Based on international experience and the present socioeconomicsituation in Croatia three theoretical models were created about influence of work-related stressors and crossover effect on marriage quality. The first model represented the direct influence of work-related stressors on marriage quality and the other two were mediation ones. The first mediation model consisted of four exogenous and four endogenous variables and in the second mediation model covariate variable was added. The models were tested on 340 full-time-employed marital couples representing the quota sample of Zagreb and Zagreb metropolitan area. Models were evaluated using SEM separately for wives and for the husbands. The best model for predicting marital partners' marriage quality was the mediation model with covariate. By this model 39% of husband's and 57% of wife's marriage quality was explained. Also, according to results, there was a crossover effect present, i.e. work-related stressors of one marital partner influenced the marriage quality of the other marital partner.

Key words: work-family conflict, stress crossover, marriage quality

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INTRODUCTION

Work-family conflict and Family-work conflict (WFC and FWC) are very popular and much researched topics among social scientists in North America and in some European countries. Hun-
Dreds of studies were performed and several very thorough meta-analyses were published on the subject (Allen et al., 2000; Ford et al., 2007; Kossek & Ozeki, 1998; Mesmer-Magnus & Viswesvaran, 2005). In the beginning the WFC and FWC were treated as one bipolar scale (Bedeian et al., 1988), but soon it was realized that they were different concepts entirely, having a potentially different, even opposite influence on work and the family (Kopelman et al., 1983). Although both concepts are very important and of major possible consequences for companies, employees and their families, in this paper we shall limit our interest only to the WFC, because, although it has existed for a long time, it is especially present and pronounced in contemporary Croatia, where our study was conducted.

Namely, WFC appeared in Croatia for the first time immediately after the Second World War with the introduction of socialism as a political system which stimulated and in some cases even required both marital partners to be fully employed. Such type of family employment was quickly accepted by the Croatian population both because of the modernization processes and economic reasons. It existed as such for decades, more precisely until 1991, when socialism collapsed as a political system and capitalism was introduced in the country’s economy.

Only one study of this topic was performed during socialism in Croatia and it clearly demonstrated the existence of WFC (Mihovilović, 1975). Unfortunately, this study was quickly forgotten for several reasons, the main one being a low emphasis on workers’ productivity and efficiency which allowed workers flexible working time and ample absenteeism. Such lax attitudes, both towards work and work discipline, were also in accordance with the traditional value system which emphasized family life as most important and de-emphasized everything else.

But, the introduction of the new political system changed many things drastically. The privatization of the companies introduced a more rigorous work discipline and longer working hours, productivity and efficiency came to the fore, and all this made the WFC more visible, socially more important and scientifically more interesting and relevant.

It should be also taken into account that the majority of the contemporary married couples in Croatia represent dual-earner families, the kind of family organization most exposed to WFC. And although the family is still the most important aspect of life for the contemporary Croatian population, work is also starting to be very important (Baloban & Ćrpić, 2000), and these two opposing and almost equally strong values are making the work-family relationship even more delicate and potentially vulnerable.
WORK-FAMILY CONFLICT (WFC)

In spite of the existence of numerous definitions of WFC, there is an almost unanimous consensus that Greenhaus and Beutell’s definition (1985) is probably the most adequate, so we shall use it as a starting point in our paper. According to Greenhaus and Beutell (1985) WFC is “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect”. In accordance with this definition of WFC, various scales were constructed (Frone et al., 1992; Gutek et al., 1991; Netemeyer et al., 1996) which were used in many studies conceiving WFC either as independent, mediating or dependent variable.

Generally, the WFC proved to have a negative effect on many work and family related variables as well as the well-being of employees and their family members. It was clearly demonstrated that WFC is negatively related to job attitudes (Kossek & Ozeki, 1998; Netemeyer et al., 1996) and job performance (Frone et al., 1997; Wayne et al., 2004), and positively related to distress (Burke, 1994; Greenhaus & Parasuraman, 2002), and absenteeism (Hammer et al., 2003; Thomas & Ganster, 1995). Most importantly for the purposes of this paper it was demonstrated that WFC is negatively related to family satisfaction (Carlson et al., 2000; Frone et al., 1997).

But it should be taken into consideration that some recent studies have shown that positive effects of WFC on work and non-work variables can also be recognized. The positive spillover between work and family is explained by the enhancement hypothesis according to which the more roles one performs the more resources one has and more energy one possesses, which eventually leads to higher self-esteem (Marks & MacDermid, 1996). In accordance with this hypothesis some recent studies were able to demonstrate positive spillover of WFC on mood (Edwards & Rothbard, 2000), physical health (Grzywacz, 2000) and lower depression (Hammer et al., 2005), but nevertheless, they represent a relatively small percentage of the studies of the WFC influence so far. However, as the results of those studies are promising and optimistic, one can expect many further studies in this vein.

WFC AND CROSSOVER EFFECT

In the end, while describing the positive and negative consequences of WFC, one must also mention a newly emerging field, namely the crossover effect of WFC on marital partners or family members in general. Unfortunately, the crossover effect of WFC so far has not been studied thoroughly. Almost all of the attention has been given to the spillover effects, the question of how WFC influences, or is related to the employ-
ees' behavior. Undoubtedly, the spillover of work stress on the employees' family life is important for both the company and for the employees. But it is logical to assume that the many problems and stress the employees experience in work as well as their experience of WFC further affects their marital partners and families, which is considered as a crossover effect.

The crossover effect of WFC was defined more than a decade ago as the "transmission of stress, strain and depression (caused by WFC) from one member of a dyad to another" (Bolger et al., 1989). Since then, a relatively small number of studies on this problem was performed (Bolger et al., 1989; Weithington, 1989; Hammer et al., 1997; Westman et al., 2004), which makes WFC crossover effect almost a terra incognita. Taking the studies of WFC crossover as a starting point and also taking into consideration that it probably co-varies with many societal variables such as individualism-collectivism or the general system of values of the particular country, we have decided to investigate the relationship between work-related stressors, WFC and crossover effect on marriage quality in Croatia.

WORK-RELATED STRESSORS AND WFC

There have been several efforts to classify variables representing antecedents or work-related stressors of the WFC (Byron, 2005; Frone, 2003) and for the purposes of our study we have decided to use the classification offered by Greenhaus and Beutell (1985). According to that classification one can distinguish three groups of antecedents as potential work-related stressors. These are: time based pressure, strain, and behavioral incompatibilities. In our research we have included the first two groups of antecedents only, because they represent the socially sensitive, important and maybe specific sources of WFC in Croatia. Time pressure variables are long working hours, work overtime and shift work requirements. Strain variables are job involvement, organizational commitment and work stress. These two groups of variables proved to be important work antecedents of the work-family conflict in many studies (Ford et al., 2007).

TIME BASED PRESSURE VARIABLES AS ANTECEDENTS OF WFC

The notion of time pressure is based on the scarcity hypothesis (Buck et al., 2000) according to which human energy is limited and if one devotes more time and energy to one activity, for example to the work in the company, less time and energy is left for other roles or activities such as leisure or family life, what among other things, can create WFC. And indeed,
with the exception of some rare studies pointing to no relation between the number of work hours and WFC (Wallace, 1997), or stressing that the relation between work hours and WFC depends on specific needs and situation of the individual (Barnett et al., 1999), most of the studies are clearly showing a positive relationship between the number of weekly hours devoted to work and WFC (Frone et al., 1997; Grzywacs & Marks, 2000; Gutek et al., 1991; Netemeyer et al., 1996). Some exceptionally rare cross-cultural studies on this topic have confirmed this statement also (Hill et al., 2004; Spector et al., 2004).

The relationship between overtime work and WFC was not so much studied as the relationship between work hours and WFC, but we can assume that the variable overtime work could be as intensive a stressor or predictor of WFC as is the variable work hours. This is indirectly corroborated by the results of an extensive study on nonstandard work schedule conducted on 3,476 married couples (Presser, 2000).

Shift work is a third variable among time pressure variables and it has proved to be an important antecedent of WFC. It is defined as "any arrangement of daily working hours that differs from the standard daylight hours" (Smith et al., 2003, pp. 163). For a long time now it has been well proven that shift workers are at a greater risk for physical and psychological disease than employees working in one shift, usually the morning one (Smith et al., 2003). As an outcome of shift work WFC was not so thoroughly studied as physical or psychological well-being of the employees. Nevertheless, according to a relatively small number of studies, it could be clearly stated that shift work creates WFC and negatively affects various marital processes via WFC, including marriage quality and marriage stability (Presser, 2000; Van Amelsvoort et al., 2004; Wilson et al., 2007; White & Keith, 1990).

**STRAIN VARIABLES AS ANTECEDENTS OF WFC**

Among the strain variables that are antecedents of WFC there is primarily work involvement, work stress and to a lesser degree organizational commitment. We have included in the study all three variables as they proved to be the important predictors of WFC (Ford et al., 2007).

Work involvement is usually conceptualized by Kanungo’s definition according to which it "is the extent to which one is identified with his/her work" (Kanungo, 1982). Research results of many studies on WFC conducted primarily in North America, showed, with some exceptions (Frone et al., 1992), that work involvement was positively related to WFC (Beutell &Witting-Berman, 1999; Adams et al., 1996; Hammer et al.,
but it is still an open question how it would be an important predictor of WFC in societies and cultures different from North American ones, so we included it in our study as the strain variable.

Work stress has been for a long time a popular topic in social research because of its social relevance and possible implications for work organizations. Like many other concepts it was defined differently (Kahn & Byosiere, 1992; Selye, 1950), but for purposes of our study we have used the definition given by Dipboye et al. (1994, pp. 290), according to which work stress is "any circumstance that places special physical and/or psychological demands on a person so that an unusual or out-of-the-ordinary response occurs".

Some meta-analytic studies have clearly pointed out the significance of work stress as a predictor of WFC (Byron, 2005; Ford et al., 2007). Moreover, among all strain variables, work stress turned out to be one of the most important predictors of WFC. It was possible to explain 17.5% of the work-family conflict or work-family interference by using only the work stress variable and together with work involvement, work support and work hours variables it explained even 37% of the variance of WFC in some studies (Ford et al., 2007).

Organizational commitment is the last variable in the group of strain antecedents. In earlier studies it was defined as "the strength of an individual's identification with and involvement in a particular organization" (Porter et al., 1974). In contemporary studies it is usually conceptualized as "affective commitment reflecting an emotional attachment to an organization, continuance commitment reflecting motivation to remain with an organization and normative commitment representing a sense of moral obligation to an organization" (Meyer et al., 1990).

We should say that most of the studies trying to establish a relationship between WFC and organizational commitment conceptualized commitment as an affective relationship between employees and organization and this relationship turned out to be negative (Netemeyer et al., 1996; Thompson et al., 1999), but it is really difficult to derive any more general conclusions based only on those results. It seems to us that the relationship between WFC and organizational commitment is appealing for more studies to be done before any general conclusion on this relationship is made.

Discussing different theoretical approaches and empirical studies on the work-related stressors and WFC we should emphasize that most of those studies are coming from North America, only some from Europe and rarely they represent a cross-cultural comparison effort. There is no doubt that those
research results are a valid explanation of antecedents and outcomes of WFC for the countries where the studies were conducted, but still there is an important question whether the explanations offered in those studies are also generally acceptable. Namely, the question could be raised if there are some specific societal and cultural variables, which could be important moderators of the influence of work-related stressors and the intensity of the work-family conflict? And also, are the antecedents and consequences of WFC the same in societies of different social, political and legislative structure or value system, or maybe some specific, societal and cultural variables influence both work-related stressors, WFC and its consequences? We want to emphasize that this is a substantial question related to the WFC, as studies might reveal that WFC is non-existent as a problem in some cultures while in others it might influence the lives of men, women and whole families to a great extent. We hope that in clarifying this dilemma our study could represent a small contribution.

**PRESENT STUDY**

Starting from the existing theoretical explanations and research results and also taking into consideration the social and cultural context of contemporary Croatia, we have created three hypothetical models of the relationship between work-related stressors and marriage quality as experienced by marital partners. In the models each path (arrow) represents one hypothesis. The first model represents the direct hypothetical influence of work-related stressors on marriage quality as presented in Figure 1. In this model we have included two groups of variables as independent or exogenous ones. The first group represents time pressure variables: daily work hours, overtime work and shift work and the second group represents work strain variables; work involvement, work stress and organizational commitment.

In the second model the same exogenous variables were included as in the first one, but several mediation variables were added also. Those were: WFC, marital strain and intimacy. We have included those variables as mediators because it was logical to assume that they are affected by exogenous variables and at the same time they mediate or influence the dependent variable marriage quality. It is well known that work-related stressors affect WFC, and it is logical to assume that intensive WFC will create marital strain. Furthermore, it is logical to assume that intensive marital strain will decrease intimacy as experienced by marital partners, which will eventually affect the variable marriage quality. In the third model the same exogenous and endogenous variables were includ-
ed as in the second model, but the variable number of children in the family as a covariate or control variable was added as presented in Figure 2. We have included the variable number of children as a covariate, because we have assumed that intensity of WFC will be higher if there are more children in the family. In all three models marriage quality was the dependent variable. According to all models, we have hypothesized correlations among independent or exogenous variables.

METHOD

Participants

The participants in our study were 340 dual-earner couples representing a quota sample of the city of Zagreb, the capital of Croatia, and the Zagreb metropolitan area on the variable husband's education. Both marital partners were employed full-time. The age of the wife was M=35.00 (SD=8.16) years and the age of the husband was M=38.28 (SD=7.82).

Of the total number of wives, 17.64% had elementary school education (8 years of schooling), 47.62% high school education (twelve years of schooling) and 34.70% were college or university graduates (sixteen years of schooling). Of the total number of husbands, 27.64% had elementary school education, 42.05% high school education and 30.31% were college or university graduates. Of the total number of wives 63.82% never work overtime, 24.12% work several times per month and 10.88% work overtime several times per week. Husbands work overtime more frequently: 35.59% never work overtime, 40.88 several times per month and 23.53% work overtime several times per week. The majority of wives work only in one shift: 67.65% only in the morning, 27.65% morning and afternoon and 4.7% morning, afternoon and night shift. On the other hand, 65.59% of husbands work only in the morning, 19.20% morning and afternoon and 15.29% work in all three shifts. The marriage duration in the sample was M= 12.31, (SD= 7.68) years.

Variables and measures

Exogenous or independent variables
Two groups of independent or exogenous variables were included in the study: pressure and time based variables. In the group pressure variables: Work involvement, Organizational commitment and Work stress were included in the study as independent or exogenous variables, and in the group of time based variables Work schedule representing latent structure variable was included. This variable was derived from measure-
ment variables: Absence from home because of work (working + commuting time), Overtime work and Shift work.

Pressure based variables
1. Work involvement is a continuous variable measured by the scale developed by Kanungo (1982). The scale consists of six items of five-point interval format from 1 = strongly disagree to 5 = strongly agree. Sample of items: "Work is something people should get involved in most of the time", or "Work should be considered central to life". The obtained internal consistency Cronbach $\alpha$ was .86 for wives and .69 for husbands.

2. Organizational commitment as it was conceptualized by Meyer, Allen and Smith (1993) consists of three subscales, but in our study we have used only affective subscale because in previous studies high and positive correlation between affective and continuance and normative subscale was obtained (Ford et al., 2007).

   Affective commitment is a continuous scale of five-point interval format from 1 = strongly disagree to 5 = strongly agree. Sample of items: "I would be very happy to spend the rest of my career with this organization" or "This organization has a great deal of personal meaning for me". The obtained reliability of the scale was satisfactory. Internal consistency Cronbach $\alpha$ for wives was .85 and for the husbands .86.

3. Work stress is the last variable in the group of pressure variables and it represents latent structure derived from two indicator variables or subscale, part of the Anxiety-stress questionnaire (House & Rizzo, 1972). Originally, the Anxiety-stress questionnaire consists of three subscales: Job induced anxiety, Somatic tension and General fatigue and uneasiness. In our study we used the first two subscales because of their satisfactory reliability and also by using factor analysis they proved to have measured one factor. Job induced anxiety variable is a continuous scale consisting of 7 items with 1= Yes and 0 = No format. The sum of all yes answers represents the intensity of anxiety induced by work. Sample of items: "I feel fidgety or nervous because of my job", or "Problems associated with work have kept me awake at night". Obtained internal consistency Cronbach $\alpha$ representing tetrachoric correlation was $\alpha = .88$, for both wives and for the husbands. Somatic tension variable was measured by subscale consisting of 5 items with 1 = Yes and 2 = No format. Sample of items: "I have trouble with my digestion" or "I am often bothered by acid indigestion or heartburn". The obtained Cronbach $\alpha$ for both marital partners was $\alpha = .82$. Both variables were satisfactorily loaded on the latent structure variable Work stress.
Time based variables

Work schedule is a latent structure variable derived from three indicators or measurement variables. Those were: 1. Number of hours marital partner is absent from home because of work representing a continuous variable, 2. Work overtime being a nominal scale and consisting of three categories: 1. never or very rarely, 2. several times per month and 3. very often or several times per week, and 3. Shift work being also a nominal scale and consisting of three categories: 1. working only in the morning shift, 2. working in the morning and afternoon shift and 3. working in the morning, afternoon and night shift.

Endogenous or dependent variables

To test the mediation model shown in Figure 2 we have included in the study four endogenous variables. Those are Work-family conflict (WFC), Marital strain, Marital intimacy and Marriage quality.

1. Work-family conflict was measured by the Work-family conflict scale developed by Netemeyer et al. (1996). The scale consists of five items of five-point interval format from 1 = strongly disagree to 5 = strongly agree. Sample of items: “The demands of my work interfere with my home and family life” or “My job produces strain that makes it difficult to fulfill family duties”. The obtained internal consistency Cronbach α for both wives and husbands was .92.

2. Marital strain. This variable was measured by a Marital strain subscale, a part of Family inventory of life events and changes (McCubbin et al., 1996) consisting of 5 items with 1 = Yes and 0 = No format. Sample of items: "Recently I had some difficulties in sexual relationships with my marital partner" or "I had increased difficulty with former or separated spouse". The obtained internal consistency Cronbach α representing tetrachoric correlation was .95 for wives and .97 for the husbands.

3. Marital intimacy. The variable was measured by Marital intimacy scale developed by Schafer and Olson (1981). It comprises five subscales measuring emotional, social, sexual, intellectual and recreational intimacy between marital partners. Each subscale is of six-item five-point interval format. Sample of items: "My partner can really understand my hurts and joys" or "Sexual expression is an essential part of our relationship". The total score representing marital intimacy was obtained by summing up scores on all subscales. Internal consistency Cronbach α was .95 for wives and .94 for the husbands.
Marriage quality. The variable was measured by MQI (Marital Quality Index) developed by Norton (1983). The scale has been previously used and validated (Funk & Rogge, 2007; Heyman et al., 1994). It consists of six items of five-point format. Sample of items: ”We have a good marriage” or ”My relationship with my partner makes me happy”. Internal consistency Cronbach α was .96 for both marital partners.

RESULTS

Descriptive statistics

Before evaluating our models we shall present measures of central tendency and association among the observed exogenous and endogenous variables, separately for the husbands and wives. Those results are presented in Tables 1 and 2.

<table>
<thead>
<tr>
<th>Observed variables</th>
<th>M</th>
<th>SD</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<th>12</th>
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</thead>
<tbody>
<tr>
<td>1 Number of children in the family</td>
<td>1.34</td>
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<tr>
<td>3 Wife’s job induced anxiety</td>
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<td>.00</td>
<td>-.09</td>
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<tr>
<td>4 Wife’s somatic tensions</td>
<td>1.91</td>
<td>1.92</td>
<td>.00</td>
<td>-.13</td>
<td>.53**</td>
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<td>5 Wife’s WFC</td>
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<td>.02</td>
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<td>.09</td>
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<td>.13</td>
<td>.10</td>
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<td>.03</td>
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<td>.62**</td>
<td>-.15</td>
<td>-.21*</td>
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<td>-.04</td>
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<td>.00</td>
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<td>.23*</td>
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<td>.00</td>
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</table>

*p<.05, **p<.001

TABLE 1

Means, standard deviations and correlations for the variables representing influence of wife’s work-related stressors on the husband’s marriage quality

Associations among the majority of variables representing husband's work-related stressors were low and insignificant. The highest correlation was obtained between Husband's job induced anxiety and Husband's somatic tensions. Generally, low correlations were obtained among exogenous and endogenous variables, but a positive and high correlation was obtained between Wife's intimacy and Wife's marriage quality and a negative and significant correlation between Wife's intimacy and Husband's marital stress.

A similar pattern of associations was found for the wife's work-related stressors as presented in Table 2. Positive and significant correlations were obtained among some exogenous variables, low correlations among exogenous and endogenous and a high and positive correlation between Husband’s intimacy and his Marriage quality.
Table 2
Means, standard deviations and correlations for the variables representing influence of husband's work-related stressors on the wife's marriage quality

<table>
<thead>
<tr>
<th>Observed variables</th>
<th>M</th>
<th>SD</th>
<th>Correlations (N=340)</th>
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<td>1 Number of children in the family</td>
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<td>.00</td>
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<td>4 Husband's somatic tensions</td>
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<td>7 Husband's marital stress</td>
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<td>18.46</td>
<td>5.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

*p<.05, **p<.001

Overview of the Analysis

Three models were fitted or evaluated for each marital partner separately. The first model represents the direct influence of a partner's work-related stressors on the B partner's marriage quality, or direct crossover effect as presented in Figure 1. The second is the mediation model consisting of exogenous and a group of mediation variables and the dependent variable Marriage quality. With this model, we wanted to check for the indirect influence of a partner exogenous variables on B partner marriage quality. Finally, the third model is the mediation model with an added covariate, or more precisely, when the number of children in the family is included in the model as a covariate variable, as presented in Figure 2. All three models are by nature recursive. The second and third model are nonstandard, meaning that they consist of observed and latent variables. All models were evaluated using the EQS program, version 6.1 (Bentler & Wu, 2006) separately for the wives and the husbands. The final structural models were fitted by adding standardized paths. Standardized path coefficients with absolute values less than .10 may indicate a "small" effect; values around .30 a "typical" or "medium" effect; and "large" effects may be indicated by coefficients with absolute values >.50.
Covariance matrix was used as an input and missing data were substituted by means of the corresponding variable. Because distribution on the majority of variables was skewed or even very skewed, ML ROBUST procedure for non-normal data was applied as a method of parameter estimation. Also, because two observed exogenous variables: Overtime work and Shift work were nominal scales, specific method for categorical variables was applied in the models estimation. Overall goodness of fit for each model was assessed by the $\chi^2$ statistics, Bentler's Comparative fit index CFI (Bollen & Long, 1993), and Browne and Cudeck's (1993) Root means square error of approximation (RMSEA). Having estimated several models for each marital partner, there was the question, which of the models fitted best. To answer this question we have used Akaike information criterion (AIC) and Consistent Akaike information criterion (CAIC) indexes. Those indexes are used in SEM to select among competing nonhierarchical models estimated with the same data. Indexes are somewhat different because CAIC takes in account the size of the sample, but it is recommended that both indexes are used.
Evaluation of the models was performed separately for the wife and the husband. We shall present first how our data for Wife’s work-related stressors and their influence on Husband’s marriage quality fitted the models presented in Figure 1 and 2.

**Wife’s work-related stressors and Husband’s marriage quality**

After many changes done in accordance with the LaGrange multiplier test, we obtained ML ROBUST $\chi^2$ for our three models as presented in Table 3. As we can see, all three models fitted our data very well. CFI for all models were very high or satisfactory and RMSEA was zero or very close to it, with very narrow confidence interval.

<table>
<thead>
<tr>
<th>Model</th>
<th>ML ROBUST $\chi^2$</th>
<th>df</th>
<th>$p$</th>
<th>CFI</th>
<th>RMSEA 90% interval</th>
<th>AIC</th>
<th>CAIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct influence</td>
<td>12.70</td>
<td>11</td>
<td>$p&gt;.05$</td>
<td>.99</td>
<td>.02</td>
<td>-.06</td>
<td>9.25</td>
</tr>
<tr>
<td>Mediation model</td>
<td>46.08</td>
<td>36</td>
<td>$p&gt;.05$</td>
<td>.97</td>
<td>.03</td>
<td>-.05</td>
<td>25.92</td>
</tr>
<tr>
<td>Mediation model with covariate</td>
<td>19.95</td>
<td>46</td>
<td>$p&gt;.05$</td>
<td>1.00</td>
<td>.00</td>
<td>-.07</td>
<td>72.05</td>
</tr>
</tbody>
</table>
However, a substantively different amount of the variance of dependent variable was explained by the three models. For "Direct influence model" we obtained $R^2 = .02$, for "Mediation model" $R^2 = .38$ and for "Mediation model with covariate" $R^2 = .39$, which means that the direct influence of Wife's work-related stressors on Husband's marriage quality was extremely small and that it was justified to propose two mediation models. The mediation model with covariate explains the largest proportion of variance of Husband's marriage quality. The same model has the most acceptable AIC and CAIC and as such reflects the highest probability as to which parameter the estimates from the sample will cross-validate in the future ones. We thought that there was sufficient reason to analyze the model more thoroughly. As presented in Figure 3 there is significant association among exogenous or independent variables Wife's work stress and Wife's work schedule ($\beta = .41$, $p < .05$) and Wife's work involvement and Wife's organizational commitment ($\beta = .23$, $p < .05$).
There is also significant path from Wife's work stress, ($\beta = .13$, $p < .05$), Wife's work involvement and Wife's WFC ($\beta = .03$, $p < .05$). Although this effect is small, wives who experience more intensive work stress and who are more involved in the work will experience more intensive WFC. It should be noted also that there is positive correlation between Wife's work stress and Wife's workschedule, pointing to the indirect effect of Wife’s work schedule on Wife’s WFC.

Next, significant and positive path was obtained between Wife’s WFC and Wife’s marital stress ($b = .09$, $p < .05$) meaning that increment on variable Wife’s WFC will increase Wife’s experience of marital stress, or that there is spillover from Wife’s work to the marriage domain. Spillover effect or Wife’s marital stress has negative and crossover effect on Husband’s marital intimacy ($b = -.20$, $p < .05$) or, the more wives experience marital stress the less husbands will experience marital intimacy. Eventually, according to the obtained results, Husband’s marital intimacy has a great and positive effect on their marriage quality ($b = .62$, $p < .05$). Besides those, there are some other paths which should be discussed. For instance, the small effect ($b = .02$, $p < .05$) of the variable Number of children in the family on Wife’s WFC, meaning that children in the family do not substantively increase WFC as experienced by wives, which was contrary to our expectations. In addition, it is important to point out that WFC is not a complete mediator variable because Wife's work stress directly affected Wife's marital stress and Husband's marital intimacy. Altogether, we can conclude that Wife's work-related stressors negatively affected Husband's marriage quality.

**Husband’s work-related stressors and Wife’s marriage quality**

Using the LaGrange multiplier test we have modified several times models presented in Figure 1 and 2 until there was a very good fit between the models and the data on Husband’s work-related stressors and Wife’s marriage quality. All ML ROBUST $\chi^2$ are insignificant, CFI indexes are very high and RMSEA absolutely satisfactory. According to AIC and CAIC values, the model with covariate proved to be the best predictor whose parameter estimates will most probably cross-validate in future studies. Also, the obtained $R^2 = .57$ shows that a very large proportion of the variance of the variable Wife’s marriage quality was explained by the model. Analyzing relationships among the variables representing the model, we can see that there is a correlation between Husband’s work stress and Husband’s work schedule ($\beta = .34$, $p < .05$) and Work involvement and organizational commitment ($\beta = .19$, $p < .05$). There is a positive and significant path between Husband’s
work schedule and Husband’s WFC, meaning that Husband’s absence from home because of work, overtime work and shift work increase WFC as experienced by the husbands. Husbands WFC is also affected by the covariate variable Number of children in the family ($\beta = .10, p<.05$). There is a small effect of the Husband’s WFC on Husband’s marital stress ($\beta = .07, p<.05$) representing spillover from work to marriage domain, and negative effect or crossover, on Marital stress as experienced by the wives ($\beta = -.25, p<.05$). Finally, there is a positive and large effect of Wife’s marital intimacy on Wife’s marriage quality ($\beta = .75, p<.05$).

<table>
<thead>
<tr>
<th>Model</th>
<th>ML ROBUST $\chi^2$</th>
<th>df</th>
<th>p</th>
<th>CFI</th>
<th>RMSEA</th>
<th>90% interval</th>
<th>AIC</th>
<th>CAIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct influence</td>
<td>12.13</td>
<td>11</td>
<td>p&gt;.05</td>
<td>.99</td>
<td>.02</td>
<td>.00-.06</td>
<td>-9.87</td>
<td>-62.99</td>
</tr>
<tr>
<td>Mediation model</td>
<td>47.93</td>
<td>38</td>
<td>p&gt;.05</td>
<td>.97</td>
<td>.03</td>
<td>.00-.05</td>
<td>-28.06</td>
<td>-211.56</td>
</tr>
<tr>
<td>Mediation model with covariance</td>
<td>51.81</td>
<td>48</td>
<td>p&gt;.05</td>
<td>.99</td>
<td>.02</td>
<td>.00-.04</td>
<td>-44.18</td>
<td>-275.98</td>
</tr>
</tbody>
</table>

It is important to point out that there is no direct effect of the independent variables on the mediation variables Husband’s marital stress, Wife’s intimacy or dependent variable Marriage quality.

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**TABLE 4**
Evaluations of the models on husband’s work-related stressors, WFC and wife’s marriage quality

**FIGURE 4**
Husband’s work related stressor, WFC, and wife’s marriage quality

*p<.05
DISCUSSION

Wife's work-related stressors directly affect Husband's marriage quality to a very small degree, but according to the mediation model as presented in Figure 3, Husband's marriage quality is affected by those variables indirectly. They affected Wife's WFC, which via Wife's marital stress affected Husband's marital intimacy and Husband's marriage quality. In other words, our hypothesis about crossover effect was confirmed. Wife's marital stress had the largest indirect (STCOEF = -.204) and Husband's marital intimacy the largest total effect (STCOEF = .621) on Husband's marriage quality.

How Wife's work stress and work schedule are important for the Husband's marriage quality is also demonstrated by the path from Wife's work stress to Wife's marital stress and Husband's marital intimacy. There is no doubt that Wife's work and Marriage experience are interconnected and that Wife's work experience spilled over in her marriage domain and has had impact on the Husband's experience of marriage quality. The validity of this conclusion is reinforced by the large proportion of the variance of the variable Husband's marriage quality explained by this model. Curiously, the influence of the covariate variable Number of children in the family on the Wife's WFC although significant is very small or almost negligible. This is really difficult to explain. The only explanation we have, is that Wife's work-related stressors affected Wife's experience of WFC generally, or no matter how many children they have had, consequently the influence of the variable Number of children in the family on Wife's experience of WFC had to be small.

Husband's work-related stressors affected Wife's marriage quality in a different way, or more precisely, correlations among independent variables are lower and Husband's work schedule had the largest direct influence on WFC as experienced by husbands.

Work schedule: absence from home because of work, overt time work and shift work were the main reasons for Husband's experience of WFC, although work stress indirectly affected their experience of WFC also. According to the model there is spillover of WFC on Husband's marital stress and crossover on Wife's marital intimacy which affected the wives' marriage quality. Husband's marital stress had the largest indirect (STCOEF = -.192) and Wives' marital intimacy largest total effect (STCOEF = .755) on Wife's marriage quality. A very large proportion of the explained variance of the variable Wife's marriage quality gives additional value to the obtained results.

The covariate variable Number of children in family is also the predictor of Husband's WFC, or husbands will experience WFC more intensively if there are more children in the
family. According to the results, husband’s Work-related stressors affected wife’s WFC irrespectively of the number of children in the family. On the other hand, the intensity of the husband’s experience of WFC is related to the number of children, i.e. husbands will experience WFC more intensively if there are more children in the family.

Numerous studies have clearly demonstrated how work-related stressors and WFC influence employees’ behavior (Ford et al., 2007), more rarely how they affect the employee’s family (Frone et al., 1997). The innovation in our study was a more complex approach. Including in the study both marital partners, we were able not only to show that there is both spillover from work to family domain and crossover of one partner's work experience to the other partner's experience of marital intimacy and marriage quality, but also, we were able to present the whole network of relationships which have generally given better insight into the influence of work-related stressors on marriage quality. The results of the study have also clearly shown that in the Croatian social and cultural context relationships among work-related stressors are different than it has been obtained elsewhere in previous studies, but the influence of work-related stressors on marriage quality is similar.

In the end, we should say that like many other studies this study has certain limitations. The major limitation of this study is the cross-sectional approach. Although path analysis gives good insight into relationships among exogenous and endogenous variables, it is not adequate replacement for longitudinal approach. Also, our study was conducted in Zagreb and the Zagreb metropolitan area, or in a highly urbanized part of the country. The question is, whether we would have obtained the same or similar results if we had conducted the study in a less urbanized area of Croatia. These limitations should be taken into consideration in future studies.

REFERENCES


Mihovilović, M. A. (Ed.) (1975), Žena između rada i porodice (Woman between work and the family). Zagreb: IDIS.


Povezanost između radnih stresora i sukoba rad – obitelj: prijenos na bračnu kvalitetu drugog partnera

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Na temelju međunarodnog iskustva, kao i na temelju socioekonomskog uživanja u zemlji, kreirali smo tri teorijska modela o mogućem utjecaju radnog iskustva na doživljaj bračne kvalitete. Pretpostavili smo da se ženin ili mužev doživljaj rada prenosi na doživljaj bračne kvalitete drugog partnera. Prvi teorijski model predstavlja mogući direktan

Ključne riječi: sukob rad – obitelj, prijenos stresa, bračna kvaliteta

Bezug von Arbeitsstress und Konflikten auf der Relation Arbeitsplatz–Familie

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Schlüsselbegriffe: Konflikte auf der Relation Arbeitsplatz–Familie, Stressübertragung, Qualität des Ehelebens