Correlates of work-family conflicts among managers in Egypt

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Abstract

Purpose – The work-family interface has received considerable attention during the past two decades but inconsistent findings have been reported. Reasons for this include the use of different work-family conflict (WFC) measures, samples, outcomes, and countries and cultures. Carlson *et al.* developed and provided an initial validation of a new comprehensive measure of bi-directional WFC having three forms: time-, strain-, and behavior-based conflict. The purpose of this paper is to replicate and extended their work employing a large sample of managers working in various organizations and industries in Egypt, a large Muslim country, and including additional correlates.

Design/methodology/approach – Data were collected from 242 respondents, 146 males and 96 females, using anonymously completed questionnaires, a 48 percent response rate. Measures included three forms of WFC, personal demographic and work situation characteristics, stable individual difference personality factors, job behaviors, work outcomes, after-work recovery experiences, indicators of quality of life (e.g. WFC, life satisfaction) and psychological well-being.

Findings – The three measures of WFC were acceptably reliable and inter-correlated to the same extent as reported by Carlson and her colleagues in their US study. The mean values in the Egyptian sample were higher than those in the US study indicating more WFC, and the gender differences reported by Carlson *et al.* were not found in the Egyptian sample. Both stable personality characteristics (e.g. need for achievement) and job demands (e.g. perceptions of work intensity) were positively associated with WFC. Use of recovery experiences after work had limited and mixed effects on levels of WFC. WFC generally had negative relationships with work outcomes and indicators of psychological well-being.

Research limitations/implications – The presence of country differences suggests the need for more cross-cultural research involving participants in the same occupations.

Practical implications – Results suggest that both individual characteristics and job demands are associated with levels of WFC. Efforts to reduce levels of WFC need to address both.

Originality/value – The paper adds to the understanding of work experiences of managers in Egypt and replicates and extends earlier work.

Keywords Role conflict, Managers, Egypt

Paper type Research paper

Introduction

Work family issues have received increasing attention by both organizations interested in effective human resource management and by researchers (Byron, 2005; Friede *et al.*, 2008). Most research on work-family conflict (WFC) has been carried out in North America, the UK, and Western Europe (Byron, 2005; Jones *et al.*, 2005). WFC has important consequences for individuals, families, and organizations. It has been found to be associated with lower levels of work satisfaction, organizational commitment, absenteeism, and psychological well-being (Allen *et al.*, 2000; Kossek and Ozeki, 1998; Parasuraman and Greenhaus, 1997). WFC was also found to be associated with lower levels of family satisfaction as well (Eby *et al.*, 2005; Rice *et al.*, 1992). Finally, employee dissatisfaction and heightened turnover resulting from work-family issues also have consequences for organizational performance (Goff *et al.*, 1990; Jones *et al.*, 2005).

Research on the antecedents and consequences of WFC have sometimes produced inconsistent results however, influenced in part by the use of different measures of WFC, different outcomes, and being conducted in different countries and cultures (Burke, 2009; Allen *et al.*, 2000). Efforts have been made to address the measurement of WFC however. Carlson *et al.* (2000) based on previous theorizing and research findings, developed a measure of WFC that appears promising. Their measure examined both work-family and family-work relationships (bi-directional conflict) and different forms of conflict (time-, strain-, and behavior-based):

- *Time-based* – the time devoted to one role makes it more difficult to participate successfully in the other role.
- *Strain-based* – strains in one role make it more difficult to participate or be successful in the other role.
- *Behavior-based* – behaviors expected or required in one role are incompatible with behaviors required or expected in the other role.

There are six dimensions of WFC; work-family and family-work in each of the three forms. They found that these six measures had acceptable levels of internal consistency reliability and were all positively and significantly correlated (average inter-correlation of 0.64). They also reported that females scored significantly higher than males on four of the six measures. In addition, the strain-based measures were more strongly and consistently correlated with both potential antecedents and outcomes than were the time- and behavior-based measures.

Carlson (1999), using the same US sample as in her 2000 study, reported correlations between type a behavior and negative affectivity, both personality factors, and the three forms of WFC. As she predicted, negative affectivity was positively related to levels of each of the three forms of WFC. Contrary to predictions, however, Type A behavior was negatively related to each of the three forms of WFC. She suggests that Type As may be more adaptive, involved in a wider array of activities, be able to compartmentalize work and family, or be so invested in their work that they are blind to family matters.

An interesting issue is whether the findings of Carlson *et al.* (2000) would extend to women and men working in other occupations in other countries having different cultures and values. The work-family interface obviously exists in all countries and cultures but individuals in some occupations work more hours per week than do individuals in other occupations, some cultures see the family as the major responsibility

for women than for men, and some cultures place a higher value on the family, and on balance than do others (Rifkin, 2004).

We have used some of the Carlson *et al.* (2000) measures in studies undertaken in Turkey and China. Burke *et al.* (2009a) collected data form 877 men and women working in managerial and professional jobs in a variety of manufacturing organizations in Turkey, a 58 percent response rate. Turkey is a large secular Muslim country that places a high value on the family. Only the WFC (not the family-work conflict) measures were used since WFC has typically been found to be more common and a stronger and more consistent predictor of outcomes than has family-work conflict. The measures of the three forms of WFC had high internal consistency reliability and were inter-correlated to the same extent as reported by Carlson and her colleagues. However, the mean values in the Turkish sample on each were higher than those obtained in the US study, and the gender differences reported by Carlson and her colleagues were not present in the Turkish sample. Both job demands (work hours, work intensity) and work-oriented personality factors (need for achievement (NAch), feeling driven to work because of inner pressures) were related to levels of WFC. Strain-based conflict emerged as a stronger and more consistent predictor of both work outcomes and levels of psychological well-being than did time- and behavior-based conflict.

Burke *et al.* (2009b), again using only the three forms of WFC, collected data from 309 men and women working in managerial and professional jobs in 3-, 4-, and 5-star hotels in Beijing China. China is a very large, rapidly developing athiestic country having Confucian values and also placing a high value on the family. The three measures of work family were again highly reliable and inter-correlated to the same extent as reported by Carlson and her colleagues in their US study. The mean values in the Chinese on each were again higher than those obtained in the US study however, and the gender differences reported by Carlson and her colleagues were not present in the Chinese sample. In fact, Chinese males reported higher levels of behavior-based WFC and lower levels of time-based WFC than did females. Job demands (work hours, work intensity), but not work-oriented personality factors (proactive personality, workaholic job behaviors) were related to levels of WFC. Contrary to predictions WFC had no relationship with work outcomes. Strain-based conflict emerged as a stronger and more consistent predictor of levels of psychological well-being than did time- and behavior-based WFC.

The results of these two studies were consistent with the conclusions of Carlson and her colleagues in some cases but differed in others. The measures of the three forms of WFC were highly reliable and inter-correlated to the same degree in the Turkish, Chinese, and American studies. In addition, strain-based conflict had stronger and more consistent relationships with psychological well-being variables in all three studies. But differences existed on the levels of the three forms of WFC, the role of gender, and the relationship of these forms of WFC with work outcomes (present in the US and Turkish study, absent in the Chinese study). In addition, respondents worked more hours per week in both the Turkish and Chinese studies than in the US study.

The present study examined work and well-being correlates of the same measures of WFC among female and male managers and professionals working in a variety of organizations and industries in Egypt. Egypt is a large country making the transition to a more service and manufacturing based economy, but making slow progress here (Ali, 1999). In addition, Egypt is a Muslim country in which citizens practice the Islamic faith. No previous research has considered this question in Egypt to our knowledge.

Egyptian cultural values
There has been increasing research attention devoted to business in the Middle East over the past two decades. The Middle Eastern economy has flourished partly the result of oil and partly the result of a young and growing population (Ali, 1999; Budhwar and Mellahi, 2007). Egypt is similar to other Middle Eastern countries in some ways but different in others (Ali, 1999, 2005; Muna, 1980). Hofstede (1980) found that all Middle Eastern countries shared similar societal and cultural values. These countries indicated large power differences, scored high on uncertainty avoidance, scored low on individualism (or high on collectivism) and scored only slightly above average on masculinity. Egypt is a patriarchal society with boys more highly valued than girls (El-Ghannam, 2001, 2002), and strict gender roles with women responsible for home and family (Ali, 2005; Metcalfe, 2006, 2007, 2008; Mostafa, 2003). Hofstede concluded that the small number of women in the workforce generally and their absence at senior levels of management and in politics, reflected religious values (Islam) more than masculine values (El-Saadawi, 1982; Sidani, 2005).

Unfortunately, we know relatively little about the work and career experiences of managers in Egypt. It has been difficult to undertake both human resource management research in Egypt since many organizations are not interested in such research and many managers do not want their subordinates to participate in research that might be critical of their performance (Ali, 2005; Budhwar and Mellehi, 2007).

But Egypt is in transition, El-Kot and Leat (2008) and Leat and El-Kot (2007) have shown that human resource practices in Egypt tend to reflect a combination of those based on traditional cultural values and newer practices developed in the Western world. There are now an increasing number of women in the workforce (Al-Lamky, 2007; Jamali *et al.*, 2006). In addition, an increasing number of Egyptians are being educated with women's numbers in university approaching those of men (Mostafa, 2003).

Egypt is a patriarchal and traditional society (Ali, 2005; Metcalfe, 2007) and Egyptian organizations use human resource management practices that are patriarchal (Japer, 2001). Egypt places a high value on the family (Metcalfe, 2006). The Egyptian education system is weak in preparing young men and women for jobs in the twenty-first century and needs improving (Tyler and Holmes, 2008); Egypt has shown only slow economic development (Ali, 2005; Budhwar and Mellahi, 2007).

The present study replicates and extends findings from the original Carlson *et al.* (2000) study. Their measures of only WFC were used here since other research has shown that WFC is generally higher that family-work conflict among managers and professionals and more strongly and consistently related to work and well-being measures (Byron, 2005; Jones *et al.*, 2005).

The following general hypotheses, building primarily on the Carlson *et al.* (2000) findings, were considered:

H1. The measures of time-, strain-, and behavior-based family conflict would be highly reliable and be significantly and positively correlated.

H2. The three forms of WFC would have different predictors.

H3. Personal demographic and work situation factors would be modest or inconsistent predictors of forms of WFC.

H4. Females would indicate higher levels of WFC than would males.

H5. Stable individual difference personal characteristics associated with work investment (proactive personality, workaholic job behaviors) would be strong predictors of forms of WFC.

H6. Job demands (work hours, work intensity) would be strong predictors of forms of WFC.

H7. Use of recovery experiences would predict levels of WFC.

H8. The three forms of WFC would have different relationships with work and well-being outcomes. Strain-based conflict, however, would have more relationships with work and well-being outcomes than would time- and behavior-based WFC.

Method
Procedure
Data were collected between October 2008 and January 2009 from service and manufacturing organizations in two Egyptian cities (Alexandria and Cairo). Members of the research team contacted about 50 organizations in these cities requesting their participation in the research. The 24 cooperating organizations then provided a list of managers and professionals to the researchers. Service organizations included telecommunications, banks, educational institutions, and a maritime service provider. Manufacturing organizations included pharmaceutical, petroleum companies, and production companies focusing upon production of milk, juice, and food. Approximately, 500 managers and professionals were contacted; of which 242 provided completed questionnaires, a 48 percent response rate. Questionnaires were completed anonymously in English. The respondents are best described as a large convenience sample of Egyptian managers and professionals in a variety of industries.

Respondents
Table I presents the demographic characteristics of the sample. Over half were male (60 percent), almost all worked full-time (93 percent), over half were 30 years of age or younger (61 percent), most were single (62 percent), without children (64 percent), were university graduates (95 percent), worked 40 hours a week or less (42 percent), were in middle management (33 percent), supervised others (66 percent), earned over LE 25,000 a year of income (46 percent), a had relatively short job and organizational tenures (over half having two years or less job tenure – 60 percent and over one-thirds having two years of less of organizational tenure – 37 percent), and worked in organizations of varying sizes, the average being about 1,000 employees. Respondents fell into several functions: information technology (IT) and logistics, 16 percent; marketing and sales, 14 percent; finance, 13 percent; production, 11 percent; and customer service, 9 percent.

Measures
Work-family conflict. Three aspects of WFC were assessed using scales developed by Carlson *et al.* (2000). Each had three items and assessed time-, strain-, and behavior-based conflict. The respective reliabilities for these were 0.92, 0.60, and 0.64. One item was "The stress from my job often makes me irritable when I get home."

	n	$\%$
Gender		
Male	146	60.3
Female	96	39.7
Work status		
Full time	226	93.4
Part time	16	6.6
Marital status		
Married	92	38.0
Single	150	62.0
Parental status		
Children	86	35.5
No children	156	64.5
Education		
High school	12	5.0
Bachelors	185	80.6
Masters	35	14.4
Hours worked		
40 or less	102	42.1
41-45	51	21.1
46-50	49	20.7
51-55	7	2.9
56-60	20	8.2
61 or more	12	5.0
Organizational level		
Non-management	70	28.9
Lower management	56	23.1
Middle management	80	33.1
Senior management	36	14.9
Organizational tenure (*years*)		
1-2	90	37.2
3-5	55	22.7
6-10	56	23.2
11 or more	41	16.9
Organizational size		
250 or less	59	20.2
251-500	36	14.9
501-1,000	47	19.4
1,001-2,000	34	14.1
2,001-5,000	70	28.9
5,001 or more	6	2.5
Age		
25 or less	73	30.2
26-30	74	30.5
31-35	29	12.0
36-40	13	5.4
41-45	13	5.4
46 or older	40	16.5
Length of marriage (*years*)		
1-5	36	40.0
6-10	13	14.4

Table I.
Demographic
characteristics of sample

(*continued*)

	n	%
11-15	7	7.8
16-20	19	21.1
21-25	17	18.9
26 or more	4	4.4
Number of children		
0	155	64.0
1	27	11.2
2	44	18.2
3 or more	16	6.6
Income-LE$		
10,000 or less	62	25.6
10,001-15,000	16	6.6
15,001-20,000	22	9.1
20,001-25,000	30	12.4
25,001 or more	112	46.3
Supervisory duties		
Yes	161	66.5
No	81	33.5
Job tenure (years)		
1-2	145	59.9
3-5	51	21.1
6-10	43	17.8
11 or more	3	1.2
Function		
Finance	32	13.2
Production	26	10.7
IT	23	9.5
Customer service	22	8.1
Marketing	18	7.4
Sales	17	7.0
Logistics	17	7.0

Table I.

Personal demographic and work situation characteristics. A number of personal demographics (e.g. age, gender, level of education, marital, and parental status) and work situation characteristics (e.g. organizational level, job, and organizational tenure) were measured by single items (Table I).

Stable individual difference personality characteristics. Three stable individual difference personality characteristics were included.

NAch was measured by a five item scale ($\alpha = 0.62$) developed by Steers and Braunstein (1976). One item was "I try very hard to improve on my past performance at work."

Workaholic behavior. Two workaholic behavior scales developed by Mudrack (2006) were included. One, non-required work, had four items ($\alpha = 0.82$). An item was "Thinking of ways to improve the quality of work provided to customers and/or co-workers." The other, control others, also had four items ($\alpha = 0.74$). One item was "fixing problems created by other people."

Job demands. Two job demands were included:

(1) Work hours were assessed by a single item. Respondents indicated the number of hours they worked in a typical week.

(2) Work intensity was assessed by a 15 item scale ($\alpha = 0.74$). Some items were taken from Hewlett and Luce (2006) while others were developed by the researchers. Items included: "an unpredictable flow of work," "availability to clients 24/7," and "a large scope of responsibility that amounts to more than one job."

Job behaviors. Two job behaviors were assessed:

(1) Perfectionism was measured by eight items ($\alpha = 0.67$) developed by Spence and Robbins (1992). One item was "I cannot let go of projects until I'm sure they are exactly right."

(2) Non-delegation was assessed by seven items ($\alpha = 0.72$) also developed by Spence and Robbins (1992). An item was "I feel that if you want something done correctly you should do it yourself."

Work and well-being outcomes. A wide range of outcome variables were included in this study covering both work and extra-work domains. These variables were consistent with those typically used in studies of work and well-being more generally (Barling *et al.*, 2005; Schabracq *et al.*, 2003).

Work outcomes. Four work outcomes were included:

(1) Job satisfaction was measured by a seven item scale ($\alpha = 0.80$) developed by Kofodimos (1993). An item was "I feel challenged by my work."

(2) Career satisfaction was assessed by a five item scale ($\alpha = 0.88$) created by Greenhaus *et al.* (1990). One item was "I feel satisfied with the progress I have made in my career to date."

(3) Job stress was measured by a nine item scale ($\alpha = 0.59$) developed by Spence and Robbins (1992). One item was "Sometimes I feel like my work is going to overwhelm me."

(4) Intent to quit was measured by two items ($\alpha = 0.84$) used previously by Burke (1991). One item was "Are you currently looking for a different job in a different organization? (Yes/no).

Recovery experiences. Four recovery experiences were measure using scales developed by Sonnentag and Fritz (2007). These were:

(1) Psychological detachment was measured by four items ($\alpha = 0.92$). One item was "I forget about work".

(2) Relaxation was also measured by four items ($\alpha = 0.85$). An item was "I take time for leisure."

(3) Mastery was assessed by four items ($\alpha = 0.75$). One item was "I learn new things."

(4) Control was measured by four items ($\alpha = 0.88$). An item was "I determine for myself how I will spend my time."

Psychological well-being. Three aspects of psychological well-being were considered:

(1) Exhaustion was measured by a nine item scale ($\alpha = 0.74$), part of the Maslach Burnout inventory, developed by Maslach *et al.* (1996). An item was "I feel emotionally drained from my work."

(2) Psychosomatic symptoms was measured by a 19 item scale ($\alpha = 0.85$) developed by Quinn and Shepard (1974). Respondents indicated how frequently they had experienced each physical symptom (e.g. headaches, difficulty sleeping) in the past year.

(3) Life satisfaction was assessed by a five item scale ($\alpha = 0.84$) created by Diener *et al.* (1985). A sample item was "I am satisfied with my life."

Results

Descriptive statistics

The three measures of forms of WFC had acceptable (but in two cases, only minimally so) levels of internal consistency reliability and were significantly and positively inter-correlated ($p < 0.001$): time- and strain-, 0.61; time- and behavior-, 0.25; and strain- and behavior-, 0.47; the average correlation being 0.44. These values were similar to those reported by Carlson *et al.* (2000) in their US study: 0.58, 0.31, 0.54, and an average inter-correlation of 0.48.

The mean values of the three WFC measures were: time-, 2.9, strain-, 3.1, and behavior-, 2.9; the average being 3.0. Carlson *et al.* (2000) reported mean values of 2.8, 2.6, 2.5, and 2.6, respectively. Respondents in the Egyptian sample reported significantly higher levels of WFC than did respondents in the Carlson *et al.* (2000) US study. Carlson and her colleagues reported significant gender differences; females reporting significantly higher levels of strain-based WFC than did males. Males and females reported similar levels of time-, strain-, and behavior-based WFC in the present Egyptian study.

Analysis plan

Hierarchical regression analyses were first undertaken in which the three forms of WFC were separately regressed on two blocks of predictors: personal demographics ($n = 5$) such as age, gender, and level of education, and work situation characteristics ($n = 4$) such as organizational level, job, and organizational tenure. Then the three forms of WFC were separately regressed on three blocks of predictors: personal demographics, work situation characteristics, and, in one analysis, stable personality factors ($n = 3$) including NAch, non-required work and control of others, and in a second analysis, the third block of predictors contained two job demands (work hours, work intensity), and in a third analysis, the third block of predictors included the use of four recovery experiences (psychological detachment, relaxation, mastery, control).

Then to examine the potential consequences of the three forms of WFC, hierarchical regression analyses were undertaken in which the various outcome measures (work engagement, work outcomes, recovery experiences, and indicators of psychological well-being) were regressed on three blocks of predicts: personal demographics, work situation characteristics, and the three forms of WFC. When a block of predictors accounted for a significant amount or increment in explained variance on a given criterion variable ($p < 0.05$), individual items or measures within such blocks having significant and independent relationships with these criterion variables were then

identified ($p < 0.05$). These analyses control for the relationship of both personal demographics and work situation characteristics before examining the relationship of various forms of WFC and the work and well-being variables of interest. The sample size for all regressions reported below was 242.

Predictors of WFC
Personal demographic and work situation characteristics. Table II presents the results of hierarchical regression analyses in which the three forms of WFC (time-, strain-, and behavior-based) were regressed on two blocks of predictors: personal demographics and work situation characteristics. The following comments are offered in summary. First, both blocks of predictors accounted for a significant amount or increment in explained variance on time-based WFC. Less educated managers, and managers having long job tenure reported higher levels of time-based WFC (Bs $= -0.16$ and 0.32, respectively). Second, both blocks of predictors accounted for a significant amount or increment in explained variance on strain-based WFC. Managers who were married and managers at lower organizational levels indicated higher levels of strain-based WFC (Bs $= -0.28$ and -0.20, respectively). Third, one of the two blocks of predictors accounted for a significant amount or increment in explained variance on behavior-based WFC (work situation characteristics). Managers working in larger organizations, and managers at lower organizational levels reported higher levels of behavior-based WFC (Bs $= 0.33$ and -0.19, respectively).

Stable personality factors. Table III shows the results of hierarchical regression analyses in which the three forms of WFC were separately regressed on three blocks of predictors: personal demographics, work situation characteristics, and three stable personality factors. Stable personality factors accounted for a significant increment in explained variance on all three forms of WFC. Managers scoring higher on NAch reported higher levels of all three forms of WFC (Bs $= 0.31$, 0.21, and 0.21, for time-, strain- and behaviorally based WFC, respectively). Manager scoring higher on control of others reported higher levels of both strain- and behavior-based WFC

WFC	R	R^2	Change R^2	p
Time-based WFC				
Personal demographics	0.22	0.05	0.05	0.05
Education level (-0.16)				
Work situation characteristics	0.31	0.10	0.05	0.05
Strain-based WFC				
Personal demographics	0.33	0.11	0.11	0.001
Age (-0.28)				
Work situation characteristics	0.40	0.16	0.05	0.01
Organizational level (-0.20)				
Behavior-based WFC				
Personal demographics	0.19	0.04	0.04	NS
Work situation characteristics	0.42	0.17	13	0.001
Organization size (0.32)				
Organizational level (-0.19)				

Table II.
Personal demographic and work situation predictors of forms of WFC

WFC	R	R^2	Change R^2	p
Time-based WFC				
Personal demographics	0.22	0.05	0.05	0.05
Marital status (-0.35)				
Work situation characteristics	0.31	0.10	0.05	0.05
Job tenure (0.42)				
Organizational level (-0.16)				
Personality factors	0.46	0.21	0.11	0.001
NAch (0.31)				
Strain-based WFC				
Personal demographics	0.33	0.11	0.11	0.001
Marital status (-0.26)				
Work situation characteristics	0.40	0.16	0.06	0.01
Organizational level (-0.26)				
Personality factors	0.50	0.25	0.09	0.001
Control of others (0.26)				
NAch (0.21)				
Behavior-based WFC				
Personal demographics	0.19	0.04	0.04	NS
Work situation characteristics	0.42	0.17	0.13	0.001
Organizational size (0.27)				
Organizational level (-0.22)				
Personality factors	0.51	0.26	0.09	0.001
NAch (0.21)				
Control of others (0.22)				
Non-required work (-0.22)				

Table III.
Personality predictors
of forms of WFC

(Bs = 0.26 and 0.22, respectively). Managers scoring higher on non-required work,
however, indicated lower levels of behavior-based WFC ($B = -0.22$).

Job demands
Table IV presents the results of hierarchical regression analyses in which the three
forms of WFC were separately regressed on three blocks of predictors: personal
demographics, work situation characteristics, and two job demands (work hours, work
intensity). Job demands accounted for significant increment in explained variance on all
three forms of WFC. Managers in more intense jobs indicated higher levels of time- and
strain-based WFC (Bs = -0.29 and 0.26, respectively) and managers working more
hours per week indicated higher levels of behavior-based WFC ($B = 0.22$).

Recovery experiences
Table V shows the results of hierarchical regression analyses in which the three forms
of WFC were regressed on three blocks of predictors: personal demographics, work
situation characteristics, and use of four recovery experiences after work. Use of these
recovery experiences accounted for a significant increment in explained variance on two
of the three forms of WFC: time- and behavior-based. Managers making great use
of psychological detachment reported lower levels of time-based WFC ($B = -0.30$),
and managers making less use of mastery, and greater use of relaxation, indicated
higher levels of behavior-based WFC (Bs = 0.15 and 0.21, respectively).

WFC	R	R^2	Change R^2	p
Time-based WFC				
Personal demographics	0.22	0.05	0.05	0.05
Work situation characteristics	0.31	0.10	0.05	0.05
Job tenure (0.29)				
Job demands	0.42	0.18	0.08	0.001
Work intensity (0.29)				
Strain-based WFC				
Personal demographics	0.33	0.11	0.11	0.001
Work situation characteristics	0.40	0.16	0.06	0.01
Organizational level (-0.22)				
Organizational size (0.13)				
Job demands	0.49	0.24	0.08	0.001
Work intensity (0.26)				
Behavior-based WFC				
Personal demographics	0.19	0.04	0.04	NS
Work situation characteristics	0.42	0.17	0.13	0.001
Organizational size (0.33)				
Job tenure (-0.26)				
Organizational level (-0.19)				
Job demands	0.48	0.23	0.06	0.001
Work hours (0.22)				

Table IV.
Job demands as
predictors of forms
of WFC

WFC	R	R^2	Change R^2	p
Time-based WFC				
Personal demographics	0.22	0.05	0.05	0.05
Work situation characteristics	0.31	0.10	0.05	0.05
Job tenure (0.24)				
Recovery experiences	0.40	0.16	0.06	0.01
Psychological detachment (-0.30)				
Strain-based WFC				
Personal demographics	0.33	0.11	0.11	0.001
Marital status (0.30)				
Work situation characteristics	0.40	0.16	0.05	0.01
Organizational level (-0.20)				
Recovery experiences	0.41	0.17	0.01	NS
Behavior-based WFC				
Personal demographics	0.19	0.04	0.04	NS
Work situation characteristics	0.42	0.17	0.13	0.001
Organizational size (0.28)				
Job tenure (-0.29)				
Organizational level (-0.20)				
Recovery experiences	0.46	0.22	0.05	0.05
Relaxation (0.21)				
Mastery (-0.15)				

Table V.
Recovery experiences
and forms of WFC

Work outcomes
Table VI presents the results of hierarchical regression analyses in which four work outcomes were separately regressed on the three blocks of predictors. The three forms of WFC accounted for a significant increment in explained variance on three of the four work outcomes: job satisfaction, job stress, and intent to quit. Managers indicating higher levels of time-based conflict and lower levels of behavior-based WFC reported higher levels of job satisfaction (Bs = 0.26 and -0.24, respectively), reporting more strain-based WFC indicated higher levels of job stress ($B = 0.29$), and managers indicating more strain-based conflict reported greater intentions to quit ($B = 0.24$).

Psychological well-being
Table VII shows the results of hierarchical regression analyses in which three indicators of psychological well-being (exhaustion, psychosomatic symptoms, and life satisfaction) were separately regressed on the three blocks of predictors. The forms of WFC accounted for a significant increment in explained variance in all three analyses Managers reporting more strain-based conflict also indicated higher levels of exhaustion ($B = 0.24$), more psychosomatic symptoms ($B = 0.27$) and less life satisfaction ($B = -0.17$).

Work outcomes	R	R^2	Change R^2	p
Job satisfaction				
Personal demographics	0.24	0.06	0.06	0.05
Marital status (-0.19)				
Work situation characteristics	0.44	0.20	0.14	0.001
Jog tenure (-0.42)				
Organizational tenure (0.32)'				
Organizational level (0.20)				
WFC	0.52	0.27	0.07	0.001
Time-based (0.26)				
Behavior-based (-0.24)				
Career satisfaction				
Personal demographics	0.21	0.04	0.04	NS
Work situation characteristics	0.29	0.08	0.04	0.05
WFC	0.32	0.10	0.02	NS
Job stress				
Personal demographics	0.20	0.04	0.04	NS
Work situation characteristics	0.26	0.07	0.03	NS
WFC	0.43	0.18	11	0.001
Strain-based (0.29)				
Intent to quit				
Personal demographics	0.36	0.13	0.13	0.001
Gender (0.22)				
Education level ($-.20$)				
Age (0.32)				
Work situation characteristics	0.39	0.16	0.03	NS
WFC	0.43	0.18	0.02	0.05
Strain-based (0.24)				

Table VI.
WFC and work outcomes

Psychological well-being	R	R^2	Change R^2	p
Exhaustion				
Personal demographics	0.33	0.11	0.11	0.001
Gender (0.14)				
Work situation characteristics	0.38	0.14	0.03	NS
WFC	0.45	0.20	0.06	0.01
Strain-based (0.24)				
Psychosomatic symptoms				
Personal demographics	0.31	0.10	0.10	0.001
Age (0.56)				
Work situation characteristics	0.39	0.16	0.06	0.01
Organizational size ($-$ 0.23)				
WFC	0.42	0.22	0.04	0.001
Strain-based (0.27)				
Life satisfaction				
Personal demographics	0.24	0.06	0.06	0.05
Marital status (0.37)				
Work situation characteristics	0.28	0.08	0.02	0.05
WFC	0.31	0.10	0.02	0.05

Table VII.
WFC and psychological
well-being

Discussion

This research attempted to replicate and extend the use of a measure of WFC developed and validated in the US by Carlson *et al.* (2000). Three forms of WFC were considered: time-, strain-, and behavior-based. Data were collected from a large sample of female and male managers and professionals employed in various organizations and industries in Egypt using anonymously completed questionnaires. In addition a greater number of potential predictors and consequences of WFC were included here as well.

Our findings were consistent with those based on the early US study in several areas. First, the three forms of WFC had generally acceptable levels of internal consistency reliability, low however on both strain- and behavior-based WFC, and were inter-correlated to the same extent in the Egyptian sample as in the US sample. In addition, forms of WFC were related to outcomes in generally the same way; that is, higher levels of WFC tended to be associated with less favorable work and well-being outcomes (Tables VI and VII). Interesting, as in the US study, strain-based WFC was more strongly related to these outcomes than wee either time- or behavior-based WFC. Finally, our findings and those of Carlson (1999), showed that stable personality factors added additional understanding of forms of WFC, and not surprisingly more work-oriented managers indicated higher levels of WFC.

The present Egyptian study also extended the Carlson *et al.* (2000) research in several important ways. First, our understanding of these three forms of WFC has been increased (Tables II-V); personal and work situation characteristics had weak and inconsistent relationships with the three forms of WFC, job demands (work hours, work intensity) had strong and consistent relationships with the three forms of WFC, stable personality characteristics in the form of both NAch and workaholic job behaviors increased levels of WFC, and use of particular recovery experiences after work both lessened some forms of WFC while increasing other forms. Thus, both individual difference characteristics (e.g. NAch) and job demands (level of perceived work intensity) increased levels of WFC. These findings also reflect the fact that work

experiences are more likely to affect family well-being than family experiences affect work well-being and functioning (Byron, 2005). In addition, the use of recovery experiences seems to have complex relationships with work and well-being outcomes (Sonnentag and Kruel, 2006) perhaps depending on the work hours worked and other job demands of incumbents.

The use of the Carlson *et al.* (2000) US-developed measures in different countries (Turkey, China, Egypt) has indicated generally consistent findings with some exceptions. The measures of the three forms of conflict wee generally found to be reliable and inter-correlate to the same degree in the four countries studied. There were some difference in level of forms of WFC reported, and the presence or absence of gender differences on forms of WFC, but it was not possible to determine whether this was due to the specific samples, the occupation, or country differences in culture and values. Other consistent findings involved the role of stable personality factors, the role of job demands, and the negative effects of WFC, particularly strain-based conflict on work and psychological well-being. Recent studies have documented the transmission of both positive and negative emotions from work to family, and among family members (Bakker *et al.*, 2008, Westman, 2001, 2005), suggesting that further work on the role of emotions in the workplace and the home is warranted.

It is also important to note country differences. Managers in Turkey, China, and Egypt reported higher levels of all forms of WFC than did US respondents. In addition, male and female managers in both Turkey and Egypt reported similar levels of all three forms of WFC whereas female managers in the US reported higher levels of strain-based WFC whereas female managers in China reported higher levels of time-based WFC and lower levels of behavior-based WFC than did their male colleagues. These differences may reflect differences in occupations. There were also country or occupational differences in the levels of both predictors and outcome variables (e.g. use of recovery experiences, work hours, work intensity). Clearly more cross-cultural research involving respondents in the same occupations is needed to sort this out.

Practical implications
Some preliminary practical implications can be drawn from these findings. First, individuals and organizations might profit by offering personal coaching and training programs that address the consequences of excessive work involvement for family and personal well-being. Second, organizations might consider ways of reducing levels of work intensity. Munck (2001) outlines what the Marriott hotel chain did to reduce both work hours and work intensity of supervisory and managerial staff. Third, individuals and organizations might consider ways that individuals following a particularly demanding work day can recover while at home (Sonnentag and Fritz, 2007).

But a word of caution is in order. Most of the research and intervention work on work hours and work and family has been undertaken in organizations in the highly industrialized and developed world (e.g. North America, Western Europe). It is likely that some of this "wisdom" will not fit the Egyptian national culture and its values and customs, and the Egyptian business environment (Aycan, 2001; Aycan *et al.*, 2000; Wasti, 1998). Organizations and their management should adapt these Western-based conclusions to their own workplaces.

Limitations of the research

This research, like most others, has some limitations. First, all data were collected using self-report questionnaires raising the small possibility of responses being affected by use of a common method. Second, the data were collected at one point in time making it difficult to establish causal relationships. Third, a few of the measures had levels of internal consistency reliability below the generally accepted level of 0.70. Fourth, although the sample was relatively large, it was not likely a representative sample of Egyptian managers and professionals in the manufacturing sector. Fifth, the sample was relatively young, single and without children; it is not clear the extent to which these results would generalize to an older sample having both children and longer work and organizational tenure. Sixth, the extent to which these findings would generalize to respondents working in other industrial sectors or respondents in other countries is yet to be determined.

Future research directions

Several fruitful research directions followed from this investigation. First, the role played by stable personality characteristics as antecedents of WFC needs more attention. Second, the use of diary studies needs to be integrated with the use of broader surveys in the same investigaton. Third, more use of longitudinal studies need to be undertaken. For example, Dickers *et al.* (2007) found, in a longitudinal study, that workload caused work-home interference and that work-home interference also caused future workload. Fourth, considering work-family facilitation and positive organizational experiences and outcomes (Cameron *et al.*, 2003) would more fully contribute to our understanding of the plusses and minuses of work and family experiences and investments.

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