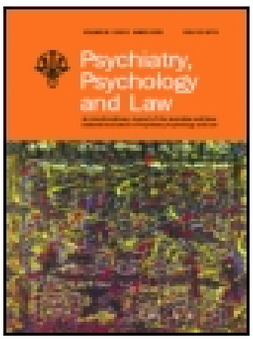

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Examining the association between work–family conflict and the work attitudes of job satisfaction and organizational commitment among Chinese correctional staff

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Considerable empirical research has shown that work–family conflict has a negative effect on the job satisfaction and organizational commitment of United States correctional staff. This study is the first to examine the effect of work–family conflict on job satisfaction and organizational commitment for staff at Chinese prisons. Findings from ordinary least squares (OLS) regression analyses indicated that strain-based conflict, behavior-based conflict and family-on-work conflict had negative effects on the job satisfaction of Chinese prison staff. Also, strain-based conflict and behavior-based conflict had negative effects on organizational commitment. Overall, the results support the conclusion that work–family conflict was generally perceived as stressful by Chinese prison staff and negatively impacted their job satisfaction and organizational commitment, as has been found among United States staff.

Key words: China; correctional staff; job satisfaction; organizational commitment; work–family conflict.

A growing body of research has examined the relationship between different workplace variables with job satisfaction and organizational commitment among correctional staff. The issue of work–family conflict has been one of these variables. Work–family conflict occurs when the work domain and home domain encroach on one another and cause conflict (Triplett, Mullings, & Scarborough, 1999). To date, the vast majority of the research concerning how work–family conflict affects job satisfaction and/or organizational commitment has focused on correctional staff in Western nations, particularly the United States. The People's Republic of China (henceforth, China) is the most populous nation in the world and a major nation on the world stage (World Factbook, 2018). The association between work–family conflict and the two work attitudes among correctional staff in China has received very little, if any, empirical attention; therefore, the current study was undertaken to fill this void. Jowell (1998) pointed out that 'the importance and utility to social science of rigorous cross-national measures is incontestable. They help to reveal not only intriguing differences between countries and cultures, but also aspects of one's own country and culture that would be difficult or impossible to detect from domestic data alone' (p. 168). The ability of cross-cultural research to result in paradigm-shifting realizations

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should not be underestimated. International studies are not only capable of narrowing the gaps between nations, but can also help bridge those gaps so that information flows more freely (Cao & Cullen, 2001). Conducting international research allows scholars to determine whether the association of a workplace variable, such as work–family conflict, with a salient work attitude, such as job satisfaction and/or organizational commitment, is universal (i.e. cuts across nations) or contextual (varies between cultures).

The current study examined how different dimensions of work–family conflict are associated with job satisfaction and organizational commitment among staff at two prisons in the southern Chinese province of Guangdong. It builds upon studies that have examined the association of work–family conflict with the work attitudes job satisfaction and organizational commitment among United States correctional staff by examining how the different dimensions of work–family conflict are associated with these important work attitudes among Chinese prison staff. As noted by Lindsay and Ehrenberg (1993), '[r]eplication is little discussed in the statistical literature nor practiced widely by statistically minded researchers. It is needed not merely to validate one's findings, but more importantly, to establish the increasing range of radically different conditions under which the findings hold, and the predictable exceptions' (p. 217). In order to place the current study into context, a brief overview of Chinese prisons and how they compare to United States prisons is needed.

Correctional institutions in China and the United States

Chinese prisons are closed institutions, and until recently no access was granted to outsiders, including Chinese scholars (Wu, 2003). As in Western nations, including the United States, China utilizes correctional facilities to incarcerate offenders to both punish and rehabilitate. Correctional facilities have a long history in China, with prisons being traced back to the Xia dynasty (2029−1559 BC; Jin, 1997). China has two types of correctional institutions: detention centers and prisons. Detention centers, similar to jails in the United States, hold persons having a sentence less than one year, awaiting trial, and pending transfer to prison to serve their sentence. Detention centers are under control of the Ministry of Public Security (China.Org.Cn, 2016; Hill, 2006). Prisons hold offenders who have been sentenced to imprisonment for more than one year and are under the direction of Bureau of Prison Administration in the Ministry of Justice (Hill, 2006). Chinese prisons tend to emphasize punishment, treatment and education of inmates to reform them (Jin, 1997).

There are approximately 1.65 million inmates confined in about 680 Chinese prisons, an incarceration rate of 118 inmates per 100,000 citizens, including 35 female prisons and 31 juvenile prisons, employing approximately 300,000 staff (Shao, 2011; World Prison Brief, 2018a). For comparison, there are approximately 1.5 million adult inmates confined in almost 1700 United States correctional institutions, an incarceration rate of 655 inmates per 100,000 citizens, employing about 430,000 staff (University of Albany, 2018; World Prison Brief, 2018b). Unlike the United States, which often classifies prisons based on security levels (e.g. minimum, medium and maximum), Chinese prisons do not have a set security level but instead distinguish inmates using different custody levels and sentence lengths. In the United States, the term correctional staff is frequently used. In China, the preferred terms are prison staff, prison police or corrections police (Hill, 2006; Wu, 2003). The classification of Chinese prison staff also differs from that in Western nations. For example, in the United States, correctional staff are broken down into custody (e.g. correctional officers) and non-custody (e.g. counselors, food service, business office, etc.). Although Chinese prisons have different

sections, there are no clear divisions among Chinese prison staff. Chinese staff are expected to carry out assigned duties across the entire spectrum of prison work. Duties and tasks within the prison are assigned by need and individual and not by position (Hill, 2006; Wu, 2003). All Chinese prison staff wear uniforms, regardless of job duties or supervisory level (Wu, 2003). Perimeter security in Chinese prisons is provided by Chinese People's armed police, a separate entity under the Central Military.

Chinese prison staff are civil servants with good job stability (Wang & Kong, 2006). Nevertheless, like their Western counterparts, Chinese prison staff work in a challenging work environment compared to other jobs. They are responsible for controlling and directing offenders who are being held against their will. Staff must be ready at all times to deal with disturbances, violence and emergencies. Prisons operate 24 hours a day, every day of the year, including holidays. Chinese prison staff work approximately 12-hour shifts each day, while other Chinese non-correctional government employees typically work 8-hour shifts (Hu, Wang, Liu, Wu, Yang, Wang, & Wang, 2015; Wang & Kong, 2006). The occurrence of work–family conflict among Chinese prison staff is a real possibility, as it is for Western correctional staff. What is not clear is how different types of work–family conflict affect the job satisfaction and organizational commitment of Chinese correctional staff. Although work–family conflict, job satisfaction, organizational commitment and the other latent variables of interest were primarily defined and studied in Western countries, the operationalization of the variables was kept consistent to allow cross cultural comparisons.

Literature review

The literature review is divided into four subsections. The first provides a definition of job satisfaction and lays a foundation for why it is important to examine how workplace variables are associated with it. The second provides a similar background and foundation for organizational commitment. The third discusses work–family conflict, including past correctional studies on how work–family conflict is related to job satisfaction and organizational commitment among correctional staff, with the vast majority of this research focusing on among Western, mainly United States, prison staff. The fourth subsection provides the hypotheses concerning how the different types of work–family conflict would be associated with job satisfaction and organizational commitment among Chinese prison staff.

Job satisfaction

Locke (1976) defined job satisfaction as 'a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences' (p. 1300). Muchinsky (1987) viewed job satisfaction as an emotional, affective response resulting from the extent to which a person derives pleasure from his or her job. According to Spector (1997), job satisfaction is 'the extent to which people like or dislike their jobs' (Spector, 1997, p. 2). Job satisfaction is a positive affective (i.e. emotional) work attitude that relates to workers' perceptions that their jobs meet their wants and needs (Lambert, Barton, & Hogan, 1999). Job satisfaction refers to employees' perceptions of overall satisfaction from the job rather than from specific facets of the job (Camp, 1994; Lu, Barriball, Zhang, & While, 2012). Job satisfaction is an important work attitude reported to be related to greater support for treatment of offenders, lower job burnout, increased life satisfaction, higher engagement in organizational citizenship behaviors (going beyond what is expected at work), lower turnover intent/turnover, reduced absenteeism, increased workplace creativity, more willing to support organizational changes and higher work performance (Byrd, Cochran, Silverman, & Blount, 2000; Farkas, 1999; Fox, 1982; Griffin, Hogan, Lambert, Tucker-Gail, &

Baker, 2010; Jurik & Winn, 1987; Lambert, 2010; Lambert, Edwards, Camp, & Saylor, 2005; Lambert, Hogan, Paoline, & Baker, 2005; Lambert, Jiang, Liu, Zhang, & Choi, 2018; Leip & Stinchcomb, 2013; Matz, Wells, Minor, & Angel, 2013; Robinson, Porporino, & Simourd, 1997; Whitehead & Lindquist, 1986; Wright, 1993).

Organizational commitment

Organizational commitment refers to the bond between the staff member and the employing organization (Lambert, Keena, May, Haynes, & Buckner, 2017; Mowday, Porter, & Steers, 1982). There are different types of organizational commitment based on how the bond is formed, with continuance commitment and affective commitment being two major types (Griffin & Hepburn, 2005; Lambert, Griffin, Hogan, & Kelley, 2015). The bonds for continuance commitment form because of investments staff make in the organization, such as pay, benefits, retirement, nontransferable job skills, promotions and past missed opportunities (i.e. lost job opportunities with other organizations), which bond the person to the organization to protect the investments (Allen & Meyer, 1990; Jaros, Jermier, Koehler, & Sincich, 1993).

Affective commitment, another major type of organizational commitment, is an affective psychological bond that forms because of workers' perceptions that the organization treats them in a positive manner and that the overall work experience is positive (Allen & Meyer, 1990; Lambert, Hogan, & Jiang, 2008; Lambert et al., 2017). This type of commitment is based on the reciprocity principle, which contends that employees who are treated in a positive manner by the organization and have positive overall work experiences will develop favorable views of the organization and are more likely to trust the organization and psychologically bond with it (Kramer, 1999). This type of commitment is voluntary and includes identification with the organization, internalization of organizational goals, acceptance of organizational core values and willingness to put forth effort to help the organization be successful (Lambert, Hogan, & Keena, 2015; Meyer & Allen, 1984; Mowday et al., 1982). As noted by Allen and Meyer (1990), 'employees with strong affective commitment remain because they *want* to and those with strong continuance commitment because they *need* to' (p. 3).

Affective commitment has been linked with a wide array of positive outcomes, and it is the most common form of organizational commitment studied among correctional staff (Lambert, Hogan, & Jiang, 2008). Among correctional staff, greater levels of affective commitment are associated with lower absenteeism, reduced turnover/intent, greater life satisfaction, higher prosocial behaviors (i.e. going beyond what is expected at work) and improved job performance (Camp, 1994; Culliver, Sigler, & McNeely, 1991; Lambert, Edwards, et al., 2005; Lambert & Hogan, 2009; Matz et al., 2013). Conversely, there is evidence that some staff members with high continuance commitment may feel trapped in the job, resulting in negative effects on staff and the correctional organization, such as job stress and job burnout (Lambert, Griffin, et al., 2015; Lambert, Kelley, & Hogan, 2013). The current study's focus was affective commitment.

Work–family conflict

Work and home are the two major domains for most adults. In a perfect world, these two domains are balanced. In reality, this not the case (Hogan, Lambert, Jenkins, & Wambold, 2006). Work–family conflict occurs when one domain encroaches on the other and causes conflict (Brough & O'Driscoll, 2005; Hsu, 2011). As defined by Greenhaus and Beutell (1985), work–family conflict is 'a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is,

participation in the work (family) role is made more difficult by participation in the family (work) role' (p. 77). Work–family conflict is bidirectional, in that problems at work can cause conflict at home, and problems at home can cause conflict at work (Armstrong, Atkin-Plunk, & Wells, 2015; Hsu, 2011; Netemeyer, Boles, & McMurrian, 1996). The first direction is referred to work-on-family conflict, and the second is referred to as family-on-work conflict (Armstrong et al., 2015; Hogan et al., 2006).

Work problems sometimes follow the person home, resulting in work-on-family conflict. The three major types of work-on-family conflict are time-based conflict, strain-based conflict and behavior-based conflict (Lambert, Hogan, Camp, & Ventura, 2006; Netemeyer et al., 1996). Time-based conflict occurs when the amount of time or work schedule interferes with home life, causing conflict (Armstrong et al., 2015; Hsu, 2011). As noted earlier, regardless of country, correctional facilities need to be staffed 24 hours a day, 365 days a year, including holidays and during major family events. Work schedules may not integrate well with the schedules of other family members. In addition, correctional institutions may require mandatory unexpected overtime to cover posts for absent staff and to deal with emergencies. In the end, this may result in time-based conflict for people, such as having to miss major family events and obligations (Lambert et al., 2006).

Strain-based conflict occurs when work issues and problems follow a staff member home and cause conflict, decreasing the quality of home life (Armstrong et al., 2015; Lambert et al., 2006). As noted by Armstrong and Griffin (2004), 'few other organizations are charged with the central task of supervising and securing an unwilling and potentially violent population' (p. 577). This type of occupation is more likely than other occupations to involve contentious conflicts and violent episodes. These types of work problems can raise the frustration level of staff and make it difficult for staff to shut off these negative feelings at the end of their shift. For example, a staff member who used necessary force on an insolent inmate who refused to follow orders can result in adrenalin spikes and heightened stress, which can follow the staff member home, resulting in tension and conflicts with family and friends (Lambert, Hogan, & Altheimer, 2010).

Behavior-based conflict results when work and home behaviors and roles are not compatible with one another and cause problems for the staff member (Armstrong et al., 2015; Lambert et al., 2006). As noted by Greenhaus and Beutell (1985), 'specific patterns of in-role behavior may be incompatible with expectations regarding behavior in another role' (p. 81). The behavioral roles used in correctional facilities, such as being suspicious and emotionally detached, may not work well when interacting with friends and family (Lambert et al., 2006). For example, conflict is likely to result if a staff member barks orders at family members or questions their actions. Likewise, roles of being loving, supportive and forgiving are likely to be necessary for dealing with family and friends but are not likely to be acceptable in a prison. In a prison, a staff member is expected to be detached, be objective, and have their guard up. For many, quickly switching roles between work and home may not be possible.

Family-on-work conflict is possible for correctional staff (O'Driscoll, Brough, & Kalliath, 2006). Correctional staff can have home problems, such as arguments with family members, divorces, financial issues and illness of friends or family members, which are likely to affect staff negatively and are difficult to leave at home. Home problems can result in problems at work, such as being in a bad mood, argumentative, or distracted from work. For example, a staff member who had a nasty fight with his or her spouse at home may come to work angry, taking it out on inmates or coworkers, with new work problems arising (Liu, Lambert, Jiang, & Zhang, 2017).

As institutional corrections work involves a good possibility for work–family conflict, previous research has examined the effects of correctional work–family conflict. Among U.S. correctional staff, behavior-based, strain-based and family-on-work conflict have been observed to raise the level of job stress and job burnout (Armstrong et al., 2015; Lambert et al., 2006, 2010; Triplett et al., 1999). Strain-based and behavior-based conflict have both been found to be positively related to Chinese correctional staff job stress (Liu et al., 2017). Time-based, strain-based and behavior-based conflict and family-on-work conflict have been reported to have negative effects on U.S. staff job satisfaction (Armstrong et al., 2015; Lambert, Hogan, & Barton, 2002; Lambert et al., 2006). Further, time-based, strain-based, behavior-based and family-on-work conflict have been found to have a negative effect on affective organizational commitment of U.S. prison staff (Lambert et al., 2006; Lambert, Hogan, Kelley, Kim, & Garland, 2014). In another study of United States staff, strain-based conflict and family-on-work conflict both had negative relationships with organizational citizenship behaviors (Lambert et al., 2013).

A composite measure of work–family conflict (i.e. combining the different types into one variable) has been found to be related with greater stress, job burnout and depression for United States staff (Griffin, 2006; Lambert & Hogan, 2010; Lambert, Hogan, & Griffin, 2007; Obidoa, Reeves, Warren, Reisine, & Cherniack, 2011). Likewise, a composite measure of work–family conflict has been associated with reduced organizational commitment and life satisfaction for U.S. correctional staff (Hogan et al., 2006; Lambert, Hogan, Barton, Jiang, & Baker, 2008; Lambert, Hogan, Elechi, Jiang, Laux, Dupuy, & Morris, 2009; Lambert, Hogan, et al., 2005). A composite measure of work-on-family conflict had a negative association with job satisfaction for Taiwanese correctional staff (Hsu, 2011). Additionally, a composite measure of work–family conflict was associated with reduced support for treatment of inmates by staff at a United States prison (Lambert & Hogan, 2009).

Several conclusions can be gleaned from past studies. First, work–family conflict is a stressor (i.e. something that causes strain) with no known positive effects. Second, the effects of the different types of work–family conflict tend to vary by the outcome being examined and across studies. Third, there has been limited research to date that has examined the effects of the four types of work–family conflict on correctional staff, including their job satisfaction and organizational commitment, and there is a need for additional research in this area. Fourth, there has been little published research on the effects of the different types of work–family domain spillover on correctional staff in non-western nations, including China. As such, it is unclear what, if any, effects the different types of work–family conflict would have with the job satisfaction and organizational commitment of Chinese correctional staff.

Research hypotheses

As each type of work–family conflict tends to be a stressor, the following hypotheses for Chinese correctional staff were made for the current study.

Hypothesis 1: Time-based conflict will have a negative effect on job satisfaction.

Hypothesis 2: Strain-based conflict will have a negative effect on job satisfaction.

Hypothesis 3: Behavior-based conflict will have a negative effect on job satisfaction.

Hypothesis 4: Family-on-work conflict will have a negative effect on job satisfaction.

Hypothesis 5: Time-based conflict will have a negative effect on organizational commitment.

Hypothesis 6: Strain-based conflict will have a negative effect on organizational commitment.

Hypothesis 7: Behavior-based conflict will have a negative effect on organizational commitment.

Hypothesis 8: Family-on-work conflict will have a negative effect on organizational commitment.

Method

Participants

Data were collected from two prisons located in province of Guangdong in China. The first prison employed 280 staff members and housed approximately 1500 inmates. The second prison employed 160 staff and housed approximately 700 inmates. Each prison contained inmates classified into different levels of custody (i.e. highly intensive/maximum custody, intensive/medium custody and general/minimum custody). For both Chinese prisons, the staff worked in different sections of the facility as teams, and weekly team meetings were held. The surveys were distributed during the team meetings. The back method of translation was used, wherein survey materials (cover letter and survey) were translated into Chinese by one bilingual author, and a second bilingual author translated the materials back into English to determine whether there were any translation problems. A third bilingual scholar who was not an author checked both translated surveys for issues. Further, the survey was pilot tested to determine whether there were issues of understanding, and none were found. Staff were informed of the purpose of the study, that participation was voluntary, that any question could be skipped, that answering the survey could be ended at any time, that there were no rewards or punishments for participation and that all responses would be anonymous.

For the first prison, 205 of 280 surveys were returned, which was a response rate of approximately 73%. For this prison, about 67% of respondents were male, and 33% had a bachelor's degree or higher. The typical respondent had worked in his or her current position for 6.5 years and was 45 years old. In terms of rank, 7% were a staff member (i.e. similar to a new/probationary person in a U.S. prison), 47% were a senior staff member (i.e. similar to a non-probationary person in a U.S. prison), 42% were a principal staff member (i.e. similar to a senior person in a U.S. prison), and the remaining 4% held supervisory or other ranks. For the second prison, 117 of 160 surveys were returned, which is a response rate of about 73%. For this prison, 10% were men, and 43% had a bachelor's degree or higher. The typical respondent had worked in his or her current position for 6.6 years and was 45 years old. In terms of rank, 13% were a staff member, 44% were a senior staff member, 41% were a principal staff member, and the remaining 3% held supervisory or other ranks.

For the combined completed surveys, the overall response rate was 73%, about 46% were men, and 37% had a bachelor's degree or higher. The typical respondent had worked 6.6 years in his or her current position and was 44 years old. In terms of these personal characteristics, the only significant difference between the respondents of the first and second prisons was gender ($\chi^2 = 103.58$, $p \leq .01$), which was expected because the majority of staff at the second prison were women. As such, a dichotomous variable representing the prison where the participant worked was included to control for any differences between the two prisons in the multivariate analysis (i.e. so the effects of a variable will be independent of the shared variance of the other variables). About 64% of those who responded were from the first prison, and 34% were from the second prison, which was expected since 63% of the 440 surveyed staff worked at the first prison. According to human resource sources, the responding staff at each prison appeared to be representative to the overall staff population at each prison based on gender, age, tenure and educational level.

Variables

Individual items for the indexed variables are listed in the Appendix, along with the response options for the items used to measure latent concepts.

Dependent variables

The two dependent variables in the current study were the work attitudes of job satisfaction and organizational commitment, and both variables were additive indexes. Job satisfaction was measured using three items from Brayfield and Rothe (1951). The items had a Cronbach's alpha value of .92. The affective dimension of organizational commitment was measured by five items from Mowday et al. (1982) and had a Cronbach's alpha of .85.

Independent variables

The independent variables of focus were the different types of work–family conflict. The work–family conflict items were based on the work of Bohen and Viveros-Long (1981) and Higgins and Duxbury (1992). The Cronbach's alpha values for time-based conflict, strain-based conflict, behavior-based conflict and family-on-work conflict were .88, .93, .88 and .93, respectively. The responses for each particular type of work–family conflict were summed together to form an additive index.

Finally, past studies have included measures for personal characteristics, such as age, tenure, gender, educational level, marital status, having a child/children under 16 living at home and prison of employment. These variables were included in the study more as control than explanatory variables. Age and tenure with the correctional agency were measured in years as continuous variables. Gender was a dichotomous variable representing whether the participant was a women (coded 0) or a man (coded 1). Educational level represented whether the participant had earned a bachelor's degree (coded 1) or not (coded 0). Marital status was coded as married as = 1 and currently not married as = 0. Having a child/children under 16 living at home was coded as 1 = yes and 0 = no. Finally, a dichotomous variable representing which prison the participant worked at was included (first prison coded as 1 and second prison coded as 0).

Results

Approximately 70% of the prison staff from the two prisons completed and returned the survey (i.e. 322 usable surveys were returned). The median age of participants was 45 years, ranging from 24 to 58 years of age, and the median tenure with the agency was 20 years, ranging from 1 to 40 years. Approximately 46% of the participants were men, and 54% were women. In terms of highest educational level, 63% of the participants reported having less than a college bachelor's degree, and 37% indicated that they had earned a bachelor's or higher degree. About 88% marked that they were currently married, and 42% indicated that they had one or more children aged 16 or younger living at home at the time of the survey. According to the Human Resources offices at each prison, the participants appeared similar in terms of gender, educational level, age and tenure compared to the overall prison staff population; about 48% of the overall prison staff were male, and 40% had a bachelor's degree. Neither Human Resources office could provide information on marital status or percentage of employees with a child under 16 living at home for the overall prison staff population.

The descriptive statistics and coding for the variables used in the study are reported in Table 1. There appeared to be significant variation in the dependent and independent variables (i.e. none were constants). Statistical tests indicated that the variables were normally distributed. Using SPSS, the skewness values for age, tenure and the latent index variables (e.g. job satisfaction) ranged from −0.58 to 0.32, and the kurtosis values for these variables ranged from −0.74 to 0.32, which are within

Table 1. Descriptive statistics.

Variable	Description	Min	Max	*Mdn*	*M*	*SD*
Age	Age in continuous years	24	58	45	43.94	6.82
Tenure	Tenure with agency in years	1	40	20	19.81	8.08
Gender	54% female (coded 0) 46% male (coded 1)	0	1	0	.46	.50
Educational level	63% less than Bachelor (coded 0) 37% Bachelor or higher (coded 1)	0	1	0	.37	.48
Marital status	12% not married (coded 0) 88% currently married (coded 1)	0	1	1	.88	.33
Child under 16 at home	58% no child (coded 0) 42% child/children (coded 1)	0	1	0	.42	.49
Prison	64% from Prison 1 (coded 1) 36% from Prison 2 (coded 0)	0	1	1	.64	.48
WFC time	3-item index, $\alpha = .88$ [.91, .94, .84]	3	18	12	11.93	3.68
WFC strain	4-item index, $\alpha = .93$ [.92, .93, .94, .86]	4	24	16	15.14	4.85
WFC behavior	3-item index, $\alpha = .88$ [.89, .88, .66]	4	18	12	11.45	3.41
WFC family	4-item index, $\alpha = .93$ [.72, .88, .87, .87]	4	24	12	12.99	4.69
Job satisfaction	3-item index, $\alpha = .92$ [.88, .90, .82]	3	18	11	10.75	3.59
Org commitment	5-item index, $\alpha = .85$ [.70, .73, .54, .76, .77]	5	30	18	18.13	5.07

Note: WFC = work–family conflict; org = organizational; α = Cronbach's alpha value. The total number of participants was 322. The factor loadings for the index variables are presented in brackets.

acceptable ranges and are within the ±3 rule of thumb (George & Mallery, 2010). Likewise, the median and mean values for the variables are similar to one another, also suggesting a normal distribution. For the index variables, the Cronbach alpha values were .85 or higher, and .70 is viewed as good (Nunnally & Bernstein, 1994). The items for each latent index variable were entered into a factor analysis, and the items loaded on a single factor, indicating unidimensionality of the items (Gorsuch, 1983). In addition, the factor loading scores for each index are presented in Table 1.

The correlations for the study variables are presented in Table 2. Gender and the four types of work–family conflict all had statistically significant correlations with job satisfaction. Men generally reported lower satisfaction with the job than women. The four types of work–family conflict all had negative correlations, which means that increases in time-based conflict, strain-based conflict, behavior-based conflict and/or family-on-work conflict were associated with reductions in reported job satisfaction. Age, tenure, educational level, marital status, having a child under 16 at home and prison of employment all had nonsignificant correlations with the job satisfaction variable. Age, tenure, gender, time-based conflict, strain-based conflict, behavior-based conflict and family-on-work conflict each had a significant correlation with organizational commitment. Increases in age

Table 2. Correlation matrix of study variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	1.00											
2. Tenure	.65**	1.00										
3. Gender	.12*	.02	1.00									
4. Educ lev	−.35**	−.34**	−.12*	1.00								
5. Marital st	.24**	.19**	.18**	−.12*	1.00							
6. Child	−.62**	−.36**	.09	.14*	−.02	1.00						
7. Prison	.18**	.03	.57**	−.10	.05	.07	1.00					
8. Time	−.09	−.40	.24**	.04	.03	−.04	.02	1.00				
9. Strain	.01	.09	.18**	−.04	.07	−.09	−.03	.71**	1.00			
10. Behavior	−.02	.05	.19**	−.07	.03	−.02	.01	.65**	.69**	1.00		
11. Family	−.01	.02	.17**	−.02	−.01	−.06	.12**	.38**	−.50**	.56**	1.00	
12. Job sat	.11	.10	−.16**	−.01	−.06	−.04	−.05	−.45**	−.46**	−.48**	−.36**	1.00
13. Org com	.12*	.12*	−.12*	−.02	−.03	−.03	−.08	−.37**	−.44**	−.44**	−.34**	.72**

Note: Educ lev = educational level; marital st=marital status; child=having one or more child under 16 years of age living at home; time = work–family conflict, time-based; strain = work–family conflict, strain-based; behavior=work–family conflict, behavior-based; family=work–family conflict, family-based; job sat = job satisfaction; org com = organizational commitment. See Table 1 for the coding and descriptive statistics of the variables.
*$p \leq .05$. **$p \leq .01$.

and tenure were associated with greater commitment. In general, female staff reported a greater affective bond with the organization than their male counterparts. All four work–family conflict variables had negative associations with this dependent variable. Finally, educational level, marital status, having a child at home and prison of employment each had a nonsignificant correlation with commitment.

Two ordinary least squares (OLS) regression equations were estimated, one with job satisfaction as the dependent variable and the other with organizational commitment as the dependent variable. For both equations, the independent variables were age, tenure, gender, educational level, marital status, having a child under 16 at home, the prison where the participant worked, time-based conflict, strain-based conflict, behavior-based conflict and family-on-work conflict. Listwise deletion was used for missing cases. The results are reported in Table 3. Multicollinearity (i.e. when two or more variables share too large an overlap in variance) is seen as a problem when variance inflation factor (VIF) scores exceed 6 (Tabachnick & Fidell, 2013). Based on the VIF scores reported in Table 3, multicollinearity was not a problem. In addition, the issues of outliers, influential cases, normality, linearity and homoscedasticity of residuals, and independence of errors in the regression analysis were tested and were not a problem (Tabachnick & Fidell, 2013).

The statistic R^2 (also known as coefficient of determination or the coefficient of multiple determination for multiple regression) indicates the percentage of the variance in the dependent variable that the independent variables collectively explain once their shared effects are held constant, and this statistic ranges from 0 to 1, calculated as the amount of explained variation in the proposed regression model divided by the total actual variation observed in the dependent variable (Berry, 1993). The R^2 value for the OLS regression equation for job satisfaction was .32. Tenure

Table 3. Ordinary least squares regression results with job satisfaction and organizational commitment as the dependent variables.

	Job satisfaction			Organizational commitment		
Variables	*B*	*β*	VIF	*B*	*β*	VIF
Age	0.04	.06	2.28	0.10	.12	2.28
Tenure	0.06	.13*	1.45	0.08	.12	1.45
Gender	−0.07	−.01	1.69	0.54	.05	1.69
Educational level	0.15	.20	1.12	0.10	.01	1.12
Marital status	−0.64	−.04	1.05	−0.81	−.04	1.05
Child under 16 at home	0.07	.01	1.85	0.69	.07	1.85
Prison	−0.20	−.03	1.61	−1.31	−.12*	1.61
WFC time-based	−0.11	−.11	3.35	−0.08	−.06	3.35
WFC strain-based	−0.12	−.16*	4.43	−0.12	−.12*	4.43
WFC behavior-based	−0.24	−.23**	3.08	−0.42	−.28**	3.08
WFC family-based	−0.10	−.12*	1.52	−0.12	−.11	1.52
F value (*df*)	11.61** (11,277)			9.71** (11,277)		
R^2	.32			.28		

Note: *B* = unstandardized regression slope; *β* = standardized regression slope; VIF = variance inflation factor score (a measure for multicollinearity); WFC = work–family conflict; *df* = degrees of freedom. For missing cases, listwise deletion was used. The number of cases for the job satisfaction regression equation was 298, and the number of cases for the organizational commitment regression equation was 288. See Table 1 for the coding and descriptive statistics of the variables.
*$p \leq .05$. **$p \leq .01$.

was the only personal characteristic to have a significant effect. Increases in tenure with the correctional agency were associated with greater satisfaction from the job. Consistent with Hypotheses 2, 3 and 4, strain-based conflict, behavior-based conflict and family-based conflict each had significant negative effects, which means that increases in any of these variables were associated with a reduction in job satisfaction. Contrary to Hypothesis 1, time-based conflict did not have significant effects on the job satisfaction index.

The R^2 statistic for the organizational commitment multivariate OLS regression was .28. The variable representing the prison had a significant association. Staff at the first prison tended to have a lower level of commitment than staff at the second prison. Consistent with Hypotheses 6 and 7, strain-based and behavior-based conflict each had significant negative effects, which means that increases in either were associated with a reduction in psychological commitment with the correctional organization. Contrary to Hypotheses 5 and 8, neither time-based conflict nor family-on-work conflict had significant effects. Finally, age, tenure, educational level, marital status and having a child under 16 at home all had nonsignificant effects on organizational commitment.

Discussion

Overall, the current results provide support for the contention that work–family conflict is a stressor that has negative effects on the job satisfaction and organizational commitment of correctional staff. The overall finding that work–family conflict has negative effects among Chinese staff is consistent with findings among United States correctional staff. The effects of the specific types of work–family conflict did vary in the current study, which is also consistent of what has been found in past United States studies. Five of the eight hypotheses (specifically Hypotheses 2, 3, 4, 6 and 7) were supported by the multivariate regression analyses. Specifically, three of the four job satisfaction hypotheses were supported, while two of the four organizational commitment hypotheses were supported. Work–family conflict may have a slightly greater effect on one work attitude than the other because of what each represents. Job satisfaction represents the degree that a staff member likes his or her job, and commitment represents the affective bond to the organization. Work–family conflict, when viewed as a stressor, could detract from the overall satisfaction gained from the job. Conversely, the worker may not attribute much blame for this stress to the organization and, as such, continues to accept the goals of the organization and put forth effort.

Three of the four types of work–family conflict had significant negative effects on job satisfaction among the surveyed Chinese prison staff. As hypothesized, strain-based, behavior-based and family-based conflict reduced satisfaction. Being upset at home from work experiences and having poorer interactions with family and friends not only is a negative experience, but appears to detract from the pleasure gained from the job. Strain-based conflict is not a pleasant experience, so it is not surprising that it detracts from overall satisfaction from the job. Similarly, work and home roles that encroach on one another are linked to reduced satisfaction. Staff may blame their job for this form of conflict. Family harmony is important in China, and both strain-based and behavior-based conflict interfere with harmony at home. Family-on-work conflict also appears to reduce satisfaction. Being distracted at work likely reduces the level of productivity and interactions with others, in the end reducing job satisfaction.

Except for time-based conflict, our findings are consistent with findings among United States correctional staff. As previous noted, time-based, strain-based, behavior-based and family-on-work conflict have negative effects on job satisfaction among United States correctional staff (Armstrong et al.,

2015; Lambert et al., 2002, 2006). In the current study, time-based conflict had statistically significant negative effects on job satisfaction in the bivariate but not the multivariate results. The effects of time-based conflict could vary across different correctional organizations. It is important to note that not all United States correctional staff studies have found that time-based conflict impacts job satisfaction when other types of work–family conflict are included. For example, Armstrong et al. (2015) found strain-, behavior- and family-based conflict were significantly related to both job stress and job satisfaction, and time-based conflict had no significant effects on either job stress or job satisfaction. While found not to have direct effects, time-based conflict may have indirect effects. It is also possible that time-based conflict affects strain-based conflict, and, in turn, strain-based conflict reduced the level of satisfaction. There is a significant bivariate correlation between these two variables of .71, $p \leq .001$ (see Table 2). As noted by Liu et al. (2017), being kept away from family and friends and important home events may result in strain for the staff member. The association between time-based and strain-based conflict needs to be studied using a longitudinal design.

As hypothesized, strain-based and behavior-based conflicts had negative effects on affective commitment in the regression analysis. These findings are not surprising because strain-based and behavior-based conflicts are negative and unpleasant feelings. It is likely the organization is being held responsible for these two forms of domain conflict. It is hard to form an affective bond with an employing organization if you are experiencing strain-based and behavior-based conflict. The finding that these two forms of work–family conflict reduced commitment among Chinese correctional staff is consistent what was found among U.S. staff. The negative effects that strain-based and behavior-based conflict have on affective commitment appear to cut across nations, at least the United States and China. Additional research on the effects of these stressors is needed in other nations to determine whether they are universal.

Contrary to our hypotheses, neither time-based nor family-on-work conflict had significant effects on organizational commitment (i.e. Hypotheses 5 and 8 were not supported). These findings differ from what is typically found for United States correctional staff. It is possible that the effects of time-based conflict vary across countries. Only two published studies could be found that examined the effects of time-based conflict on commitment, and both focused on Midwestern United States prison staff (Lambert et al., 2006, 2014). The issue of time appears to be less of an issue for Chinese prison staff than it is for United States staff. As was the case with job satisfaction, time-based conflict may have indirect effects on commitment through strain-based conflict. As previously noted, time-based conflict has a significant positive correlation with the strain type of work–family conflict. Upon further reflection, it makes sense that family-based conflict would not have a significant negative relationship with commitment. This type of work–family conflict represents family issues and problems resulting in conflict at work. While this is likely to cause problems at work, which could (and did) impact job satisfaction, these problems are less likely to be the result of something the organization did wrong. As noted earlier, affective commitment generally results because of positive things done by the organization, such as being fair with staff, allowing for input into decision-making, job variety and clear communication. Our results confirm this. While this type of work–family conflict reduced job satisfaction, the organization was not blamed because family-based conflict had a nonsignificant effect on affective commitment in the regression model. While the current finding is contrary to the Lambert et al. (2006) study that reported that family-on-work conflict affected commitment among United States correctional staff, Lambert et al. (2014) reported no significant association

between this type of work–family conflict and United States private prison staff commitment. There has been so little research on the types of work–family conflict and commitment that a firm conclusion cannot be drawn at this time. Additional research on the effects of time-based, strain-based, behavior-based and family-based conflict on affective commitment across a wide array of correctional institutions in various nation is required.

Of the personal characteristics, only two had significant effects in the two regression analyses. Tenure had a positive effect on satisfaction. Those with a longer time have decided to stay with the organization and probably have found a job they like. The variable representing the prison of employment had a significant negative effect on organizational commitment. Specifically, staff at the second prison reported greater commitment than their colleagues at the first prison. The second prison appears to operate in a different manner that results in a stronger bond between the staff and the organization in general than in the first prison. The reason for the stronger level of commitment among staff at the second prison than among staff at the first prison is not entirely clear, and additional investigation is needed on why the prison variable was a significant predictor to determine what is being done differently so changes can be made to enhance commitment. The finding that personal characteristics as a group were not significant predictors is consistent with research on United States correctional staff. Moreover, this is good news for correctional administrators. It is neither possible nor ethical to change personal characteristics, such as age or gender, or to increase job satisfaction and/or affective commitment of staff. Our findings indicate that correctional administrators need to be aware of work–family conflict and undertake efforts to reduce it for their staff.

Based on the current findings among Chinese staff and past findings among Western staff, there are implications. The issue of work–family conflict and its negative effects need to be addressed in corrections in both Chinese and Western correctional institutions. Efforts need to be undertaken to reduce the occurrence of work–family conflict, particularly in terms of strain-based, behavior-based and family-based conflict. Those newly employed need to be made aware that work–family conflict may arise. It is important to investigate how strain-based conflict develops among correctional staff in order to reduce its occurrence. Further, workshops should be provided so staff are aware of strain-based conflict and how to deal with it in positive manner, such as providing information on positive and effective coping strategies and providing workplace support groups. Likewise, training should be offered to staff on the issue of behavior-based conflict and how to best deal with work roles and home roles conflicting with one another. Mental health specialists at the prison need to provide interventions to help staff deal with strain-based, behavior-based and family-based conflict. Employee assistance programs can help staff deal with these forms of domain conflict. In addition, intervention and support services need to be offered to help staff deal with family and home problems. Supervisors need to be trained to identify the different forms of work–family conflict among staff and how to encourage staff to use the support services offered by the correctional organization. Researchers need to study which interventions and programs work the best for the different forms of domain conflict. In addition, new approaches are needed. Not all possible interventions have been used and tested in the field of institutional corrections. New interventions need to be developed and studied. Regardless of the nation, doing nothing will not solve the issue of work–family conflict and the negative effects its different forms have on satisfaction and commitment of staff.

Although single studies are rarely definitive, the current study helps fill a knowledge gap in the empirical literature. Nonetheless, the current study had limitations, and there is a

need for additional research in the area. This is not to imply that work–family conflict among correctional staff should be ignored. As found in past studies and the current study, work–family conflict in terms of strain-based, behavior-based, and family-based conflict reduced staff satisfaction and commitment. The current study focused on staff at Chinese prisons, and past studies focused on staff in Western prisons. Future research needs to examine how different forms of work–family affect the job satisfaction and organizational commitment of correctional staff in other nations. The current study and the past United States research suggest overall that the effects of strain-based, behavior-based and family-based domain conflict may be universal, while time-based conflict is not. What is not clear is whether the results would differ by cultures yet to be studied. While based on past research and a theoretical foundation, a cross-sectional design was used. Longitudinal studies are needed in order to empirically demonstrate the causal effects of different forms of work–family conflict on correctional staff job satisfaction and organizational commitment. Moreover, research is needed to identify potential causes for work–family conflict so effective interventions can be instituted to reduce the conflict spillover. In addition, research is needed to examine the utility of these possible interventions to either reduce work–family conflict or show how to deal with work–family conflict effectively and positively. Finally, future research is needed to examine the effects on other salient outcomes among correctional staff, such as job involvement, job burnout, turnover, absenteeism, work performance, organizational citizenship behaviors and life satisfaction.

Conclusion

In closing, correctional staff are an important resource for correctional facilities, including those in China. Work and home are two important domains for staff. While ideally there is balance between these domains, this is not the case for all staff. For some, there is spillover between the domains, resulting in work–family conflict. The current study examined the effects of time-based, strain-based, behavior-based and family-based conflict on the work attitudes of job satisfaction and affective organizational commitment among staff at two prisons in the Guangdong province of China. Of the four types of work–family conflict, strain-based, behavior-based and family-on-work conflict were found to reduce job satisfaction in a multivariate regression analysis. For commitment, strain-based and behavior-based conflict were observed to have negative effects in a multivariate regression equation. The results indicated that correctional administrators need to be aware of the issue of work–family conflict and examine possible ways to reduce it. While this study found interesting and needed information to help administrators and scholars, there is a need for more studies on work–family conflict for correctional staff, not only in China, but across the world in nations other than the United States. At the very least, we hope the current study will spur more interest and research on the subject of work–family conflict among correctional staff. With research, work–family conflict can be effectively combatted.

Ethical standards

Declaration of conflicts of interest

Eric G. Lambert has declared no conflicts of interest

Jianhong Liu has declared no conflicts of interest

Shanhe Jiang has declared no conflicts of interest

Thomas M. Kelley has declared no conflicts of interest

Jinwu Zhang has declared no conflicts of interest

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all participating prison staff.

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Appendix

Items for the indexed variables and response options

The response options for the items was a six-point Likert scale of strongly disagree (coded 1), disagree (coded 2), somewhat disagree (coded 3), somewhat agree (coded 4), agree (coded 5) and strongly agree (coded 6).

Job satisfaction: (1) Most days I am happy about my job; (2) I find real satisfaction in my job; and (3) I feel satisfied with my job.

Organizational commitment: (1) I am proud to tell people that I work for the (name of the prison system); (2) I find that my values and the (name of the prison system) values are very similar; (3) I really care about the fate of the (name of the prison system); (4) The (name of the prison system) really inspires the best in me in the way of job performance; and (5) I tell my friends that this is a great organization to work for.

Time-based conflict: (1) My job keeps me away from my home too much; (2) I often have to miss important family or social activities/events because of my job; and (3) The uncertainty of my work schedule interferes with my family and/or social life.

Strain-based conflict: (1) Due to all the work demands, sometimes when I come home, I am too stressed to do the things I enjoy; (2) Work makes me too tired or

irritable to fully enjoy my family social life; (3) When I get home from work, I am often too stressed to participate with family or friends; and (4) I find that I frequently bring home problems from work.

Behavior-based conflict: (1) The behaviors I use at work do not help me to be a better person at home; (2) The behaviors I learned at work do not help me to be a better parent, spouse, friend, and so forth; and (3) The behaviors that are effective at home do not seem to be effective at work.

Family-on-work conflict: (1) Because of family/social concerns, I sometimes have a hard time concentrating at work; (2) Due to stress at home, I am often preoccupied with family matters at work; (3) Tension from home often follows me to work; and (4) Due to the pressures at home, it is sometimes hard for me to do my job well.