationship between home demands, HWI, and burnout. Accordingly, home demands that require too much effort are associated with the building up of negative load effects that spill over to the work domain. As a consequence, it can be predicted that high or negative home demands are related to negative HWI (*Hypothesis 4a*) and, consequently, to burnout (*Hypothesis 4b*). Although most research on spillover has focused on WHI (instead of HWI), research findings consistently support that work characteristics are the most important antecedents of WHI, whereas home characteristics are the main antecedents of HWI (see Frone, 2003, for a review). Apparently, WHI and HWI are predominantly driven by demands in the domain in which the interference originates.

As there are strong grounds for believing that WHI and HWI may only play a partially mediating role, it is also important to establish direct effects between job and home demands on the one hand and burnout on the other hand. First, given the fact that some demands are contextual (e.g., e-mails from colleagues, or phone calls from clients, who are never present in one's home life), it is less likely that all job demands will interfere with home and vice versa. Second, there is accumulating evidence to suggest that job demands have a strong and direct relationship with outcomes such as burnout (see meta-analysis of Lee & Ashforth, 1996). Third, anthropological studies of the way in which people separate work and home suggest that some people separate and compartmentalize aspects of their work and home domains (Nippert-Eng, 1996), arranging their lives in such a way that aspects of one domain do not interfere with the other. Therefore, we predict that job demands will have a direct relationship with burnout (*Hypothesis 3c*), in addition to the indirect effect through WHI (see Hypotheses 3a and 3b). In a similar vein, we predict that home demands will have a direct relationship

with burnout (*Hypothesis 4c*), in addition to the indirect effect through HWI (see *Hypotheses 4a* and *4b*).

## ROLE OF GENDER

Several scholars have suggested that gender may represent an important moderator variable of the work–home interference process (e.g., Eckenrode & Gore, 1990; Lambert, 1990). However, so far, research has found no systematic gender differences with regard to reported levels of WHI and HWI (Geurts et al., 1999; Kinnunen & Mauno, 1998). Overall, the evidence for gender differences is mixed (Frone, 2003; Geurts & Demerouti, 2003; Milkie & Peltola, 1999). Such results are in stark contrast to what one would predict on the basis of gender-role expectations. The literature concerning gender-role expectations suggests that men and women could experience job and home demands in different ways. Consequently, men may be prompted to feel that they must cope with job demands better than they must cope with home demands (relative to women). Conversely, gender-role theory suggests that the opposite may be true for women. Because it is difficult to formulate a firm hypothesis about the role of gender in the relationship between work, home, and burnout, in the present study, we explore the generalizability of gender across the proposed model.

## METHOD

### Participants

Of the 1,264 respondents (after preliminary data screening) who filled out the study questionnaire, 737 (58%) were men, and 527 (42%) were women. Participants ranged in age from 20 to 69 years ( $M = 34$ ,  $SD = 7.7$ ). On average, women were significantly younger ( $M = 31$ ,  $SD = 7.09$ ) than men ( $M = 35$ ,  $SD = 8.02$ ),  $t(1,214) = 7.80$ ,  $p < .001$ . The majority of the participants (76%) lived with a partner, and 42% had a supervisory position (70% of those with a supervisory position were men). In total, 77% reported having a partner with a paid function, and 42% had children living at home. No statistical differences were found between men and women with regard to reported levels of WHI, HWI, or burnout. With regard to demands, women reported higher mean levels of emotional job demands (for women,  $M = 1.77$ ,  $SD = 0.73$ ; for men,  $M = 1.67$ ,  $SD = 0.69$ ),  $t(1,262) = 2.33$ ,  $p < .05$ ; quantitative home demands (for women,  $M = 2.45$ ,  $SD = 0.78$ ; for men,  $M = 2.12$ ,  $SD = 0.75$ ),  $t(1,262) = 7.54$ ,  $p < .01$ ; and mental home demands (for

women,  $M = 2.07$ ,  $SD = 0.80$ ; for men,  $M = 1.76$ ,  $SD = 0.70$ ),  $t(1,262) = 7.27$ ,  $p < .01$ .

### Procedure

Participants were recruited by means of advertising on the Web site of a popular Dutch career management magazine. Previous to this study, the Internet has been shown to be a valid source of data collection (Bakker, Demerouti, & Schaufeli, 2002). After filling out an electronic questionnaire, respondents were informed online about their work–life balance and received feedback that was automatically tailored to their own scores.

The study questionnaire was advertised by means of a graphic “banner” that provided a link to the Web site of the questionnaire. The banner was a rectangular shaped advertisement on the front page, entitled “Test the balance in your work and home life.” Below this headline, a small informational paragraph was included:

Do you have enough time available for your work as well as for your private life? Or is one or the other giving you trouble all the time? Check your personal balance now. In addition to your personal score you will receive tips and advice. Please fill out the test.

The banner remained on the Web page for a period of 4 weeks.

### Measures

The Web-based questionnaire comprised 79 questions with drop-down response categories. Technical considerations and the nature of the Internet as a research tool suggested that it was important to keep the questionnaire as short as possible. Therefore, the included scales were shortened versions of their originals. Stanton, Sinar, Balzer, and Smith (2002) encouraged researchers to offer reduced-length versions of measures and suggested an exhaustive list of strategies to do so. Essentially, Stanton et al. (2002) recommended that researchers reduce scales on the basis of indices of internal, external, and judgmental item qualities. In accordance with this recommendation, our selection of shortened versions was based on psychometric considerations, with the most reliable (internal item quality) and face-valid items included (judgmental). In addition, the shortened scales correlated well with originals (external).

### *WHI and HWI*

WHI and HWI were measured using the Survey Work–Home Interference Nijmegen (SWING). The SWING is a 27-item WHI measure developed by researchers in the Netherlands (Wagena & Geurts, 2000). Many items in the WHI scale are congruent with the scales of Netemeyer et al. (1996) and Kopelman, Greenhaus, and Connolly (1983). In the present research, the two types of interference were measured using three items each: WHI (e.g., “How often do you find it difficult to fulfill your domestic obligations because you are constantly thinking about work?”;  $\alpha = .73$ ); HWI (e.g., “How often do you arrive late at work because of domestic obligations?”;  $\alpha = .70$ ). All items were scored on a 5-point frequency scale ranging from 1 = *never* to 5 = *always*.

### *Burnout*

The present study was restricted to the exhaustion and cynicism dimensions of burnout. These two dimensions are generally considered as the “core of burnout” (Demerouti et al., 2001; Green, Walkey, & Taylor, 1991), whereas (reduced) professional efficacy reflects more a personality characteristic rather than a genuine burnout component (Cordes & Dougherty, 1993; Shirom, 2003). Empirically, this is reflected by the relatively low correlation of professional efficacy with both of the other burnout dimensions (Lee & Ashforth, 1996) and by the fact that cynicism seems to develop in response to exhaustion, whereas professional efficacy seems to develop independently and in parallel (Leiter, 1993). Burnout was assessed with the Dutch version (Schaufeli & Van Dierendonck, 2000) of the Maslach Burnout Inventory—General Survey (MBI–GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). Two subscales of the MBI–GS were assessed: Exhaustion (five items; e.g., “I feel used up at the end of the workday”;  $\alpha = 0.92$ ) and Cynicism (four items; e.g., “I have become less enthusiastic about my work”;  $\alpha = .86$ ). All items are scored on a 7-point frequency rating scale ranging from 0 (*never*) to 6 (*daily*). High scores on the Exhaustion and Cynicism subscales are indicative of burnout.

### *Job Demands*

Job demands were measured using three scales taken from the Dutch Questionnaire on the Experience and Evaluation of Work (Van Veldhoven, de Jonge, Broersen, Kompier, & Meijman, 2002): Quantitative Job Demands

(four items; e.g., “Do you have to work very fast?”), Emotional Job Demands (four items; e.g., “Is your work emotionally demanding?”), and Mental Job Demands (four items; e.g., “Must you be very precise in your work?”). All items are scored on a 4-point scale (1 = *never*, 4 = *always*). Reliability analyses showed good values for the Quantitative Job Demands scale, Emotional Job Demands scale, and Mental Job Demands scale ( $\alpha = .88$ ,  $\alpha = .86$ , and  $\alpha = .89$ , respectively).

### *Home Demands*

Given that no suitable instrument was identified for the measurement of home demands, it was decided to construct a specific Home Demands Scale for the purpose of this study. The scale was constructed in such a way as to conceptually mirror the subscales of the Job Demands Scale. Therefore, the Home Demands Scale consisted of a Quantitative Home Demands scale (three items: “Do you find that you are busy at home?” “Do you have to do many things in a hurry when you are at home?” and “Do you have to carry out a lot of tasks at home [household/caring tasks]?”); an Emotional Home Demands scale (three items: “How often do emotional issues arise at home?” “How often does your housework confront you with things that touch you personally?” and “How often do you get frustrated about things concerning your home-life?”); and a Mental Home Demands scale (four items: “Do you find that you have to plan and organize a lot of things in relation to your home life?” “Do you have to remember a lot of things with regard to your home life?” “Do you have to do many things simultaneously at home?” and “Do you have to coordinate everything carefully at home?”). Internal consistencies of the Quantitative Home Demands scale, Emotional Home Demands scale, and the Mental Home Demands scale were good ( $\alpha = .80$ ,  $\alpha = .76$ , and  $\alpha = .80$ , respectively).

## **RESULTS**

### **Confirmatory Factor Analyses**

According to Hypothesis 1, confirmatory factor analysis (CFA) will confirm a two-factor structure of negative interference (i.e., HWI and WHI). To test this hypothesis, we performed CFA using the AMOS software package (Arbuckle, 1997). The fit of the model was assessed with the goodness-of-fit index (GFI) and the root-mean-square error of approximation (RMSEA). Furthermore, the normed fit index (NFI), the comparative fit

index (CFI), and the incremental fit index (IFI) were utilized. In general, models with fit indices greater than .90 and an RMSEA less than .08 indicate a close fit between the model and the data (Browne & Cudeck, 1993; Hoyle, 1995).

The proposed two-factor structure of negative interference was supported by the results of the CFA. The model with two factors (WHI and HWI) fits significantly better to the data than a one-factor solution,  $\Delta\chi^2(1) = 755.41$ ,  $p < .001$ . In addition, as can be seen in Table 1, all the fit indices as well as the RMSEA are satisfactory and higher for the two-factor model than for the one-factor model. Thus, CFA supported Hypothesis 1: WHI and HWI can be distinguished both conceptually and empirically.

According to Hypothesis 2, CFA will confirm the three-factor structure of job demands (Hypothesis 2a) and of home demands (Hypothesis 2b). We tested this three-factor structure against a one- and two-factor structure. In the one-factor structure, all the items were added together. In the two-factor structure, we composed a factor consisting of the emotional demand items and another factor consisting of both the mental and quantitative demand items, because the latter intercorrelations appeared to be the highest (for job demands,  $r = 0.63$ ,  $p < .01$ ; for home demands,  $r = 0.69$ ,  $p < .01$ ). As can be seen in Table 1, for both job demands and home demands, the three-factor structure fit best to the data. All the fit indices as well as the RMSEA are higher for the three-factor model than for the one-factor and two-factor models. Thus, CFA supported both Hypothesis 2a and 2b, indicating that job demands consist of three dimensions: quantitative job demands, emotional job demands, and mental job demands. Home demands appear to consist of quantitative home demands, emotional home demands, and mental home demands.

**Table 1.** Results of Confirmatory Factor Analysis, Standardized Maximum Likelihood Estimates ( $N = 1,264$ )

Model	$\chi^2$	$df$	$\Delta\chi^2$	$\Delta df$	GFI	IFI	NFI	CFI	RMSEA
Work-home balance									
One-factor model	803.19	9			.83	.61	.61	.61	.26
Two-factor model	47.78	8	755.41	1	.99	.98	.98	.98	.06
Job demands									
One-factor model	2,732.94	54			.70	.67	.70	.70	.20
Two-factor model	2,133.96	53	598.98	1	.76	.75	.77	.77	.18
Three-factor model	361.15	51	1,772.81	2	.95	.97	.96	.97	.07
Home demands									
One-factor model	941.70	35			.84	.86	.85	.85	.14
Two-factor model	537.27	34	404.43	1	.91	.92	.92	.92	.11
Three-factor model	287.48	32	249.79	2	.95	.96	.95	.96	.08

*Note.*  $df$  = degrees of freedom;  $\Delta\chi^2$  = chi-square difference; GFI = goodness-of-fit index; IFI = incremental fit index; NFI = normed fit index; CFI = comparative fit index; RMSEA = root-mean-square error of approximation.

### Descriptive Statistics

Table 2 provides the means, standard deviations, and correlation coefficients of the study variables. Respondents reported significantly higher levels of WHI in comparison with HWI,  $t(2,526) = 23.91$ ,  $p < .001$ . As expected, WHI is positively correlated with HWI ( $r = .31$ ,  $p < .01$ ), indicating that both constructs are somewhat related. WHI was moderately correlated with exhaustion ( $r = .50$ ,  $p < .01$ ) and weakly with cynicism ( $r = .22$ ,  $p < .01$ ). HWI was moderately correlated with both exhaustion ( $r = .34$ ,  $p < .01$ ) and cynicism ( $r = .33$ ,  $p < .01$ ). Of the three job demands, the quantitative job demands appeared to correlate strongest with WHI ( $r = .39$ ,  $p < .01$ ). Of the three home demands, emotional home demands showed the highest correlation with HWI ( $r = .42$ ,  $p < .01$ ). All the other correlations between the model variables were significant and in the expected direction as well.

Comparison between mean levels of burnout of the respondents in this study with the mean levels of burnout of a representative group of 1,111 Dutch working people from the Utrecht Burnout Manual (Schaufeli & Van Dierendonck, 2000) indicated that the respondents in the present study had higher mean levels of exhaustion ( $M = 2.78$  and  $SD = 1.11$  vs.  $M = 1.78$  and  $SD = 1.21$ ),  $t(2,268.56) = 20.89$ ,  $p < .001$ , and cynicism ( $M = 2.49$  and  $SD = 1.19$  vs.  $M = 1.34$  and  $SD = 1.13$ ),  $t(2,373) = 24.06$ ,  $p < .001$ .

**Table 2.** Means, Standard Deviations, and Correlations Between the Model Variables  
( $N = 1,264$ )

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. WHI	2.15	0.81	—									
2. HWI	1.46	0.63	.31	—								
3. Quantitative job demands	2.52	0.82	.39	.12	—							
4. Emotional job demands	1.71	0.71	.29	.17	.46	—						
5. Mental job demands	2.97	0.82	.22	.14	.63	.48	—					
6. Quantitative home demands	2.26	0.78	.21	.27	.32	.30	.39	—				
7. Emotional home demands	1.66	0.65	.23	.42	.31	.35	.40	.49	—			
8. Mental home demands	1.89	0.76	.16	.30	.30	.27	.41	.69	.55	—		
9. Exhaustion	2.78	1.11	.50	.34	.45	.46	.40	.39	.40	.34	—	
10. Cynicism	2.49	1.19	.22	.33	.22	.30	.23	.31	.30	.28	.64	—

*Note.* All correlations are significant at the  $p < .01$  level. WHI = work-home interference; HWI = home-work interference.

Model Testing for the Full Sample

According to our research model (see Figure 1), job demands are most predictive of WHI (Hypothesis 3a) and, consequently, of burnout (Hypothesis 3b), whereas home demands are most predictive of HWI (Hypothesis 4a) and, consequently, of burnout (Hypothesis 4b). In addition, as WHI and HWI will only partially mediate the relation between job and home demands on the one hand and burnout on the other hand, we predicted that job demands and home demands will also have a direct relationship with burnout (Hypothesis 3c and 4c, respectively).

To test these hypotheses, we performed a series of structural equation modeling (SEM) analyses. The results of these analyses show that the hypothesized or proposed model (M1) does not adequately fit the data (see Table 3). Most of the fit indices have values lower than .90, and the RSMEA is .10. AMOS modification indices suggested to add a path between job demands and home demands. Indeed, model fit appeared to improve when job and home demands were allowed to covary,  $\Delta\chi^2(1) = 315.26, p < .001$  (see Model 2 in Table 3). Finally, an examination of the modification indices revealed that the overall fit of Model 2 could not be substantially improved by freeing any of the remaining paths that were constrained to equal zero. At this point, satisfaction with the content of the model has been achieved. RMSEA (.08) indicates that some model improvement is still possible;

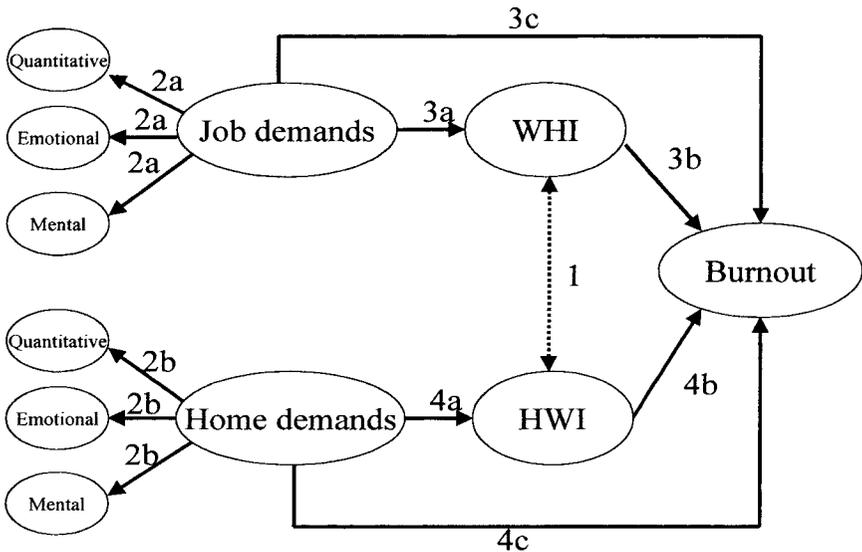


Figure 1. Theoretical model. Numbers correspond with the hypotheses. WHI = work-home interference; HWI = home-work interference.

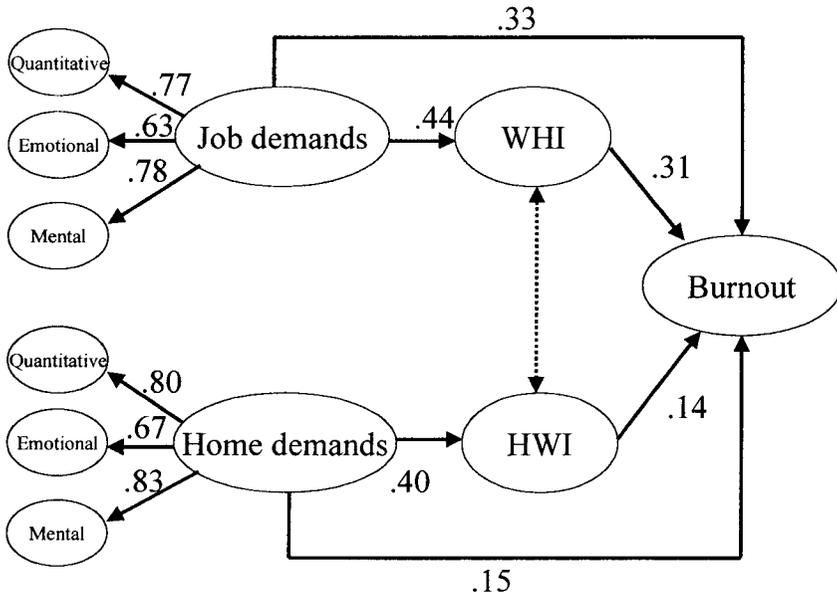
**Table 3.** Results of Structural Equation Modeling: Fit Indices for the Hypothesized Model and the Alternative Models, Standardized Maximum Likelihood Estimates ( $N = 1,264$ )

Model	$\chi^2$	$df$	$\Delta\chi^2$	$\Delta df$	$p$	GFI	IFI	NFI	CFI	RMSEA
M0. Null	6,822.94	91				.43	.00	.00	.00	.24
M1. Research	957.93	71	5,865.01	20	.00	.91	.87	.86	.87	.10
M2. Modified	642.67	70	315.26	1	.00	.93	.92	.91	.92	.08

Note.  $df$  = degrees of freedom;  $\Delta\chi^2$  = chi-square difference, GFI = goodness-of-fit index; IFI = incremental fit index; NFI = normed fit index; CFI = comparative fit index; RMSEA = root-mean-square error of approximation.

however, the modification indices no longer show theoretically defensible modifications that provide a large enough improvement. The null model (M0) was the independence model in which covariation among all the variables was constrained to zero.

Parameter estimates for Model 2 are shown in Figure 2. All relationships in the model appear to be significant and in the expected direction. The coefficients of the paths from job demands to WHI and from home demands to HWI were positive and significant (Hypotheses 3a and 4a). In turn, both WHI and HWI were negatively related to burnout (Hypotheses 3b and 4b). These findings strongly support our hypotheses that those employees who are exposed to high or badly designed job demands experience the most negative interference between work and family life and report



**Figure 2.** Standardized path coefficients for Model 2. WHI = work–home interference; HWI = home–work interference.

the most feelings of burnout. In addition, when exposed to high home demands, employees report more negative interference from their family life to the work situation, which coincides with more feelings of burnout as well.

As predicted, job demands and home demands also had a direct positive relationship with burnout (Hypotheses 3c and 4c), indicating that WHI partially mediates the relationship between job demands and burnout and, additionally, that HWI partially mediates the relationship between home demands and burnout.

De Jonge, Peeters, Hamers, Van Vegchel, and van der Linden (2003) have questioned the role of WHI/HWI as a mediator in the job stress literature and suggest that WHI and HWI might also be independent variables in the stress process. To test this alternative model that WHI is related to job demands and that HWI is related to home demands, we recalculated the model with WHI and HWI as independent variables and job demands and home demands as mediator variables. Compared with our final model, there was a significant increase in the chi square, and the fit indices indicated a worse fit: alternate model,  $\chi^2(67) = 744.68$ , GFI = .92, IFI = .90, NFI = .89, CFI = .90, RMSEA = .09.

### Role of Gender

To examine whether the findings based on the full sample were invariant across gender, differences between constrained and unconstrained models were examined. Using the Byrne (2001) approach, equality constraints were specified in each group (men and women) for factor loadings on burnout, WHI, HWI, job demands, and home demands, respectively. Factor loadings were incrementally constrained until a significant difference in chi square was found (full results available from Anthony J. Montgomery). Significant differences were found between the unconstrained model and the constrained models (men,  $n = 737$ ; women,  $n = 527$ ),  $\Delta\chi^2(17) = 62.50$ ,  $p < .001$ . This suggests that one or more of the individual parameter estimates varied across the two groups. Sequential examination of the factor loadings revealed that men and women were not invariant across job demands, WHI, and HWI. Second, examination of the parameter estimates revealed that WHI was more strongly associated with burnout for women ( $\beta = .42$ ,  $p < .01$ ) compared with men ( $\beta = .22$ ,  $p < .01$ ). For men, home demands had a more substantial direct relationship with burnout ( $\beta = .21$ ,  $p < .01$ ), as compared with women ( $\beta = .05$ ,  $p < .01$ ).

## DISCUSSION

Searching for an optimal balance between work and home is a process in which increasing numbers of workers are involved. Besides the experience of demands in the work domain, it is very likely that workers experience demands in the home domain as well. The aim of the present study was to test a model that delineates how demands in both life domains are related to occupational burnout. Next to distinguishing home and job demands, we also sought to differentiate between work–home interference (WHI) and home–work interference (HWI). In doing so, the mediating role of WHI and HWI was examined in the relationship between job and home demands on the one hand and burnout on the other.

In general, the results provided support for our hypothesized model. First, in line with results from Frone et al. (1992) and Netemeyer et al. (1996), CFAs supported Hypothesis 1 that WHI and HWI can be distinguished not only conceptually but also empirically. In addition, CFAs also supported Hypotheses 2a and 2b, in which a three-factor structure of job demands and home demands was assumed. Both job demands and home demands could be characterized by quantitative demands, emotional demands, and mental demands. Assessing job and home demands in a detailed way is a response to researchers who call for a broadening perspective on demands (de Jonge et al., 1999; Le Blanc, Bakker, Peeters, Van Heesch, & Schaufeli, 2001). Furthermore, examining the home side of the work–family nexus in more psychological detail helps to widen the debate beyond the structural characteristics of the home domain. For example, the sole fact that one has children does not matter so much. It is the extent to which having children contributes to quantitative, emotional, and/or mental home demands that counts. For instance, on one hand, children demand considerable attention and time from their parents, which might bring parents into time-related conflicts. On the other hand, most parents worry about their children from time to time, which might contribute to the experience of emotional demands at home. These feelings and experiences need to be addressed, particularly because they give us more detailed insight into the “why” question.

Consistent with Hypotheses 3 and 4, we found empirical support for partial mediating effects of both WHI and HWI in the relation between job and home demands on the one hand and burnout on the other hand. Both job demands and home demands appeared to have direct and indirect effects (through WHI and HWI, respectively) on burnout. A finding of partial mediation is in line with other recent studies on this issue (Geurts et al., 2003; Janssen et al., 2004; Peeters, de Jonge, Janssen, & van der Linden, 2004). The fact that both job demands and home demands have a direct effect on burnout (apart from their relationship with WHI and HWI) seems to suggest that

certain demands are indeed domain specific and less likely to interfere between domains. For example, certain demands such as answering the phone at work and responding to e-mails may only be an issue within an individual's work setting and therefore less likely to cause interference from work to home.

The observed gender differences in the present study are in disagreement with previous studies that have tested for and found no gender differences in work-home interference models (Bedeian, Burke, & Moffet, 1988; Frone et al., 1992). Our results suggest that men and women experience WHI and HWI in somewhat different ways. Of particular interest is the fact that WHI was more strongly related to burnout for women. This may suggest that, at least for Dutch working women, higher levels of WHI make it more likely they will suffer from burnout; such a finding is in agreement with gender socialization theory (Barnett & Rivers, 1998) and suggestive of the fact that women must tackle the double burden of work and home (more than men). Indeed, the fact that, for men, *home demands* were strongly related to burnout may suggest that the men in our sample were less able to cope with the strains of home.

The current research has limitations. First, the present study is cross-sectional, and thus the postulated relationships cannot be interpreted causally. Longitudinal studies and/or quasi-experimental research designs are needed to further validate the hypothesized causality of the relationships (for a good example, see Demerouti, Bakker, & Bulters, 2004). Second, with regard to the assessment of mediation, in the present study all of the variables measured (demands, WHI/HWI, and burnout) were in fact appraised and thus measured subjectively. This might have introduced common method variance as an alternative explanation for the findings. Therefore, we should keep in mind that it is difficult to demonstrate a real mediational effect in time. Third, it has been recognized that WHI can also be positive in the way that participation in multiple roles provides a greater number of opportunities and resources to the individual that can be used to promote growth and better functioning in other life domains (Grzywacz & Marks, 2000). However, the concept of positive interference between work and home was not accounted for in this research because of the need to keep questionnaire length reasonable for use on the Internet. Finally, only burnout was included as a dependent measure. It would have been interesting to relate the work-home balance questionnaires and Home Demands scales to more home-related dependent measures.

Using the Internet as a research tool has both advantages as well as disadvantages. An advantage in using Internet-mediated research is that it can provide large amounts of data in a short time, at very little cost. However, as a research tool, the Internet is difficult to control, and it is impossible to obtain information about nonresponders in this type of sample. It is conceiv-

able that the people who filled in the questionnaire were the most motivated and therefore not representative of the total population of people in the Netherlands who have WHI problems. In this sense, the results of the research may be most pertinent to people from the upper strata of society who have access to the Internet. Although the Internet *can* provide increased heterogeneity and representativeness, this advantage can come with a cost. The Internet may introduce unknown confounding variables that might have the effect of increasing “noise” in the data and reducing the proportion of variance in responses accounted for by differences in the causal entity that one is trying to measure. With that said, the Internet is increasingly being used as a tool to conduct psychological research (e.g., Bakker et al., 2002; Buchanan & Smith, 1999; Smith & Leigh, 1997).

The practical importance of WHI (and HWI) is highlighted by a national U.S. study (Bond, Galinsky, & Swanberg, 1998) that found that 85% of employees have some day-to-day family responsibility and that virtually identical proportions of men and women report WHI problems. Furthermore, evidence from the United States has indicated that employees with WHI/HWI problems are three times more likely to consider quitting (Johnson, 1999). In addition, employees who believe that work is causing problems in their personal lives are much more likely to make mistakes at work (30%) compared with those who have a few job-related personal problems (19%; Johnson, 1995). Thus, the corporate world must expand its conception of why it needs to be concerned about WHI/HWI related issues. Both Friedman (1999) and Johnson (1999) have observed that corporations will require extraordinarily committed and creative employees to permit them to survive and prosper in turbulent and highly competitive markets. To promote such energy and commitment, employers must demonstrate concern with both the working life as well as the private life of a person. The present study found that, for men in particular, home demands were related to job burnout. The practical implication is that the home side of the equation is underresearched and undervalued in terms of how it can affect the work role of individuals and that of their spouses. Companies are usually quite ready to provide work-related training and support to employees, but maybe it is time that organizations also try to provide training and support for nonwork-related demands (e.g., parental training, role reorientation for couples, possibilities for working at home, or child care facilities).

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