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Effects of Interparental Conflict on Taiwanese Adolescents' Depression
and Externalizing Problem Behavior: A Longitudinal Study

Chih Han Hsieh

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

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July 2015

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ABSTRACT

Effects of Interparental Conflict on Taiwanese Adolescents' Depression and Externalizing Problem Behavior: A Longitudinal Study

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Master of Science

The link between interparental conflict and adolescents' maladjustment has been well established among European Americans; however, relatively few studies examine these relationships in Chinese societies. This study used longitudinal data from the Taiwan Youth Project (TYP), an on-going longitudinal panel research project focused on adolescent development, in order to examine the relationship between interparental conflict and depressive symptoms and externalizing problem behaviors of adolescents. In addition, this study examined parental warmth as a mediating variable for the relationship between interparental conflict and adolescents' maladjustment.

The results showed that interparental conflict predicted depressive symptoms among adolescents two years later. Mediation analysis indicated that parental warmth partially mediated the relationship between interparental conflict and depressive symptoms. However, findings indicated that there was no direct effect between interparental conflict and adolescent externalizing behaviors two years later; rather, the association was indirect through the mediating variable of overall parental warmth. Thus, overall parental warmth fully mediated the relationship between interparental conflict and subsequent externalizing behaviors. These results yield valuable information for clinical intervention and further research.

Keywords: interparental conflict, depressive symptoms, externalizing behavior problem, adolescents, spillover effect, maternal warmth, paternal warmth

ACKNOWLEDGEMENTS

I would like to express my utmost gratitude and admiration towards my chair, Dr. Rick Miller, who has invested greatly in my academic successes. I could not ask for a more supportive, validating, intellectual, resourceful and humorous chair and mentor. I would also like to extend my gratitude towards Dr. Chien Ti Lee, and Dr. Roy Bean, who have graciously served on my thesis committee, offering a wealth of expertise, and have constantly challenged me to perfect my work. I also owe special thanks to all the BYU Marriage and Family Therapy faculty members, who are devoted to cultivating a spiritually and intellectually rich ground for me to learn and grow. It is an understatement to say that these two years has been one of the most intellectually stimulating, emotionally challenging and rewarding periods of my life.

In addition, I offer my heartfelt gratitude to my family, Paul, Carol, Karim, Phoebe, and Bryce, for their tremendous support and faith in me. They have propelled me to pursue excellence. Last but not least, I am grateful for God for helping me uncover, and develop my talent in being a researcher and therapist to better serve others.

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Introduction

Among the many causes of maladjustment among children, evidence from Western literature has shown that adolescents exposed to interparental conflict display symptoms that include internalizing and externalizing behavior (Stutzman, Miller, Hollist, & Falceto, 2009), poorer academic achievement, and lower self-esteem (Doyle & Markiewicz, 2005). Multiple meta-analytic reviews (Buehler, Anthony, Krishnakumar, & Stone, 1997; Depner, Leino, & Chun, 1992; Reid & Crisafulli, 1990; Rhoades, 2008) have demonstrated that there is a significant relationship between interparental conflict and child maladjustment. For example, a meta-analysis of 68 studies yielded an effect size of .32 between interparental conflict and internalizing and externalizing problems in youth (Buehler et al., 1997). In addition to meta-analytic reviews, narrative reviews (Bradford et al., 2003; Grych & Fincham, 1990), as well as longitudinal studies (Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006; J. Jenkins, Simpson, Dunn, Rasbash, & O'Connor, 2005; Katz & Gottman, 1993; Richmond & Stocker, 2008), all consistently indicate that interparental conflict predicts the development of internalizing and externalizing symptoms among adolescents.

Research further identifies certain mediating factors that explain the relationship between interparental conflict and its effect on children (Cummings et al., 2006). Studies indicate that the relationship between interparental conflict and child behavior is mediated by parenting behaviors, such as diminished parental warmth, poor parental monitoring, increased verbal criticism by parents, and use of physical punishment by parents (Krishnakumar & Buehler, 2000).

The link between interparental conflict and adolescents' internalizing and externalizing behavior has been well established among the European Americans; however, there is a paucity

of research focused on Chinese populations (e.g., Mainland Chinese, Taiwanese, and Hong Kongese). With this population growing rapidly in the world, it is important to understand the dynamics of the Chinese family, including the relationship between interparental conflict and adolescents' outcomes. Studying this issue is also important given the relevance of the Chinese population in the world. Chinese people constitute one of the largest population on Earth, with a population of 1.39 billion (Central Intelligence Agency, 2014). In addition, there is no study to date examining how interparental conflict impacts adolescents' maladjustment in Taiwan. The most related study was conducted by Lee, Beckerts, Wu, & Kuan (2011), who examined the impact of interparental conflict on Taiwanese adolescents' academic achievement. Consequently, the purpose of the study was to examine the relationship between interparental conflict and outcomes of adolescents in Taiwan using longitudinal research data. In addition, further analysis examined paternal and maternal warmth as mediating variables for the relationship between interparental conflict and maladjustment among adolescents.

Literature Review

Chinese Marriages

In the early 1800s, Chinese nationals migrated to the island of Taiwan and brought Chinese traditional marriage values and family structures along with them. They practiced traditional Chinese marriage, as characterized by arranged marriages, hierarchy, and patriarchal households. Traditional marriages were not only the union of two individuals, but also two families (Huang, 2005). When marital conflict arose, extended family and communities often intervened with the hope to keep the couples together. Accordingly, the divorce rate in traditional Taiwan was as low as 0.77% in 1980, and 1.35% in 1990 (Ministry of Interior Taiwan, 2008).

Traditional Chinese marriages advocated the idea of multiple generations living under the same roof. This resulted in marital relationships being highly influenced by parents or in-laws as elderly family members exerted hierarchical and authoritative control over the couple's affairs. When wives encountered conflict with their father or mother-in-law, they were expected to remain docile and submissive (Huang, 2005). In regards to solving marital conflict, husbands demanded compliance from wives, leaving wives feeling suppressed. Even in situations where conflicts escalated into arguments, wives were expected to remain subservient, leading to wives' suffering and unfair treatment were generally turned inwards to the self (Shen, 2005). Although interpersonal harmony and marriage stability were achieved within this patriarchal family structure, many wives may have experienced suppression and resentment towards their husbands and in-laws. The phenomena of maintaining harmonious communications among Taiwanese couples reflects the Chinese cultural values of collectivism and centrality of family (Pfeifer et al., 2013).

Between the years of 1895 and 1945, Taiwan was colonized by the Japanese, who initiated substantial economic and social transformations that resulted in economic growth and the establishment of a modern educational system (Thornton, Chang, & Sun, 1984). After World War II, with the political separation from Mainland China, Taiwan entered into a new era as it developed a democratic and modernized political structure, with democratic campaigns and human rights movements (Thornton et al., 1984). Modernization, and urbanization, followed by multiple campaigns and human-right movement, has contributed to rapid change in Taiwan's society and family structure. The convergence of traditional Chinese marriage values and modernized values in Taiwan has contributed to unique marital dynamics in recent years.

There are three substantial shifts that changed the pure traditional Chinese marriage to a relatively more modernized Chinese marriage. First, with modernization, the spousal relationship that was traditionally secondary to the parent-child relationship has increased in importance (Shen, 2009). Second, a shift has occurred in the balance of power from husbands holding absolute power in the family to wives sharing equal decision-makings with the husbands. With the increased opportunity to receive education, Taiwanese women have become more educated and economically independent. As Taiwanese women have gained more power in the family, they no longer have to endure abrasive or abusive marriages, and they can resort to divorce (Yang & Yen, 2011). Third, in relation to the family structure, extended families have loosened control over couples' marriage. The nuclear family, as opposed to the extended family, has become the central family structure (Huang, 2005). However, although Taiwanese couples have moved towards egalitarian relationship, they have not completely relinquished traditional Chinese values. These three shifts in marriage dynamic have resulted in the inter-mingling of traditional Chinese marriage values and modernized values in Taiwan (Shen, 2009).

One of the disadvantages that has come with this rapid social change from pure traditional practices to more modernized practices is an increase in marital conflict and divorce. Although modern values and patterns of openness and more flexible gender roles have many benefits, they also may lead to increased relationship conflicts, fights, and dissolution (Huang, 2005). The historical record of divorce rate in Taiwan reflects the steady increase in marital dissolution as follows: 0.77% in 1980, 1.35% in 1990, 2.37% in 2000, and 2.55% in 2007 (Ministry of Interior Taiwan, 2008).

Interparental Conflict

Interparental conflict is a multidimensional construct that encompasses frequency of arguments, mode of expression, and intensity of conflicts (Krishnakumar & Buehler, 2000). Compared to U.S. couples, Taiwanese couples report less marital problems because they are likely to avoid negative self-disclosure or relationship issues that accentuate the difference between them in order to “save face” or protect the relationship (Zhang, Merolla, Sun, & Lin, 2012). Compared to U.S. couples, who commonly report finances and sexual issues as problem areas, Taiwanese couples more commonly report marital problems involves issues around raising children, couple communication, and relationships with parent or in-laws (Pfeifer, Miller, Li, & Hsiao, 2013).

Research suggests that interparental conflict has a stronger effect on youth development outcomes than other marital constructs, such as global marital satisfaction, marital distress, marital dissatisfaction, or marital apathy (Cummings & Davies, 1994; Jenkins & Smith, 1991). The literature indicates that overt interparental conflict style is the most common among different styles including covert, cooperative, avoidant and withdrawn. An overt conflict style is defined as direct manifestation of hostile behavior, which include belligerence, screaming, contempt, derision, insulting, slapping, threatening and hitting (Buehler, Krishnakumar, Christine, Sharon, & Gaye, 1994). Overt interparental conflict may directly lead to children’s maladjustment and indirectly lead to harsh parenting and is considered be more salient than any other type of conflicts (Fincham, Grych, & Osborne, 1994)

Depressive Symptoms Among Chinese Adolescents

The prevalence of depression among Taiwanese adolescents is between 12.3% and 13.4% (Huang & Guo, 2009; Huang-Chi et al., 2008). Depressive symptoms and Major Depressive

Disorder (MDD) in Taiwanese adolescents pose considerable health and societal concerns, including school refusal, low self-esteem, internet addiction, substance abuse, self-harm, and suicidal ideation (Chang, Chiu, Lee, Chen, & Miao, 2014; Chung et al., 2014; Huang & Guo, 2009; Tsai et al., 2011).

Studies indicate that stressors, such as family relationships, have a pronounced effect in adolescents' depressive symptom in collectivistic cultures, such as Chinese societies (Chen, Rubin, & Li, 1995; Greenberger, Chen, Tally, & Dong, 2000). An adolescent's perception of a lack of parental understanding, high family conflict, and poor family cohesion are predictive of depressive symptoms in collectivistic cultures (Lin et al., 2008). Taiwanese adolescents who experience a lack of parental warmth display more depressive symptoms than their counterparts (Lin, Ronald, Meshack, Kao, & Chang, 2013)

Externalizing Disorders Among Chinese Adolescents

Externalizing behaviors are symptoms directed towards others or objects outside the self (e.g., aggression, bullying, delinquency, running away from home, and substance abuse) (Buehler, Krishnakumar, & Stone, 1998). Research among Taiwanese adolescents indicates that the lack of parental caring, family conflict, and an insecure attachment with their parents contribute to adolescents' increased risk of engaging in aggressive bullying (Wang et al., 2012). Additionally, Taiwanese children with weak parent-child attachment are at risk for peer group delinquent conduct (Wang et al., 2012). For example, having an unsatisfactory family life is one of the most prominent reasons why Taiwanese adolescents run away from home (Wang, Chen, Lew-Ting, Chen, & Chen, 2010). Moreover, adolescents who run away from home have a higher risk of using tobacco and illegal drugs (Wang et al., 2010). These studies suggest that a strong parent-child bond, such as having mutual understanding and open communication, are strong

protective factors to prevent adolescents from engaging in delinquent behaviors (Chui & Chan, 2012).

Paternal and Maternal Warmth

A family system is an amalgamation of multiple subsystems, including the parental subsystem, parent-child subsystem, and sibling subsystem, all of which are intricately interrelated with each other and with the whole (Nichols, 2013). When a specific subsystem is malfunctioning, it has the propensity to spill over to and negatively impacted other subsystems and the whole (Lindahl, Malik, Kaczynski, & Simons, 2004). For example, when the parental subsystem is malfunctioning as a result of interparental conflict, it often carries over to the parent-child subsystem, as manifested by diminished warmth in parents, poor parental monitoring, and increased parent-child verbal criticism (Conger & Ge, 1994). The subsequent decreased functionality of the parent-child subsystem puts children and adolescents at increased risk for depressive symptoms or externalizing behavior problems. On the other hand, couples in a healthy relationship generate positive affect that enables parents to increase responsiveness to, engagement with, and accessibility for their children. This spillover effect explains how marital dynamics may transfer over into affecting the parenting behaviors. Theoretically, parent-child interactions mirror parental interactions (Grych & Fincham, 1990). Thus, interparental conflict may result in decreased parental functioning, such as giving little praise, using punitive commands, making inconsistent demands, having poor parental monitoring to their children and exhibiting lesser parental warmth (Krishnakumar & Buehler, 2000).

The link between parental warmth and depression among adolescents is well established. The lack of parental warmth is a risk factor for developing depressive symptoms among adolescents (McLeod, Weisz, & Wood, 2007; Yap, Pilkington, Ryan, & Jorm, 2014). Likewise, a

meta-analysis indicated meta-analysis study showed that children's perceptions of parental and maternal warmth is significantly related to their psychological adjustment with the effect size of .31 and .34 respectively (Khaleque, 2013). A study conducted in Mainland China with 2000 children found parental warmth to be a mediating factor between marital quality and children's externalizing behavior problems (Chen & Liu, 2012). In addition, there are some studies compared the effect of parental warmth to maternal warmth and found that although paternal warmth is equivalent to maternal warmth for the most part, it sometimes influences children's behavior more than maternal warmth (Rohner & Veneziano, 2001). Another study concluded that paternal warmth is a more significant predictor of youth's development, such as interpersonal aggression than is maternal warmth (Veneziano, 2003). In this study, we will test parental and maternal warmth separately as mediating variables between interparental conflict and adolescents' maladjustment.

Interparental Conflict and Maladjustment Among Chinese Adolescents

A limited number of studies have examined the relationship between marital functioning and Chinese adolescents. The majority of the studies have focused on the effect of marital conflict on the well-being of Chinese children, rather than the adolescents. For examples, these studies that assessed child outcomes found that interparental quality had an indirect effect on 7-year-old Hong Kongese children's externalizing problems behaviors mediated through harsh parenting. The children's problem behaviors included withdrawal, anxiety, social difficulty, hyperactivity, inattention problems, and physical complaints (Chang, Lansford, Schwartz, & Farver, 2004; Gao & Chen, 2008). Furthermore, a study conducted in Mainland China increased overt and covert interparental conflict styles, mediated by increased mediating parental coercive and psychological control, have a significant effect on children's overt and relational aggression

(Li, Putallaz, & Su, 2011). The findings also indicated that boys are susceptible to anger, aggression, and other externalizing behavior as they are triangulated into or exposed to interparental conflict (Li et al., 2011). Children in Mainland China who reported high level stress from witnessing parental conflict and attributing their parental conflict to themselves were at a higher risk for maladjustment (Xin, Chi, & Yu, 2009).

Three studies that have focused exclusively on adolescents' well-being in Mainland China found marital conflict is predictive of more externalizing and internalizing problems. First, a study that assessed 481 high school students' perception of interparental conflict, depression, and self-esteem (Chen, Zhou, & Wang, 2013) found that perceived interparental conflict was significantly associated with the students' lower self-esteem and higher depression level. Second, in a similar study, with a sample size of 1,027 adolescents in Mainland China, covert interparental conflict was associated with depression, with parental psychological control as a significant mediating variable (Bradford et al., 2003). Finally, a cross-sectional study conducted by the National Survey of Adolescent Mental Health in China (2008) surveyed 3,718 Chinese adolescent girls between the ages of 11 and 19 years old (Li, Guo, & Chen, 2012). The study found that parents' marital quality has an influence on their parenting styles and, in turn, contributes to externalizing problems among adolescent girls. Parenting behaviors, such as monitoring, harshness, and inductive reasons, were found to mediate the relationship between parents' marital conflict and externalizing problems among adolescent girls (Li et al., 2012).

Current Study

These findings have shed light on the association between interparental conflict and youth outcomes among the Chinese population; however, they have all used cross-sectional research designs. Because interparental conflict and adolescents' outcome are measured at the

same time, it is difficult to determine whether the adolescents' outcomes are a consequence of interparental conflict or adolescents' outcomes predict interparental conflict. Consequently, cross-sectional studies leave unanswered questions pertaining to the effects of the direction of parental conflict on children's behavior outcome.

Longitudinal studies can compensate for this limitation because it allows researchers to repeatedly assess the same participants over time. This enables researchers to assess the effect of marital conflict on subsequent adolescent well-being *over time*. Consequently, it enables researchers to determine if exposure to marital conflict has long-term consequences for children.

The purpose of the study was to examine the relationship between interparental conflict and depression and externalizing outcomes of adolescents in Taiwan using longitudinal data from the Taiwan Youth Project longitudinal research data. It was hypothesized that parents' perceptions of interparental conflict is positively related to depressive symptoms and externalizing behavior in Taiwanese adolescents. It was also hypothesized that paternal and maternal warmth were mediating factors between interparental conflict and maladjustment in adolescents. Figure 1 illustrates the model tested in this study.

Methods

Data from the Taiwan Youth Project (TYP) was used to address the research questions. The TYP is a longitudinal study of Taiwan's youth conducted by the Family and Life Course Research Group of the Institute of Sociology in Academia Sinica. TYP randomly selected 40 junior high schools (16 from Taipei City, 15 from Taipei County, and nine from Yi-Lan County). The study employed a multi-stage stratified cluster sampling method. Schools were randomly selected and in each of the schools, two classrooms were randomly chosen. All the students and their parents in the 80 classes were surveyed. Paper-and-pencil questionnaires were

administered to the participants annually. (Details about sampling methods can be found at the TYP website: www.typ.sinica.edu.tw/E/?q=node/15). The first wave of the study began in 2000 when participants were in their final year of junior high school, between the ages of 12 and 13 ($N = 2,890$). The last wave used in the current study began in 2004 when most participants were between the ages 19 and 20; each of them contributed up to five follow-ups. The sample for the present study consisted of 2,458 youth from TYP, who completed surveys on five separate occasions from 2000 to 2004. Only those who completed surveys at time 2 were included in the study resulting in a final sample size of 1,276.

Sample Characteristics

All of the participants included in the analysis were ethnic Chinese from Taiwan. The mean age of the adolescents at time 1 was 12.38 ($SD = .63$). Ages ranged from 10 to 15 years of age; 49.6% were female and 50.4% were male. As for family income, 88.3% made a monthly income between 0 and 100,000 Taiwanese dollars (NT), 10.1% made between 100,001 and 200,000 NT, 1.2% made between 200,001 and 300,000 NT, .3% made between 300,001 and 400,000 NT, 0% made between 400,001 and 500,000 NT, and .1% made between 500,001 and 600,000 NT.

Measures

Interparental conflict-maternal rating. This measure was adapted from a composite measure of spouses' interactions (Simons, Lornenz, Wu, and Conger, 1993). At wave 2, mothers reported nine questions regarding their overt conflict with spouse (e.g., criticism, condemning, yelling). A 7-point Likert scale ranged from 0 (*never*) to 6 (*always*). The Cronbach's Alpha coefficient for the 2nd wave interparental conflict was .98.

Paternal and maternal warmth. This adolescent self-report 21-item measure assessed child's perception of the parents' frequency of support, caring, understanding, validation, genuine listening, and helping the child accomplish important things. A 7-point Likert scale ranged from 1 (*never*) to 6 (*always*). Alpha coefficient for the 3rd wave paternal and maternal warmth was .89 and .90 respectively.

Depressive symptoms. This study translated and abridged Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983) to measure adolescents' depressive symptoms. Adolescents' self-reported six depressive symptoms, including sadness, headaches, loneliness, sleeping problems, constantly felt something stuck in the throat, and fatigue, were assessed at the 4th wave. The response options ranged from 0 (none) to 4 (yes, very seriously bothers me). Alpha coefficient for the 4th wave was .72.

Externalizing behavior. Adolescents' self-reported six externalizing behavior symptoms, including taking illegal drugs, stealing, using weapon to assault others, selling drugs, vandalizing, and skipping school, were assessed at the 4th wave. The response options ranged from 1 (*none*) to 5 (*yes, often*). Because the distribution of externalizing behavior is skewed, each of the six item responses was dichotomized into 0 (if the participant selected option 1 for the item) and 1 (if participant selected option 2- 5 for the item).

Control variables. Control variables included age, gender, family income (range 1 to 13, with a higher rank represents greater income), and parental education, which had a range 1 (*elementary school diploma*) to 7 (*post bachelor degree*).

Analysis

Structural equation modeling was used to test this longitudinal model with the statistical program, Mplus version 7.3 (Muthén, & Muthén, 1998-2012). Missing data across variables was handled using full information maximum likelihood (FIML) estimation implemented in the Mplus software. To test for indirect effects adjusting for standard errors, the bootstrapping method was used; this has been shown to provide more statistical power and more accurate confidence intervals than other methods for testing mediation (Pituch & Stapleton, 2008).

Results

Preliminary Descriptive Analyses

Table 1 provides the descriptive statistics of the studies variables. Table 2 shows the correlation coefficient for each variable. The correlation matrix demonstrated that interparental conflict was negatively correlated with parental warmth and support and positively associated with adolescent depressive symptoms and externalizing problem behaviors

Path Model Results

The goodness of fit analysis of the structural equation model indicated that the model fit the data well. The chi-square was 760.752, and the degrees of freedom were 256 ($p < .01$), which is an acceptable ratio ($\chi^2/df = 2.97$). The Tucker Lewis Index (TLI) and the Comparative Fit Index (CFI) were above the cutoff score of .95 with scores of .951 and .958, respectively. The Root Mean Square Error of Approximation (RMSEA) was below .05, with a score of .039. The Standardized Root Mean Square Residual (SRMR) was below the cut off of .08, with a score of .047 (Kline, 2001).

Results indicated that time 2 interparental conflict significantly predicted the outcome of adolescent depression at time 4 ($\beta = .10, p < .05$). Based on the standardized coefficient, this means for every one unit increase in interparental conflict, there was a .10 increase in depression for adolescents two years later. However, the path between interparental conflict and adolescent externalizing behaviors was not significant ($\beta = .05, p = .37$). See Table 3 and figure 2.

Results also indicated that time 2 interparental conflict predicted the time 3 parental warmth at time 3 for both mothers ($\beta = -.22, p < .01$) and fathers ($\beta = -.14, p < .01$). However, only one of the paths between parental warmth and adolescent outcomes were significant, with father parental warmth at time 3 significantly predictive of adolescent externalizing behaviors at time 4 ($\beta = -.16, p < .01$). Results held constant even when controlling for child age, child gender, parental education, and family income.

To test for mediation of parental warmth for mothers and fathers in the relationship between interparental conflict and adolescent externalizing behaviors and interparental conflict and adolescent depression, the significance of the indirect effect using bias-corrected bootstrap 95% confidence intervals with 2,000 bootstrap samples was tested (all of the coefficients presented are the standardized direct and indirect effects in the model). When estimating a specific effect, it is considered significant when the confidence interval does not include the value of zero (Ledermann, Macho, & Kenny, 2011; MacKinnon, 2008). The standardized indirect effects indicated that the latent variable of father parental warmth was a significant mediator in the relationship between interparental conflict and adolescent externalizing behaviors ($\beta = .024, p < .05$). These results indicated that father parental warmth at Time 3 fully mediated the relationship between interparental conflict at Time 2 and adolescent externalizing behaviors at Time 4.

An additional analysis was conducted that combined the effect of paternal warmth and maternal warmth to test the mediating effect of overall parental warmth. The results indicated that the sum of the indirect effects for interparental conflict to parental warmth to adolescent depression ($\beta = .024, p < .05$) was significant. Because the results indicated that the direct path between interparental conflict and adolescent depression was significant, this additional result indicates that overall parental warmth at time 3 partially mediated the relationship between interparental conflict at time 2 and adolescent depression at time 4.

Results of the analysis of overall parental warmth also indicated that sum of the indirect effects for interparental conflict to parental warmth to adolescent externalizing behaviors ($\beta = .036, p < .05$) was statistically significant. Because the results indicated that the path between interparental conflict and adolescent externalizing behaviors was not statistically significant, these additional results indicate that overall parental warmth fully mediated the relationship between interparental conflict at time 2 and adolescent externalizing behaviors at time 4. Finally, the model accounted for 4.7% of the variance in parental warmth for mothers, 2.1% of the variance in parental warmth for fathers, 2.7% of the variance in adolescent depression, and 4.6% of the variance in adolescent externalizing behaviors.

Discussion

The results partially support the hypothesis that interparental conflict is positively related to depressive symptoms among adolescents two years later. These findings are consistent with a number of prior cross-sectional studies conducted among Chinese adolescents (Bradford et al., 2003; Chen et al., 2013). However, findings indicate that there is no direct effect between interparental conflict and adolescent externalizing behaviors two years later. This finding is contrary to other studies that used cross-sectional designs conducted in China (Li et al., 2012).

The results of the mediation analysis provide evidence, though, that interparental conflict has a significant effect on subsequent adolescent externalizing behaviors through indirect paths of overall parental warmth. Thus, the findings indicate that interparental conflict, indeed, has a negative effect on adolescent externalizing behaviors, but the effect is an indirect pathway through overall parental warmth. This finding is consistent to a study in Hong Kong (Chang et al., 2004), which indicates that marital quality does not directly affect children's externalizing behavior but is mediated through parenting

In terms of adolescent depression as the outcome variable, the results also support the other hypothesis, which is that parental warmth mediates between interparental conflict and depression among adolescents. The findings indicate that an increase in interparental conflict leads to decrease in both paternal and maternal warmth for the adolescents, which subsequently lead to an increase in depressive symptoms for adolescents. This hypothesis is also supported by findings from the formal mediation analysis using bootstrapping that father warmth is a significant mediating variable between interparental conflict and adolescent externalizing behaviors. This finding is consistent with a cross-sectional study conducted in Mainland China (Chen & Liu, 2012). These researchers found that parental warmth mediates the relationship between marital quality and externalizing behaviors problems among children.

Thus, results of the study support a longitudinal association between interparental conflict and subsequent adolescent maladjustment in a Taiwanese sample. In addition to being consistent with previous cross-sectional research, these findings are also consistent with the spillover effect. When the parental subsystem is malfunctioning as a result of interparental conflict, it often carries over to the parent-child subsystem. Overt interparental conflict may result in decreased parental functioning, such as giving little praise, punitive commands, inconsistent demands, and

poor parental monitoring to their children (Conger & Ge, 1994). The subsequent decreased functionality of the parent-child subsystem puts children and adolescents at increased risk for depressive symptoms or externalizing behavior problems. This spillover effect explains how marital dynamics may transfer over into affecting the parenting behaviors. The spillover effect is supported by the findings in this study, as parental warmth was found to be a significant mediator in the relationship between interparental conflict and subsequent adolescent maladjustment.

Clinical Implications

There are several clinical implications for clinicians who work with Chinese clients. These results suggest that family therapists should assess for interparental conflict because of its detrimental effect on adolescents, in order to determine the appropriate focus of treatment. In other words, rather than assessing and treating the identified adolescent patient solely, clinicians should involve adolescent's parents in family therapy to better assess and determine where the presenting problems originate and exacerbate.

Based on the suggestion that Chinese clients prefer receiving education to therapy (Huang, 2005), clinicians may provide empirical research findings and teach the parents that interparental conflict is a risk factor for adolescents' depressive symptoms or externalizing problem behaviors. In a culture that emphasizes family harmony, interparental conflict may be particularly problematic because it not only break the social expectations but also induce fear in children regarding stability of their parents' marriage. Presenting empirical research and educating parents about the negative affect of interparental conflict helps them understand the importance of their participation in family therapy and increase therapeutic goal alliance.

Chinese clients may expect clinicians as “problem solvers”, who establish concrete goals and strategies and solve their presenting problems (McGoldrick, Giordano, & Garcia-Preto, 2005). In family session, clinician may employ concrete solutions that are closely related to treating their presenting problems. As parental warmth is shown to be a mediator between interparental conflict and adolescents’ maladjustment, therapists may help parents enhance warmth towards their children. Increased parental warmth may contribute to decreased internalizing problems among children in the long run (Zhou, Sandler, Millsap, Wolchik, & Dawson-McClure, 2008).

Limitations and Directions for Future Research

One limitation is that, although there are many similarities between Taiwanese, Traditional-Chinese and Chinese-American families, there may be some variations in familial dynamics across these cultures. Therefore, it is important to not apply the results indiscriminately to all cultural groups, but to carefully apply them in their corresponding cultural contexts.

The other limitation is related to the fact that mothers of adolescents completed the majority of parent questionnaires, rather than fathers and mothers separately. Traditionally, mothers are more involved in children’s development and are more likely to discern whether or not their children are struggling with depressive symptoms or externalizing problem behaviors. While mothers remain highly invested in children’s development, recent studies have encouraged father’s involvement in children as well. Studies indicate that fathers’ involvement contribute to better psychosocial adjustment, fewer adjustment difficulties, and increased social responsibility in children (Wilson & Prior, 2011). In addition, father’s involvement will foster stronger adolescent-father relationships (Wilson & Prior, 2011), which will serve as a buffer to

maladjustment in adolescence. In the future, it would be beneficial to assess fathers' perception of interparental conflict and their involvement in the children.

Despite the limitations, this longitudinal study compensates for the shortcomings of cross-sectional study as it enables researchers to establish longitudinal relationships between parents and children and infer causality. This is the first longitudinal study in Taiwan that measures the impact of interparental conflict on adolescents' outcome and substantiates that parental warmth and support explains adolescents' maladjustment. Longitudinal research linking the association between interparental conflict and adolescents' maladjustment in European American population can now be extended in its application with Chinese populations. This study consolidates the understanding on the impact of interparental conflict on adolescents' outcome in the Taiwan culture.

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Appendices

Table 1

Descriptive Statistics of Studied Variables

Studied Variables	Mean	<i>SD</i>
T2 Interparental conflict	6.32	7.94
T3 Parental warmth	223.46	33.92
T4 Adolescent depressive symptoms	1.44	1.97
T4 Adolescent externalizing behaviors	0.26	0.59

Table 2

Correlation Matrices of Studied Variables

	1	2	3	4
1. T2 Interparental conflict				
2. T3 Parental warmth	-0.15**			
3. T4 Adolescent depressive symptoms	0.09**	-0.13**		
4. T4 Adolescent externalizing behaviors	0.05	-0.11**	0.13**	

Note. **. Correlation is significant at the 0.01 level (2-tailed).

Table 3

Regression Weights for Full Model

	Standard	S.E.	<i>p</i>
Interparental Conflict → Adolescent Depression	.10	.05	.03
Interparental Conflict → Adolescent Externalizing	.05	.06	.37
Interparental Conflict → Mother Warmth	-.21	.04	.00
Interparental Conflict → Father Warmth	-.14	.05	.00
Mother Warmth → Adolescent Depression	-.09	.05	.07
Father Warmth → Adolescent Depression	-.04	.05	.45
Mother Warmth → Adolescent Externalizing	-.06	.06	.34
Father Warmth → Adolescent Externalizing	-.16	.06	.01

Fit: $\chi^2 = 760.752$ ($df = 256$), $p < .01$ ($\Delta\chi^2/df = 2.97$); RMSEA = .039; CFI = .958; TLI = .951; SRMR = .047

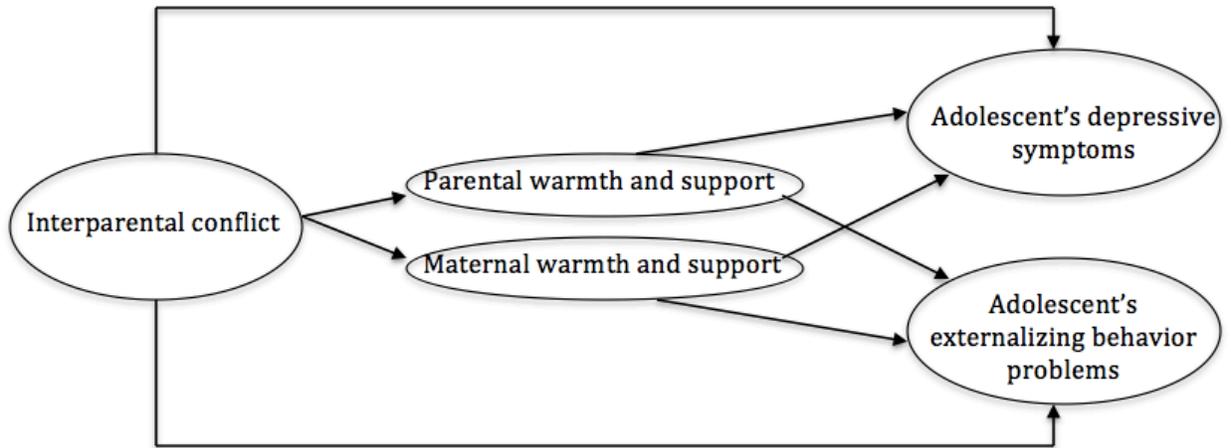


Figure 1. Hypothetical Casual Relationship in Present Study

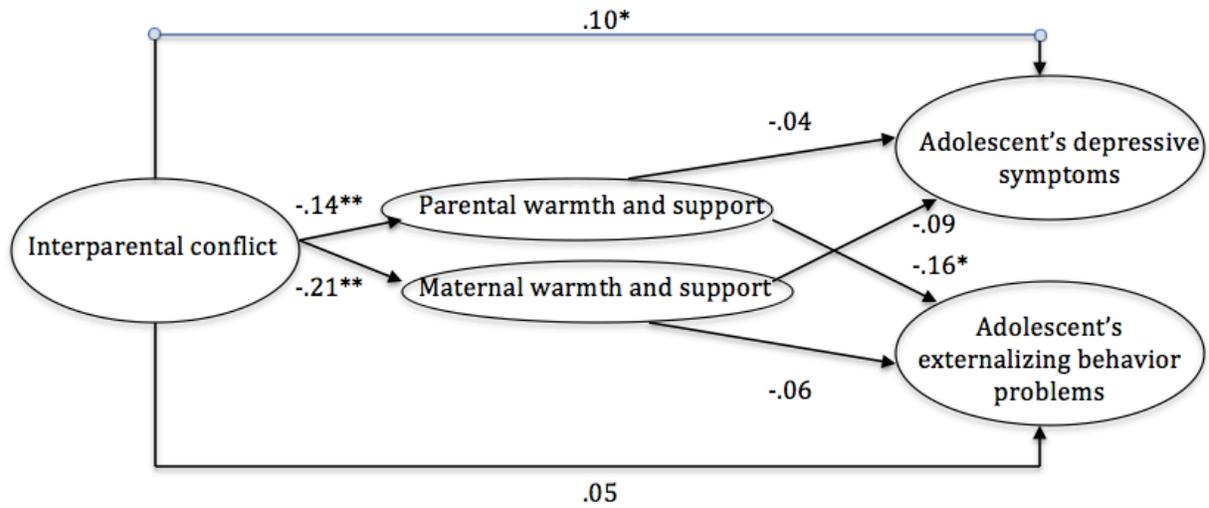


Figure 2. Partial Mediation Model: Paternal and Maternal Warmth as a Mediator of the Impact of Interparental Conflict on Adolescent's Depressive Symptoms and Externalizing Behavior Problems

Note. $*p < .05$, $**p < .001$