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Access details: Access Details: [subscription number 924699534]

Publisher Psychology Press

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Psychology

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713659663>

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First published on: 04 August 2009

To cite this Article Yeh, Kuang-Hui, Tsao, Wei-Chun and Chen, Wei-Wen(2010) 'Parent-child conflict and psychological maladjustment: A mediational analysis with reciprocal filial belief and perceived threat', International Journal of Psychology, 45: 2, 131 — 139, First published on: 04 August 2009 (iFirst)

To link to this Article: DOI: 10.1080/00207590903085505

URL: <http://dx.doi.org/10.1080/00207590903085505>

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Parent–child conflict and psychological maladjustment: A mediational analysis with reciprocal filial belief and perceived threat

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Empirical research has shown that parent–child conflict is positively related to poor adjustment in adolescents; however, the underlying processes have not been adequately examined. To explore the possible mediating pathways, reciprocal filial belief and perceived threat were chosen to represent two likely mechanisms accounting for how parent–child conflict harms adolescents' perceptions of their relationship with their parents and their self-perceptions within their cognitive-appraisal framework. The former operates by attenuating children's affection towards their parents and the latter by lowering their self-perceptions. This study also distinguishes internalizing from externalizing problems in order to examine whether lower reciprocal filial belief more strongly mediates the relation between conflict with parents and adolescents' externalizing problems and whether perceived threat more strongly mediates the relation between conflict with parents and adolescents' internalizing problems. Hypotheses are as follows: (1) the more parent–child conflict adolescents report, the less reciprocal filial belief they recognize, which, in turn, leads to more maladjustments, especially externalizing ones; (2) the more parent–child conflicts adolescents report, the more threat they perceive, which, in turn, leads to more maladjustments, especially internalizing ones. Participants consisted of 603 Taiwanese adolescents (226 males and 377 females) aged 15 to 19 (average age = 16.95; $SD = 0.78$). Structural equation modelling analyses confirmed the hypotheses. However, the three direct effects of conflict on internalizing problems, aggression, and deviant behaviour were still significant. In addition, a greater effect of the paternal than the maternal role on the link between conflict and attenuated reciprocal filial belief, and between perceived threat and internalizing problems, was identified. Implications for understanding the mediation processes responsible for all indirect effects, even the subsidiary ones, and the greater impact of conflict with the father than with the mother are discussed. Limitations of the study and considerations for future research are also addressed.

La recherche empirique a indiqué que le conflit parent–enfant est positivement lié à une faible adaptation chez les adolescents; cependant, les processus sous-jacents n'ont pas été adéquatement examinés. Pour explorer les trajectoires de médiation possibles, la croyance filiale réciproque et la menace perçue ont été sélectionnées afin de représenter deux mécanismes plausiblement responsables de comment le conflit parent–enfant nuit aux perceptions des adolescents de leur relation avec les parents ainsi que de leurs auto-perceptions dans le cadre de leur évaluation cognitive. Le premier fonctionne en atténuant l'affection des enfants envers leurs parents et le dernier fonctionne en diminuant leurs auto-perceptions. Cette étude distingue aussi les problèmes internalisés de ceux qui sont externalisés dans le but d'examiner si la plus faible croyance de filiation réciproque médie fortement la relation entre le conflit avec les parents et les problèmes externalisés des adolescents et si la menace perçue médie plus fortement la relation entre le conflit avec les parents et les problèmes internalisés des adolescents. Les hypothèses sont les suivantes: (1) plus il y a de conflit parent–enfant rapporté par les adolescents, moins il y aura de croyance filiale réciproque reconnue par les adolescents qui, en revanche, mènera à plus de mésadaptation surtout externalisée. L'échantillon incluait 603 participants (226 mâles et 377 femelles) âgés entre 15 et 19 ans (âge moyen = 16.95; $SD = 0.78$). Une analyse de modélisation par équation structurelle a confirmé les hypothèses. Cependant, les trois effets directs du conflit sur les problèmes internalisés, sur l'agression et sur le comportement déviant étaient toujours significatifs. De plus, nous avons observé un plus grand effet du rôle paternel plus que maternel sur le lien entre le conflit et la croyance filiale réciproque atténuée ainsi qu'entre la menace perçue et les problèmes internalisés. Les implications pour la compréhension des processus de médiation

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responsables pour tous les effets indirects, même ceux qui sont accessoires, et le plus grand impact du conflit avec le père plus qu'avec la mère sont discutés. Les limites de l'étude et les considérations pour la recherche future sont aussi abordées.

La investigación empírica ha demostrado que el conflicto entre padres e hijos está positivamente relacionado con pobre ajuste en adolescentes; no obstante, el proceso subyacente no ha sido examinado adecuadamente. Para explorar posibles caminos, se eligieron la creencia filial recíproca y la amenaza percibida con el objetivo de representar dos posibles mecanismos explicativos de cómo el conflicto padres-hijos daña la percepción de los adolescentes de su relación con los padres y su auto-percepción dentro de su marco de valoración cognitiva. El primero actúa atenuando el afecto de los hijos hacia los padres y el último bajando su auto-percepción. Este estudio también distingue los problemas interiorizados de los exteriorizados para examinar si la baja creencia filial recíproca es un mediador más fuerte de la relación entre el conflicto con los padres y los problemas exteriorizados de los adolescentes y si la amenaza percibida es un mediador más fuerte de la relación entre el conflicto con los padres y los problemas interiorizados de los adolescentes. Se han planteado las siguientes hipótesis: (1) cuanto más conflicto entre padres e hijos refieran los adolescentes, menor será el reconocimiento de la creencia filial recíproca, lo cual llevará a inadaptación, sobre todo, exteriorizada; (2) cuanto más conflicto entre padres e hijos refieran los adolescentes, mayor será la amenaza percibida, lo cual llevará a mayor inadaptación, sobre todo interiorizada. La muestra consistió de 603 adolescentes taiwaneses (226 chicos y 377 chicas) entre 15 y 19 años de edad (media edad = 16.95; $DT = 0.78$). Los análisis de los modelos de ecuaciones estructurales confirmaron las hipótesis. Sin embargo, los tres efectos directos de los conflictos en la internalización de los problemas, agresión y comportamiento anormal seguían siendo significativos. Además, se identificó un efecto mayor del rol paternal en comparación con el rol maternal en la relación entre conflicto y la creencia filial recíproca atenuada y entre la amenaza percibida y la internalización de los problemas. Se discuten las implicaciones para la comprensión del proceso mediador responsable de todos los efectos indirectos, incluso los subsidiarios, y el mayor impacto del conflicto con los padres que con las madres. Igualmente, se discuten las limitaciones del estudio y las consideraciones para la investigación futura.

Keywords: Parent-child conflict; Maladjustment; Mediator; Perceived threat; Reciprocal filial belief.

Although empirical research has shown that parent-child conflict is positively related to the incidence of depression, low self-esteem, substance abuse, hyperactivity, antisocial behaviour, and poor adjustment of adolescents in general (Ary, Duncan, Duncan, & Hops, 1999; Chiu, Shiue, & Lee, 2002; Deković, 1999; Shek, 1998; Shek & Ma, 2001), the underlying processes have not been adequately examined. To explore the possible mediating pathways, reciprocal filial belief and perceived threat were chosen to represent two likely mechanisms accounting for how parent-child conflict harms adolescents' perceptions of their relationship with their parents and their self-perceptions within their cognitive-appraisal framework. The former operates by attenuating children's affection towards their parents and the latter by lowering their self-perceptions. Both may simultaneously impact adolescent adjustment.

According to the dual filial piety model (Yeh & Bedford, 2003), there are two interrelated yet distinct dimensions of filial belief: reciprocal and authoritarian. Reciprocal filial belief refers to the affection-based gratitude and respect with which children are expected to treat their parents, while authoritarian filial belief refers to the family hierarchy and role obligation that require children's

obedience to parents. Since reciprocal filial belief is determined by children's experience of parents' love, care, and warmth, it is considered to be a universal psychological basis rather than a specific socio-cultural norm (corresponding to authoritarian filial belief) for parent-child interaction (Yeh & Bedford, 2003, 2004); it represents intimacy with parents, which is recognized as a core buffer between intergenerational conflict and maladjustment (Deković, 1999).

Parent-child conflict is often considered to be an expression of autonomy during adolescence, but the parent-child bond is still crucial to adolescent psychological development. Since a high level of conflict refers to frequent and intense disagreement, adolescents in conflict with their parents tend to reduce empathy with them and become more alienated from them, undermining their reciprocal filial belief. Empirical evidence shows that adolescents with lower reciprocal filial belief not only exhibit greater maladjustment (Yeh, 2006) but are subject to impaired psychological development, even in the case of American samples (Yeh, Bedford, & Yang, 2009). That is, if an adolescent's reciprocal filial belief is weakened by confronting parents via overt conflict, that adolescent experiences a feeling of isolation from

parents and a departure from the expected intergenerational interaction that may lead to depression, anxiety, psychosomatic symptoms, and deviant and aggressive behaviour (Deković, 1999; Yeh, 2006). The relation between parent-child conflict and both internalizing and externalizing problems is likely to be mediated by attenuated reciprocal filial belief.

Perceived threat can be defined as the anticipated harm to self caused by an emotion-arousing event that is capable of triggering the individual's stress response (Carpenter, 2005). If adolescents question their ability to cope successfully with a stressful event such as parent-child conflict, they may experience persistent worry and fear of an undesirable outcome that may produce other negative psychological symptoms. Three appraisal indicators in this study represent the perceived threat arising from parent-child conflict: worry, fear, and inability to cope.

Parent-child conflict often follows a coercive pattern on the basis of the asymmetric intergenerational relationship and entails an adolescent feeling threatened by parental power (Adams & Laursen, 2001). Further, frequent and intense conflict with parents, which implies a vicious cycle of coercion based on a hierarchical family structure, is likely to be perceived as threatening. A higher perceived threat not only leads to negative arousal that intensifies the psychological symptoms (Folkman, Lazarus, Gruen, & DeLongis, 1986) but also influences self-efficacy regarding coping, which has been found to be a potential mediator between parent-child conflict and adolescent maladjustment (Chiu et al., 2002). That is, the perceived threat arising from parent-child conflict may aggravate negative self-perceptions and lead to maladaptive coping, intensifying symptoms of maladjustment, such as anxiety, depression, or aggressive and antisocial behaviour. Hence, perceived threat should mediate the link between parent-child conflict and both internalizing and externalizing problems.

Although empirical evidence supports the comorbidity of externalizing and internalizing problems, especially in adolescence (Garnefski, Kraaij, & van Etten, 2005), there are still certain distinctions between them. For instance, externalizing problems are often directed outwards and involve excitement-seeking (e.g., drinking) or other-focused (e.g., other-blame) coping for releasing negative emotions, such as anger; whereas internalizing problems are directed inwards and involve cognitive distortion or self-focused coping with a proneness to sadness (Eisenberg et al., 2001; Garnefski et al., 2005). In this study, we distinguished externalizing

from internalizing problems in order to examine whether the dominant mediating functions of reciprocal filial belief and perceived threat correspond to externalizing and internalizing problems respectively. Parent-child conflict may lead to reduced positive thoughts and feelings that are either directed outwards (e.g., towards the relationship with parents) or inwards (e.g., toward the self). Outward concerns regarding the conflict (i.e., lower reciprocal filial belief) may produce general maladjustments more outwards directed in nature, such as externalizing problems, while the inward concerns about the conflict (i.e., perceived threat) may produce inward general maladjustments, such as internalizing problems.

The goal of this study is to examine the roles of reciprocal filial belief and perceived threat as two possible mediating mechanisms to elucidate the underlying processes that link parent-child conflict and adolescent maladjustment. According to some preliminary studies that supported the impact of parent-child conflict on adolescent maladjustment using a longitudinal design (e.g., Shek, 1998; Shek & Ma, 2001), we hypothesize that parent-adolescent conflict influences adolescent maladjustment and introduce the adolescent's reciprocal filial belief and perceived threat as potential mediators. The more parent-child conflict adolescents report, the less reciprocal filial belief they recognize, which in turn leads to more maladjustments, especially the externalizing ones (hypothesis 1). The more parent-child conflicts adolescents report, the more threat they perceive, which in turn leads to more maladjustments, especially the internalizing ones (hypothesis 2). In our model, these two mediating processes are proposed to be universal; however, cultural influences may play a role with respect to greater paternal impact on certain pathways. For example, the greater impact of father-child conflict on adolescent aggression, antisocial behaviour, and general psychological health is demonstrated by empirical findings using Chinese samples (Shek, 1998, 1999), and is suggested to be an outcome of the traditional dominant and oppressive role of fathers (Chiu et al., 2002; Shek, 1999). To determine the specific pathways that are more susceptible to paternal impact, we examined the mediating model for fathers and mothers separately.

METHOD

Participants and procedure

Participants were high school students in northern Taiwan. With the consent of their teachers, they

completed a 30-minute self-report questionnaire composed of father and mother sections in a counterbalanced sequence (father–mother or mother–father) in class. Participation was voluntary and confidentiality was ensured. After the missing and invalid responses were removed, the final sample consisted of 603 adolescents (226 males and 377 females) aged 15 to 19 (average age = 16.95; $SD = 0.78$). Fathers averaged about 48.18 years of age ($SD = 4.56$) and the majority possessed a senior high school or college education (65%); mothers averaged 45.14 years of age ($SD = 4.10$) and the majority had a grade nine education level (55%). Many parents were middle-class technicians or in related professions and service or sales workers (45.9% of fathers; 31% of mothers). Almost one-third (32%) of the mothers were housewives.

Measures

Parent–child conflict

Parent–child conflict was assessed using the Parent–Child Interaction Scale – Short Form (PIS-SF; Yeh & Bedford, 2004), which has been empirically supported as a valid measure to investigate parent–child relations in Chinese samples (Yeh, Liu, Huang, & Yang, 2007). It contains the top 25 factor loading items from the original 38; each item describes a potential conflict situation (e.g., chores, curfew, friends, and grades). Participants indicated the actual frequency and emotional intensity of the conflict related to each item on a four-point scale ranging from 0 (*never and not angry at all*) to 3 (*always and very angry*). Each item was measured twice: once with respect to the father and once to the mother. Example items are “Parent sets a time limit for phone use”, and “Parent intervenes in my choice of friends”. The Cronbach’s alpha coefficients were excellent (fathers’ data: .88 for frequency and .90 for emotional intensity; mothers’ data: .90 and .92).

Reciprocal filial belief

Reciprocal filial belief was assessed with eight items from the Dual Filial Piety Scale (Yeh & Bedford, 2003). Example items are “Be grateful to my parent for raising me” and “Be concerned about my parent and understand him/her”. Participants indicated their agreement with the items on a six-point scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). Each item was measured twice for each parent. The Cronbach’s

alpha coefficients were .90 and .89 for the father and the mother data sets, respectively.

Perceived threat

Perceived threat was assessed with three modified indicators: worry and fear (differentiated from the original Threat subscale) and inability to cope (from the original Coping Efficacy subscale), which were adapted from two subscales in the Children’s Perception of Interparental Conflict Scale (CPIC; Grych, Seid, & Fincham, 1992). We revised the context of the conflict from between parents to between parent and child. Example items are: “I don’t know what to do when getting into conflict with my parent”, “When getting into conflict with my parent I worry what will happen to me”, and “I get scared when getting into conflict with my parent”. Each dimension contained three items. Each item was assessed for each parent. Participants indicated their agreement with each item on a six-point scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach’s alpha coefficients of the three dimensions displayed good internal consistency (for the father subscales, fear was .73; worry, .68; and inability to cope, .62; for the mother subscales they were .72, .71, and .63, respectively).

Internalizing problems

Two self-report subscales from the Ko’s Mental Health Questionnaire (KMHQ; Ko, 1998) were used to measure the following internalizing problems: Anxiety and Self-contempt/Depression, with 18 and 19 items respectively. The reliability and validity of these two subscales have been well established for Taiwanese students, and some significant differences between healthy and unhealthy groups were found (Ko, 1998). Participants indicated their agreement with the items on a six-point scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). Both subscales possessed the Cronbach’s alpha coefficient of .89 in this study.

Externalizing problems

Two scales were used to measure externalizing problems. The first measure was the aggression subscale from the KMHQ (Ko, 1998). It originally contained 24 items and the participants indicated their agreement with the items on a six-point scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). Its reliability and validity are also well established for Taiwanese adolescents (Ko, 1998).

Five items were deleted because adolescents seldom encounter those situations in daily life (e.g., "I have attacked others with a weapon"). The second measure was the deviant behaviour subscale from the Activity Experience Scale (Yang & Wu, 1988). It originally contained 50 items with activities that constitute deviant behaviours as listed in high school regulations. Participants indicated the frequency of such behaviour on a five-point scale ranging from 0 (*never*) to 4 (*always*). Considering that deviance is socially determined, outdated items such as "Go dancing" and "Make friends with the opposite gender" were removed. Only 30 items were used in the study. Example items include "Run away from home" and "Cheat in exams". The Cronbach's alpha coefficient for the aggression subscale was .83 and for the deviant behaviour subscale .82.

RESULTS

Descriptive statistics

Descriptive statistics are given in Table 1. The data for fathers and mothers displayed the same statistical pattern. The three indicators of perceived threat were all strongly intercorrelated and independent of reciprocal filial belief. However, they were significantly correlated with conflict frequency, conflict intensity, and the different kinds of problem behaviour in opposite directions, except for the association between deviant behaviour and the three indicators of perceived threat. As expected, frequency and intensity of conflict had the highest correlation with each other. Fear, worry, and inability to cope were correlated with each other across the father and mother data.

They respectively form the conflict and perceived threat constructs for the data for the father and the mother in the following structural equation modelling analyses.

Considering the unsatisfactory fit indices (the fit indices of measurement model, χ^2 (112, $N = 603$) = 333.81, $p < .01$, and $\chi^2/df = 2.98$) of the proposed model with only two outcomes (externalizing and internalizing problems) and the low factor loading (.45) of externalizing latent variable on deviant behaviour, we tried another possible model that separated aggression and deviant behaviour from externalizing problems into two latent endogenous factors. Therefore, *measurement models* with a nine-factor model (internalizing problems, aggression, deviant behaviour, and the father and the mother sets of conflict, perceived threat, and reciprocal filial belief data) were conducted for mother and father conflicts separately (see Figure 1). Because the same scales were used with respect to fathers and mothers (conflict, perceived threat, and reciprocal filial belief), the equality constraints of the measurement model, including factor loadings, factor variances, and variable residuals, were examined. To avoid a method effect, each residual from the father and mother data was restricted to be correlated with each other. All factor loadings but not residuals and factor variances were equivalent across the two data sets (see Figure 1). The residuals and factor variances violating equivalence remained free-estimated. The results showed that although the chi-square value was significant, χ^2 (175, $N = 603$) = 379.82, $p < .01$, and $\chi^2/df = 2.17$, possibly because of the large sample size and degrees of freedom (Kline, 1998), the measurement model possessed an acceptable fit: root mean square error

TABLE 1
Means, standard deviations, and correlation coefficients for major variables

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Mean | SD |
|--|--------|--------|--------|-------|-------|-------|--------|-------|--------|--------|-------|-------|
| 1. Conflict frequency | .52** | .75** | -.18** | .24** | .15** | .31** | .30** | .31** | .22** | .09* | 15.92 | 10.85 |
| 2. Conflict intensity | .74** | .54** | -.17** | .21** | .15** | .31** | .24** | .23** | .20** | .06 | 13.71 | 11.29 |
| 3. Reciprocal filial belief | -.28** | -.24** | .68** | -.03 | .00 | -.08 | -.20** | -.09* | -.35** | -.18** | 33.40 | 5.01 |
| 4. Perceived threat: Fear | .19** | .15** | .06 | .47** | .73** | .72** | .23** | .28** | .10* | -.06 | 6.16 | 3.40 |
| 5. Perceived threat: Worry | .11** | .09* | .06 | .68** | .65** | .70** | .24** | .26** | .17** | .01 | 6.19 | 3.57 |
| 6. Perceived threat: Inability to cope | .32** | .28** | -.08 | .69** | .70** | .52** | .29** | .30** | .15** | -.01 | 6.06 | 3.06 |
| 7. Depression | .29** | .24** | -.20** | .29** | .26** | .36** | — | | | | | |
| 8. Anxiety | .29** | .24** | -.10* | .34** | .30** | .36** | .85** | — | | | | |
| 9. Aggression | .20** | .17** | -.30** | .13** | .16** | .20** | .53** | .49** | — | | | |
| 10. Deviant behaviour | .16** | .12** | -.19** | -.08 | -.07 | -.02 | .18** | .14** | .45** | — | | |
| Mean | 15.84 | 14.88 | 32.37 | 6.66 | 6.01 | 6.01 | 30.79 | 37.47 | 16.74 | 8.10 | | |
| SD | 10.45 | 11.25 | 5.53 | 3.42 | 3.35 | 3.01 | 14.17 | 15.28 | 9.85 | 6.90 | | |

The statistics for the father/mother data are presented below/above the diagonal. The statistics on the diagonal are the correlation coefficients between the two sets of data. * $p < .05$; ** $p < .01$.

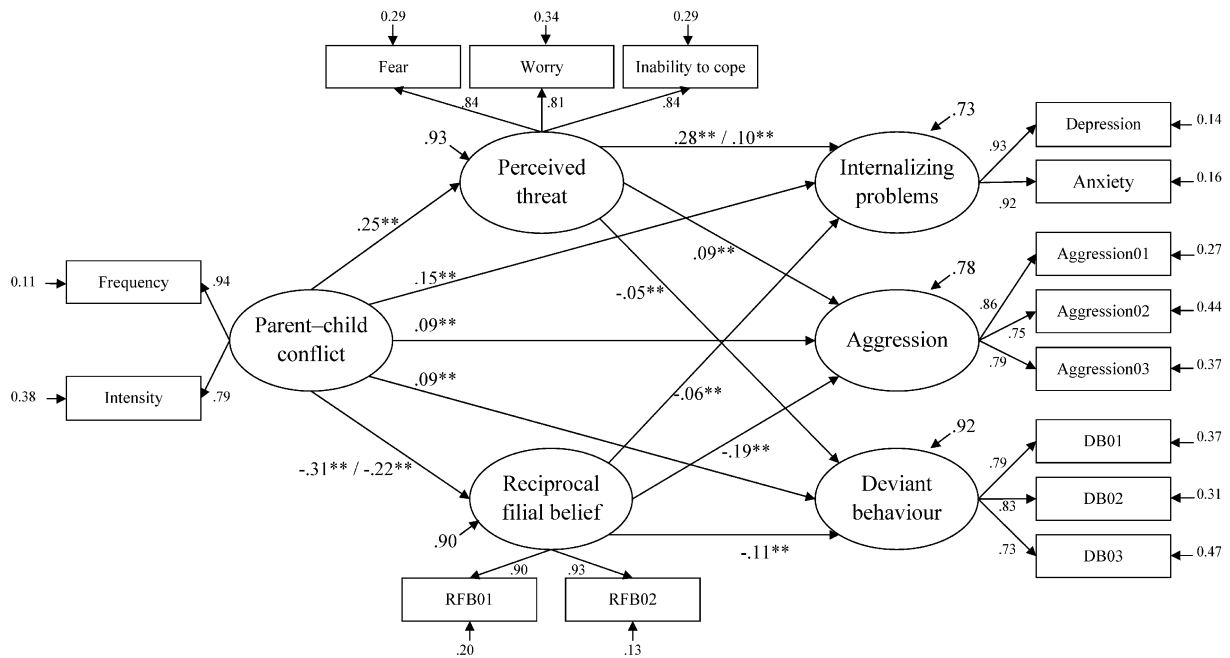


Figure 1. A mediational model explaining psychological maladjustment. Reciprocal filial belief, aggression, and deviant behaviour were indicated by parcelled indicators. Where regression coefficients violated the equivalence test, two statistics are presented, the first for fathers and the second for mothers. * $p < .05$; ** $p < .01$.

of approximation (RMSEA) = .044, non-normed fit index (NNFI) = .98, comparative fit index (CFI) = .98, and standardized root mean square residual (SRMR) = .036. The factor loadings were between .73 and .94 (median = .84), implying that the measurement model was reliable.

Main analyses

The structural model showed that except for the positive impact on internalizing problems, the perceived threat caused by conflict with fathers was larger than that caused by conflict with mothers ($\beta_{\text{Father}} = .28$, $\beta_{\text{Mother}} = .10$, $\Delta\chi^2 = 4.87$, $p < .05$), and the negative impact on reciprocal filial belief from conflict with fathers was greater than that with mothers ($\beta_{\text{Father}} = -.31$, $\beta_{\text{Mother}} = -.22$, $\Delta\chi^2 = 8.35$, $p < .05$); other path effects were equivalent across the data sets for the father and the mother and the model statistics were as follows: $\chi^2(197, N = 603) = 436.46$, $p < .01$, RMSEA = .045, NNFI = .98, CFI = .98, and SRMR = .043. The whole structure model explained 27% of the variance in internalizing problems, 23% of the variance in aggression, and 8% of the variance in deviant behaviour caused by the conflict with parents via the mediation of perceived threat and reciprocal filial belief.

The results also showed that except for the marginal significance of the two indirect effects

($z_{\text{Father}} = -1.936$, $p = .053$; $z_{\text{Mother}} = -1.936$, $p = .053$) from conflict to deviant behaviour via perceived threat, the other 10 indirect effects were all significant (Sobel, 1982) (see Figure 1). When comparing the standardized indirect path, reciprocal filial belief was a stronger mediator for aggression and deviant behaviour than for internalizing problems with respect to both the father and the mother effects ($t_{\text{aggression}} = 2.68$, $p < .01$; $t_{\text{deviant behaviour}} = 2.95$, $p < .01$). Perceived threat was a stronger mediator for internalizing problems than for aggression and deviant behaviour on both the father and the mother effects ($t_{\text{aggression}} = 5.65$, $p < .01$; $t_{\text{deviant behaviour}} = 2.02$, $p < .01$). Both hypotheses 1 and 2 were supported. However, the three direct effects of conflict on internalizing problems, aggression, and deviant behaviour were still significant.

DISCUSSION

This study examined the process by which parent-child conflict affects adolescent adjustment. Since the direct effects controlling both mediators were reduced but still significant, only partial mediation could be identified. As expected, the mediating effects were stronger for reciprocal filial belief on externalizing than internalizing problems and stronger for perceived threat on internalizing than externalizing problems across both parents' data.

However, it was also found that reciprocal filial belief and perceived threat each mediate the relationship between parent-child conflict and both internalizing and externalizing problems. Although this result is likely due to the comorbidity of externalizing and internalizing problems in adolescence, the implications of all indirect effects, even the subsidiary ones, are elaborated as follows.

We hypothesized that lower levels of reciprocal filial belief should more strongly mediate the relationship between parent-child conflict and externalizing problems because reciprocal filial beliefs and externalizing problems both have an outward focus. Since adolescents' intimacy with parents governs attention outwards to intergenerational interactions, attenuated reciprocal filial belief due to breaking off the intergenerational relationship during conflict is more likely to produce externalizing problems. For instance, attenuated reciprocal filial belief may accelerate the entry of adolescents into deviant peer networks to seek substitutes for the parent-child bond, increasing the risk of smoking, drinking, or aggressive and antisocial behaviour (Ary et al., 1999). Although the mediating role of reciprocal filial belief was greater for externalizing problems for both parents' data, there was a greater effect of the father role on the link between conflict and attenuated reciprocal filial belief. This result is expected in light of the traditional parenting style of Chinese fathers, which emphasizes the importance of being strict with children (Shek, 2002). Children rarely experience paternal affection and care in daily interaction and their reciprocal filial beliefs with their father are more likely to be reduced by conflict.

We hypothesized that perceived threat should more strongly mediate the relationship between parent-child conflict and internalizing problems, because perceived threat and internalizing problems both have an inner focus. A high level of conflict with parents may create adolescents' emotional disturbance and feelings of threat to the self. First, if the conflict is recognized as recurring, adolescents may feel unable to manage a similar situation in the future. Second, due to fear that the relationship may be disrupted by severe conflict, adolescents who are immature or dependent on parents may not adopt positive coping strategies to transform the dominant-submissive interaction in handling conflict with parents (Chiu et al., 2002). Third, because adolescents still live with their parents, after intense conflict adolescents may be worried about deadlock or negative outcomes in daily interaction (Adams & Laursen, 2001). Since severe parent-child conflict tends to

be perceived as threatening by adolescents, the mediating pathway to internalizing problems is most likely established due to links between focusing on various undesirable consequences for the self and internalizing problems (e.g., Garnefski et al., 2005).

Although significant mediating effects of perceived threat existed on the link between conflict and internalizing problems for both parents' data, a greater effect of paternal role was manifested. A possible reason for this might be that a father's response does not easily trigger conflict-resolution behaviour (Shek, 1998, 1999); instead, the dominant status role in the family of a Chinese father aggravates the feeling of being threatened, bringing on additional internalizing problems.

In addition to the comorbidity of internalizing and externalizing problems, the subsidiary mediating effects of reciprocal filial belief for internalizing problems and of perceived threat for aggressive behaviour may result from other possible processing. Reciprocal filial belief has been empirically shown to relate to behavioural skills benefiting social interaction such as perspective-taking and empathy (Yeh & Bedford, 2003). Attenuated reciprocal filial belief due to parent-child conflict may also have a harmful influence on how adolescents interpret the negative information and may be accompanied by greater cognitive distortion, inducing internalizing problems. For those adolescents who are threatened by weakened parental bonds and who do not know how to repair a broken relationship, outward aggression towards others may reflect an extreme state of fear, while no subsidiary effect for deviant behaviour may reflect a wariness of parents' demands.

As to the possible reason for the unexpected result that aggression and deviant behaviour were differentiated into two distinct kinds of externalizing problems, it seemed that aggression is a more directly relational response due to conflict while deviant behaviour, especially antisocial behaviour, is a more indirect way to attract parental attention.

A lower but significant direct effect of conflict on behaviour problems was indicated by the present model. This may result from the transition that occurs during puberty. An increase in conflict with parents and difficult behaviour during adolescence are developmental phenomena arising from both emotional disturbances and display of autonomy via rebellious behaviour (Deković, 1999; Garnefski et al., 2005). Some forms of externalizing behaviour are directed toward non-parents, implying that any reduction in conflict associated with high reciprocal filial belief cannot

explain these behaviours. In addition, the residual direct effect could include mediators not assessed in the present model. Two types of emotion aroused by conflict, feelings of anger and self-blame, may be regarded as adolescents' immediate reactions to conflict with parents and may simultaneously mediate the link between conflict and adolescent maladjustment. How these potential mediators function in the link between parent-adolescent conflict and adolescent maladjustment is worth future investigation.

This study has certain limitations. The most important is use of a cross-sectional design to claim causal direction assumed in the proposed mediating model. In fact, a bidirectional effect may exist between parent-child conflict and adolescents' maladjustment. Empirical findings also suggested that adolescents with psychological symptoms (e.g., depression) are prone to negative interpretation of their parents' behaviours, thereby increasing conflict (Chan, 1998; Shek, 1998) or feeling threatened, and that some delinquency may be the source of parent-adolescent conflict (Shek & Ma, 2001), which can weaken the reciprocal trust and bonding between generations. Thus, an experimental or a longitudinal design should be considered to specify the direction of influence in future research. Second, as is the case for all self-report studies, our results are susceptible to the problem of common method variance. The correlations between measures may be inflated when the same respondent is involved. Future research may include behavioural measures or non-questionnaire data in order to test survey results and provide further insight into the topic. In addition, the perceived threat scale with three indicators used in the present study, which was much different from the original CPIC, still needs additional empirical support to confirm validity.

Despite such limitations, this study provides an empirical illustration of the mediating mechanism that links parent-child conflict and adolescent maladjustment in a Taiwanese context. Although we do not expect the link between parent-child conflict and child maladjustment to be susceptible to cultural differences, the mediating mechanism may not be applicable universally. It is important to examine the mediating mechanism in other cultural contexts and to incorporate more specific moderators, such as temperament, types of conflict, and socio-cultural values, in order to advance the processing mechanisms of the two proposed pathways in the present model.

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Mediating effects of negative emotions in parent–child conflict on adolescent problem behavior

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Hierarchical regression analyses were used to study four types of negative emotions (rage, resentment, perceived threat, and self-blame) as possible mediators of the effect of parent–child conflict on internalizing (psychosomatic symptoms and social withdrawal) and externalizing (violent aggression and deviance) behavior in 724 adolescents. After controlling for demographic variables, the results showed that for both parents conflict had a positive main effect on internalizing and externalizing behavior. Of the four types of negative emotions, rage was the strongest mediator to mediate the effect of conflict on violent aggression, and resentment was the strongest mediator to mediate the effect of conflict on psychosomatic symptoms, social withdrawal, and deviant behavior. Implications and limitations of the study are discussed, and suggestions for future research are offered.

Key words: externalizing problem, internalizing problem, mediator, parent–child conflict, rage, resentment.

Introduction

The impact of the parent–child relationship on adolescent adjustment has been a topic of concern in several disciplines, including education, psychology, psychiatry, sociology, and social work. For many years, clinicians have treated parent–child conflict as a critical source of adolescent problem behavior (Foster & Robin, 1988). Even in the large number of studies testing normal adolescents, parent–child conflict has been found to contribute to adolescent maladjustment, including depression (Deković, 1999; Greenberger & Chen, 1996), low self-esteem (Deković; Shek, 1997), conduct problems at school (Chiu, Shiue, & Lee, 2002; Shek), antisocial behavior (Shek & Ma, 2001), as well as emotional distress and a poor sense of well-being (Shek, 1998). However, there has been little research on the underlying processes that could explain how parent–child conflict results in adolescent problem behavior. As a result, there are no procedures that have been proven effective in improving adolescent adjustment by enhancing parent–child relations.

It has been suggested that parent–adolescent conflict might result in adolescent maladjustment, because the conflict can be regarded as a stressor that affects the emotional life of the adolescent (Shek, 1997). For many adolescents, parent–child conflict is the primary source of stress in their daily life (Chan, 1998). Adolescents often yearn for guidance or support when disagreeing with parents, especially when seeking increased personal autonomy. Strong

disagreement, leading to negative emotion, might gradually reduce the adolescent's emotional regulation ability, which in turn leads to maladjustment. Whether the conflict triggers problem behavior depends on the adolescent's cognitive appraisal of the conflict, as well as the level of negative emotion aroused in the adolescent. If the adolescent interprets the conflict as natural or constructive, the result can be a neutral or positive outcome (Holmbeck, 1996). If, however, the adolescent interprets the disagreement negatively, then negative emotion is easily aroused, and the likely result is problem behavior.

I propose that parent–child conflict in daily life is stressful or unpleasant and the source of four types of negative emotions: rage, resentment, perceived threat, and self-blame, which are triggered by different types of conflict situations. These four negative emotions are introduced as possible mediators of the relationship between parent–child conflict and adolescent psychological maladjustment.

Rage is a state of extreme, violent, or uncontrollable anger characterized by impulsiveness; it tends to be expressed when faced with an attack to one's self-esteem (Anderson, 2001). It was chosen for the present study not only because it is frequently associated with parent–child conflict, but also because it is considered to be a core antecedent of violent or aggressive behavior (Rule & Nesdale, 1976; Swinford, DeMaris, Cernkovich, & Gior-dano, 2000). Rage is especially likely to be a mediator when the conflict leads to behavior that is violent.

Resentment is a feeling of indignant displeasure or persistent ill will directed at a target regarded as involved in perpetrating an injustice, insult, or injury against one (Retzinger, 1985). Although both rage and resentment stem from anger, rage is more immediate, explosive, intense, impulsive, and uncontrollable than resentment. Unlike rage,

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Received 9 August 2010; accepted 25 February 2011.

which is often an outbreak of public anger and accompanied by distorted facial expressions and intense verbal or physical counterattacks, resentment is generally characterized as a bitter indignation and an implosive anger that is not delivered, but directed inward after having been treated unfairly or offended. Roth, Assor, Niemiec, Ryan, and Deci (2009) recently found that resentment towards parents mediated the relationship between a conflict caused by withdrawal of parental love and an adolescent's emotional dysfunction and academic disengagement. This finding implies that the mediating role of resentment is especially likely when the adolescent's behavior expresses an internalizing problem, because resentment and internalizing problems share an inward focus.

Perceived threat is a negative emotion caused by the anticipation of harm from an event perceived as potentially stress inducing (Carpenter, 2005; Folkman, Lazarus, Gruen, & DeLongis, 1986). It has been identified as a possible mediator in the relationship between parent-child conflict and psychological maladjustment in adolescents (Yeh, Tsao, & Chen, 2010), especially when the conflict also creates an internalizing problem, such as anxiety or depression.

Self-blame is attribution to the self of responsibility for a conflict, along with associated feelings, such as guilt and regret. There is evidence that character self-blame (an esteem-related, relatively unmodifiable source associated with the belief that one deserves to be blamed for past negative outcomes), but not behavioral self-blame (a modifiable source that can avoid future negative outcomes), is significantly associated with depression and helplessness (Miller & Porter, 1983; Wu, 1996). This finding implies that adolescents who habitually blame themselves and feel regret and guilt for conflict with their parents are likely to develop problem behaviors, especially internalizing problems (e.g. social withdrawal), if the conflict persists.

Despite the relatively high comorbidity of externalizing and internalizing problems in adolescence, there are certain distinctions between them. Previous studies have supported that different types of negative emotions (Eisenberg *et al.*, 2001) or cognitive regulation styles (Garnefski, Kraaij, & van Etten, 2005) relate, respectively, to externalizing and internalizing problems. In this study, I distinguish externalizing from internalizing problems in order to clarify the different mediating mechanisms of four types of negative emotional arousals due to parent-adolescent conflict. I did not address anxiety and depression as outcomes in the study because they are emotionally complex and tend to be confounded with the potential mediators of primary interest. Rather, clear behavioral outcomes were chosen as the dependent variables. Specifically, psychosomatic symptoms and social withdrawal were chosen to represent internalizing problems, and violent and deviant behavior was chosen to represent externalizing problems.

According to the preceding discussion, I hypothesize that rage primarily mediates the association between parent-child conflict and violent aggression problems, because rage is easily exposed when the conflict originates from inappropriate parenting behavior, such as abuse, disrespect, or attack on an adolescent's self-esteem. In turn, it is likely to be a trigger, resulting in violent or reactive aggression towards parents and others (Reckling & Buirski, 1996). Resentment, perceived threat, and self-blame are hypothesized to primarily mediate the association between parent-child conflict and internalizing problems. The mediation is expected because resentment is likely to be caused by conflict due to perceived parental injustice or love withdrawal, perceived threat caused by severe parent-child conflict, and self-blame caused by the adolescent's coping style (feeling blame, regret, and guilt for conflict with parents). These negative emotional arousals might result in later internalizing problems, because they all share an inward focus.

Method

Participants and procedure

The participants were 724 students (347 males and 377 females) in grade 7 (M age = 13.34 years, SD = 0.50) from nine middle schools in Taiwan. With the consent of their teachers and parents, they completed a 30-min self-report questionnaire with separate father and mother sections. The questionnaire was presented in class in a counterbalanced order (father-mother or mother-father). Participation was voluntary, and confidentiality was ensured. Approximately 84% of the participants lived with both parents. The average age of the fathers was 44.46 years (SD = 5.54), and of the mothers, 41.16 years (SD = 4.92). Most parents (59.4% of fathers, 55.5% of mothers) were middle-class technicians and service or sales workers. Approximately one-quarter (26.5%) of the mothers were housewives.

Measures

Parent-child conflict. The 20-item scale measuring parent-child conflict was adapted from the Parent-Child Interaction Scale-Short Form (Yeh & Bedford, 2004), which has been supported as a valid measure of parent-child relations in Taiwanese samples (Yeh, Liu, Huang, & Yang, 2007; Yeh *et al.*, 2010). Each item describes a potential conflict situation (e.g. chores, curfew, friends, and grades). Participants indicated both the frequency and intensity of the conflict on a four-point scale ranging from 0 ('never, has no impact on my life') to 3 ('always, has great impact on my life'). If the frequency was rated at 'never' (0), the intensity was set at 'has no impact' (0). Each item was presented separately for the father and the mother.

Sample items are 'Father/mother objects to the extracurricular activities in which I participate', and 'Father/mother intervenes in my choice of friends'. The total score is the sum of the frequency and intensity ratings. Internal consistency (Cronbach's alpha) was acceptable for both the father (0.86 for frequency, 0.88 for intensity) and the mother (0.88, 0.89) versions.

Negative emotional arousal. Negative emotional arousal was measured by asking the adolescents about their negative feelings or experiences arising from conflict with their parents. Four scales were developed by the author to measure the four types of conflict-related emotion discussed earlier (rage, resentment, perceived threat, and self-blame). All items were taken from previously published scales, and modified to be specifically applicable to parent-child conflict. Each item was presented separately for the father and the mother. Participants indicated their agreement with each item on a six-point scale ranging from 0 ('strongly disagree') to 5 ('strongly agree').

Rage was assessed by asking the adolescents to appraise harm to their self-esteem and sudden emotional impulses accompanied by the feeling of losing control during conflict with their parents. This 12-item scale was adapted from the Reactive Anger and Anger Control subscales of the Adolescent Anger Rating Scale (Burney & Kromrey, 2001) and from the Anger-Arousal subscale of the Multi-dimensional Anger Inventory (Siegel, 1986). Example items are: When I get into a conflict with my father/mother, 'he/she makes me feel out of control', and 'I can't keep from yelling or shouting at him/her'. Cronbach's alpha was satisfactory for both the father (0.91) and the mother (0.91) versions.

Resentment was assessed by asking the adolescents about feelings of unfairness, being ignored, revenge, or feeling mortified during the conflict. The 14 items were adapted from the Social Characteristics and Personal Goals and Standards subscales of the Comparative Feeling of Inferiority Index (Dixon & Strano, 1989). Example items are: When I get into a conflict with my father/mother, 'I feel mortified' and 'I curse or talk back silently'. Cronbach's alpha was satisfactory for both the father (0.91) and the mother (0.91) versions.

Perceived threat was assessed by asking the adolescents to estimate their incurred harm or loss after the conflict and to assess their feelings of worry about it. The 12 items were adapted from the Rejection by Others, Negative Evaluation by Others, and Loss of Desired Other/Objects subscales of the Threat Appraisal Scale (Prevention Research Center, 1999). Example items are: after getting into conflict with my father/mother, 'I worry I won't be supported by him/her anymore' and 'I am afraid of being punished by him/her'. Cronbach's alpha was satisfactory for both the father (0.92) and the mother (0.93) versions.

Self-blame was defined in terms of character, as proposed by Janoff-Bulman (1979). The adolescents were asked to assess their self-attributions that arose after the conflict and their enduring feelings of guilt associated with the conflict. The scale has nine items. Example items are: after getting into conflict with my father/mother, 'I feel regret' and 'I feel disappointed in myself'. Cronbach's alpha was satisfactory for both the father (0.94) and the mother (0.94) versions.

Internalizing behavior problems. Two self-report scales were used to measure internal behavior problems. Participants indicated the frequency of the specific problem behaviors on a six-point scale ranging from 0 ('never') to 5 ('always').

Psychosomatic complaints were measured by a 17-item scale. The items were adapted from the Somatic Complaints, Thought Problems, and Attention Problems subscales of the Child Behavior Checklist-Youth Self-Report Form (CBCL-YSR) for ages 11-18; Achenbach, 1991). Cronbach's alpha for the scale was 0.92.

Social withdrawal was measured by a 10-item scale. The items assessed adolescent behavior, such as refusing to talk with others or being secretive, passive, dispirited, or timid. They were selected from the Withdrawn subscale of the CBCL-YSR (Achenbach, 1991) and the Withdrawal/Timidity subscale of the Adolescent Social Behavior Scale (Hung, 1997). Cronbach's alpha for the scale was 0.85.

Externalizing behavior problems. Two self-report scales were used to measure external behavior problems on the same six-point scale used for internalizing problems.

Violent aggression was measured by an eight-item scale. The items assessed severe aggression or violent behavior in adolescents. They were taken from the Physical and Verbal Aggression subscales of the Aggression Questionnaire (Buss & Perry, 1992) and from the Aggressive Behavior subscale of the CBCL-YSR. Cronbach's alpha for the scale was 0.79.

Deviant behavior was measured by an 18-item scale. Most of the items were adapted from the Delinquent Behavior subscale of the CBCL-YSR, with the remainder taken from the Activity Experience Scale (Yang & Wu, 1988). The latter items were chosen because they address commonly prohibited behaviors in Taiwanese high schools that are not tapped by the CBCL-YSR. Cronbach's alpha for the scale was 0.85.

Results

Means, standard deviations, and correlations for all major variables were calculated separately for the father and the

Table 1 Means, standard deviations, and Pearson correlations for major variables

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | <i>M</i> (mother) | <i>SD</i> (mother) |
|---------------------------|--------------|--------------|--------------|--------------|--------------|-------|-------|-------|-------|----------------------|-----------------------|
| 1. Parent-child conflict | 0.56* | 0.62* | 0.55* | 0.31* | 0.17* | 0.42* | 0.29* | 0.30* | 0.28* | 33.79 | 21.14 |
| 2. Rage | 0.57* | 0.63* | 0.75* | 0.29* | 0.21* | 0.52* | 0.40* | 0.40* | 0.30* | 17.27 | 14.67 |
| 3. Resentment | 0.52* | 0.73* | 0.77* | 0.44* | 0.44* | 0.61* | 0.53* | 0.34* | 0.30* | 28.27 | 16.97 |
| 4. Perceived threat | 0.34* | 0.25* | 0.39* | 0.74* | 0.64* | 0.37* | 0.30* | 0.16* | 0.12* | 25.30 | 17.22 |
| 5. Self-blame | 0.15* | 0.17* | 0.38* | 0.65* | 0.75* | 0.34* | 0.33* | 0.06 | 0.04 | 12.51 | 9.00 |
| 6. Psychosomatic symptoms | 0.40* | 0.47* | 0.56* | 0.36* | 0.33* | — | 0.67* | 0.33* | 0.33* | 24.77 | 18.38 |
| 7. Social withdrawal | 0.29* | 0.36* | 0.47* | 0.27* | 0.25* | 0.67* | — | 0.31* | 0.27* | 15.79 | 10.30 |
| 8. Violent aggression | 0.27* | 0.34* | 0.30* | 0.17* | 0.07 | 0.33* | 0.31* | — | 0.57* | 6.40 | 4.84 |
| 9. Deviant behavior | 0.28* | 0.29* | 0.29* | 0.13* | 0.03 | 0.33* | 0.27* | 0.57* | — | 5.53 | 6.33 |
| <i>M</i> (father) | 27.25 | 15.32 | 26.46 | 23.27 | 11.77 | 24.77 | 15.79 | 6.40 | 5.53 | | |
| <i>SD</i> (father) | 18.62 | 13.90 | 16.79 | 16.84 | 8.70 | 18.38 | 10.30 | 4.84 | 6.33 | | |

Statistics for fathers are below the diagonal, and those for mothers are above the diagonal. Statistics on the diagonal (bold) are correlations between the father and the mother. * $p < 0.01$.

mother versions (Table 1). The mean differences between father and mother on the magnitude of conflict and the mediators (rage, resentment, perceived threat, and self-blame) were all significant [$t(723) = -9.40, -4.28, -4.21, -4.41$, and -3.19 , respectively; all $p < 0.001$]. Conflict magnitude and negative emotions were greater with the mother than the father, perhaps because the mother is more likely to be the primary caregiver and interacts more with the adolescent, thereby creating more opportunity for conflict and the arousal of negative emotion.

The correlation patterns for the mother and father were almost identical. The greater the conflict, the more the adolescents recognized their emotional arousal, and the more internalizing (psychosomatic symptoms and social withdrawal) and externalizing (violent aggression and deviant behavior) problem behaviors they reported. With the exception of self-blame, which was not associated with deviant behavior or violent aggression for either parent, the greater the adolescents' negative emotional arousal due to conflict, the more internalizing and externalizing problem behaviors they reported. All the internalizing and externalizing problem behaviors correlated moderately and significantly with one another.

Demographic variables (adolescents' sexes, family structures, both parents' education levels) were entered into Block 1 in the hierarchical regression analyses as control variables. Conflict was entered into Block 2 to test its main effect on problem behaviors. The four negative emotions were entered simultaneously into Block 3 to test their mediating effects on the relation between conflict and the four types of problem behaviors.

Internalizing problems

The results for internalizing problems are summarized in Table 2.

Psychosomatic symptoms

Two control variables, sex ($\beta = 0.18, p < 0.05$) and the father's education level ($\beta = -0.09, p < 0.05$), were significantly associated with psychosomatic symptoms in the adolescents. Specifically, female adolescents or adolescents with fathers with a low education level were most vulnerable to these symptoms. With demographic variables controlled, both conflict with the father ($\beta = 0.40, p < 0.01$) and that with the mother ($\beta = 0.41, p < 0.01$) had a positive main effect on adolescents' psychosomatic symptoms. The more conflict there was, the more severe the adolescents' psychosomatic symptoms. This main effect was partially mediated by all four types of negative emotions for the father (the Sobel test, $z = 2.49, 6.06, 2.08$, and 2.03 , for rage, resentment, perceived threat, and self-blame, respectively, all $p < 0.05$) and by all but self-blame for the mother ($z = 2.69, 6.92$, and 2.06 , all $p < 0.05$). However, among the mediating effects, resentment was the most powerful.

Social withdrawal

Three control variables, sex ($\beta = 0.11, p < 0.05$), father's education ($\beta = -0.10, p < 0.05$), and family structure ($\beta = 0.09, p < 0.05$), were significantly associated with adolescents' social withdrawal. Female adolescents or adolescents with fathers with a low education level or who lived in a single-parent household were most vulnerable to social withdrawal. With demographic variables controlled, both conflict with the father ($\beta = 0.29, p < 0.01$) and that with the mother ($\beta = 0.29, p < 0.01$) had a positive main effect on adolescents' social withdrawal. The greater the conflict, the more the adolescents withdrew socially. For the father, this main effect was fully mediated by resentment (the Sobel test, $z = 6.54, p < 0.001$); for the mother, it was fully mediated by resentment and self-blame ($z = 7.44$ and 2.22 , for resentment and self-blame, respectively, both $p < 0.05$).

Table 2 Betas from the hierarchical regression analyses for parent-child conflict, and negative emotions predicting internalizing problems

| Predictors | Psychosomatic symptoms | | | | | | Social withdrawal | | | | | |
|---------------------------------|------------------------|-----------|----------|-----------|----------|----------|-------------------|----------|----------|----------|----------|----------|
| | Father | | | Mother | | | Father | | | Mother | | |
| | Model 1 | Model 2 | Model 3 | Model 2 | Model 3 | Model 3 | Model 1 | Model 2 | Model 3 | Model 2 | Model 3 | Model 3 |
| Demographic control variables | | | | | | | | | | | | |
| Sex [†] | 0.18*** | 0.17*** | 0.09** | 0.14*** | 0.05 | 0.05 | 0.11** | 0.10** | 0.03 | 0.08* | 0.08* | -0.02 |
| Father's education [‡] | -0.09* | -0.10** | -0.09** | -0.10** | -0.09* | -0.09* | -0.10* | -0.11* | -0.10* | -0.11* | -0.11* | -0.10* |
| Mother's education [‡] | -0.01 | -0.01 | 0.01 | 0.00 | 0.03 | 0.03 | 0.01 | 0.01 | 0.03 | 0.02 | 0.02 | 0.04 |
| Family structure [§] | 0.06 | 0.05 | 0.04 | 0.06 | 0.03 | 0.03 | 0.09* | 0.08* | 0.07* | 0.09** | 0.09** | 0.05 |
| Parent-child conflict | | 0.40*** | 0.13*** | 0.41*** | 0.09* | 0.09* | | 0.29*** | 0.06 | 0.29*** | 0.29*** | 0.01 |
| Negative emotions | | | | | | | | | | | | |
| Rage | | | 0.12* | | 0.13** | 0.13** | | | 0.03 | | | 0.03 |
| Resentment | | | 0.32*** | | 0.38*** | 0.38*** | | | 0.37*** | | | 0.45*** |
| Perceived threat | | | 0.09* | | 0.08** | 0.08** | | | 0.06 | | | 0.02 |
| Self-blame | | | 0.10* | | 0.06 | 0.06 | | | 0.05 | | | 0.11* |
| ΔR^2 | 0.05 | 0.16 | 0.17 | 0.17 | 0.19 | 0.19 | 0.03 | 0.08 | 0.13 | 0.08 | 0.08 | 0.19 |
| d.f. | 4/719 | 5/718 | 9/714 | 5/718 | 9/714 | 9/714 | 4/719 | 5/718 | 9/714 | 5/718 | 5/718 | 9/714 |
| ΔF | 9.14*** | 142.35*** | 47.60*** | 151.25*** | 58.65*** | 58.65*** | 5.86** | 66.55*** | 31.84*** | 65.13*** | 65.13*** | 49.35*** |

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. [†]Sex is a dummy variable (1 = female, 0 = male). [‡]Education is an ordinal variable (1 = elementary school, 2 = middle school, 3 = high school, 4 = junior college, 5 = university, 6 = graduate school), but is treated as continuous in the regression model. [§]Family structure is a dummy variable (1 = single-parent family, 0 = two-parent family).

As with psychosomatic symptoms, resentment was the most influential mediator of adolescents' social withdrawal of the four negative emotions.

Externalizing problems

The results for externalizing problems are summarized in Table 3.

Violent aggression

Two control variables, sex ($\beta = -0.15$, $p < 0.05$) and the father's education level ($\beta = -0.11$, $p < 0.05$), were negatively associated with adolescents' violent aggression. Male adolescents, or those whose fathers had a low education level, were most vulnerable to violent aggression. With demographic variables controlled, both conflict with the father ($\beta = 0.28$, $p < 0.01$) and that with the mother ($\beta = 0.32$, $p < 0.01$) had a positive main effect on adolescents' violent aggression. The greater the conflict, the more violent the adolescents were. For both the father and the mother, this main effect was fully mediated by rage and resentment (the Sobel test, father: $z = 4.01$ and 2.05 , both $p < 0.05$; mother: $z = 4.56$ and 2.89 , both $p < 0.01$). Rage was the most influential mediator of adolescents' violent aggression of the four negative emotions.

Deviant behavior

Two control variables, sex ($\beta = -0.10$, $p < 0.05$) and family structure ($\beta = 0.10$, $p < 0.05$), were significantly associated with adolescents' deviant behavior. Male adolescents or those living in a single-parent family were most vulnerable to deviant behavior. With demographic variables controlled, both conflict with the father ($\beta = 0.28$, $p < 0.01$) and with the mother ($\beta = 0.29$, $p < 0.01$) had a positive main effect on adolescents' deviant behavior. The greater the conflict, the more the adolescents exhibited deviant behavior. This main effect was partially mediated only by resentment for both the father (the Sobel test, $z = 3.31$, $p < 0.001$) and the mother ($z = 3.73$, $p < 0.001$).

Discussion

Adolescents have frequent conflicts with their parents about psychological adjustment issues. The close relation of these issues to the arousal of negative emotions in adolescents complicates the underlying mechanism. Controlling for demographic variables, the current study confirmed previous findings (Shek, 1998; Shek & Ma, 2001; Yeh *et al.*, 2010) that the more conflicts adolescents have with either their father or their mother, the more they exhibit internalizing and externalizing problem behaviors. The present

study goes further to reveal that specific negative emotions (rage, resentment, perceived threat, and self-blame) aroused by the conflict fully or partially mediate the effects of the conflict on adolescent problem behaviors. As expected, for both parents, the mediating effect of rage was stronger for violent aggression than for the other three problem behaviors. Previous studies have shown that conflict resulting from inappropriate parenting behavior can create aggression problems (Reckling & Buirski, 1996; Yeh *et al.*, 2010) and also suggests that harsh, abusive, disciplinary practices engender feelings of rage in children (Guerney, Waldo, & Firestone, 1987). Results of this study indicated that the rage caused by the conflict with parents is likely to induce violent aggressive behavior. Future studies should identify what particular types of parent-child conflict generate adolescent rage in order to generate solutions for reducing the risk of parent-child conflict leading to adolescent violence.

As expected, for both parents, the mediating effect of resentment for internalizing problems was supported; it was the strongest of the four negative emotions. Roth *et al.* (2009) found that resentment towards parents resulting from parental withdrawal of love, mediated the relationship between improper parenting and poor control of emotions and academic disengagement in adolescents. In that study, a conflict was most likely to induce adolescent resentment towards parents when the conflict resulted from parental conditional negative regard (i.e. parents withdrawing attention and affection when their adolescent failed to act as they expected). In such cases, conflict led to poor regulation of emotion and behavior problems via resentment towards parents. This explanation of parent-child conflict leading to problem behavior via poor regulation of resentment was supported by the findings of this study, especially adolescent psychosomatic symptoms and social withdrawal. However, for both parents, the mediating effect of resentment on externalizing problems was also significant, and particularly resulted in deviant behavior. This is an unexpected result. The possible reasons may be: (i) the outlet of resentment might not always be inward, but sometimes outward when repression of indignant displeasure is exhausted. The most likely result is deviance; (ii) resentment is a complicated emotion that blends anger, spite, hatred, and bitterness. It might be expressed inwardly or outwardly, depending on the situation; and (iii) the medium correlation or co-occurrence between internalizing and externalizing problems in the present study is also a possible source. No matter what the reason is, the link between this ignored emotion and adolescent problem behavior deserves more attention.

For both the father and the mother, perceived threat had a significant mediating effect with psychosomatic symptoms, but not social withdrawal behavior. However, when perceived threat was entered alone rather than

Table 3 Betas from the hierarchical regression analyses for parent-child conflict, and negative emotions predicting externalizing problems

| Predictors | Violent aggression | | | Deviant behavior | | |
|---------------------------------|--------------------|----------|----------|------------------|----------|----------|
| | Father | | Mother | Father | | Mother |
| | Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 |
| Demographic control variables | | | | | | |
| Sex [†] | -0.15*** | -0.16*** | -0.19*** | -0.10** | -0.11** | -0.14*** |
| Father's education [‡] | -0.11* | -0.12** | -0.11** | -0.08 | -0.08* | -0.08* |
| Mother's education [‡] | -0.01 | -0.01 | 0.00 | -0.00 | 0.00 | 0.01 |
| Family Structure [§] | 0.07 | 0.06 | 0.05 | 0.10** | 0.10** | 0.09** |
| Parent-child conflict | | 0.28*** | 0.07 | | 0.28*** | 0.13*** |
| Negative emotions | | | | | | |
| Rage | | | 0.22*** | | 0.09 | 0.07 |
| Resentment | | | 0.11* | | 0.19*** | 0.23*** |
| Perceived threat | | | 0.07 | | 0.05 | 0.03 |
| Self-blame | | | -0.04 | | -0.09 | -0.09 |
| ΔR^2 | 0.04 | 0.08 | 0.10 | 0.03 | 0.08 | 0.05 |
| d.f. | 4/719 | 5/718 | 9/714 | 4/719 | 5/718 | 9/714 |
| ΔF | 7.25*** | 61.05*** | 14.72*** | 4.99*** | 62.12*** | 66.50*** |

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. [†]Sex is a dummy variable (1 = female, 0 = male). [‡]Education is an ordinal variable (1 = elementary school, 2 = middle school, 3 = high school, 4 = junior college, 5 = university, 6 = graduate school), but is treated as continuous in the regression model. [§]Family structure is a dummy variable (1 = single-parent family, 0 = two-parent family).

simultaneously with the other three mediators in Block 3 in the regression analysis, it had a significant mediating effect for both psychosomatic symptoms and social withdrawal behavior for the father (the Sobel test, $z = 5.48$ and 4.30 for psychosomatic symptoms and social withdrawal, respectively, both $p < 0.01$) and the mother ($z = 5.50$ and 4.82 , both $p < 0.01$), but its mediating effects for violent aggression and deviant behavior were not significant (the Sobel test, for father: $z = 1.92$ and 1.13 for violent aggression and deviant behavior, respectively; for mother: $z = 1.93$ and 0.99 , all $p > 0.05$). This result indicates that, as expected, the perceived threat did mediate the relationship between parent-child conflict and psychosomatic symptoms and social withdrawal, if the effect of the high correlation among the four type of emotional arousal on the mediating effect is removed. Using structural equation modeling, Yeh *et al.* (2010) showed that the more parent-child conflict adolescents report, the more threat they perceive, which in turn, leads to greater maladjustment in the adolescent, especially in terms of internalization. In that study, however, internalizing problems were represented by anxiety and depression, not by psychosomatic symptoms and social withdrawal, as in the present study. Both sets of findings together imply that a wide range of internalizing symptoms, regardless of whether they are emotion related or behavior related, can be triggered by perceived threat. In general, adolescents who still live with their parents after intense conflict might worry about gridlock or negative outcomes in their daily interactions with their parents (Adams & Laursen, 2001). Adolescents who are immature or overly dependent on their parents might lack proper coping strategies for handling conflict with them (Chiu *et al.*, 2002). In such cases, perceived threat is a risk factor linking conflict with internalizing problems.

As with perceived threat, when the mediators were entered alone rather than simultaneously in the regression analysis, self-blame significantly mediated the effect of the conflict on psychosomatic symptoms and social withdrawal for conflict both with the father (the Sobel test, $z = 3.54$ and 4.30 for psychosomatic symptoms and social withdrawal, respectively, both $p < 0.01$) and with the mother ($z = 3.82$ and 3.83 , both $p < 0.01$), but it did not mediate the relationship between conflict and violent aggression or deviant behavior (the Sobel test, for father, $z = 1.40$ and 0.19 , for violent aggression and deviant behavior, respectively; for mother, $z = 0.68$ and 0.12 , all $p > 0.05$). Self-blame was defined in terms of character. In previous studies, character-related self-blame was found to significantly correlate with depressive symptoms and feelings of helplessness in adolescents (Miller & Porter, 1983; Wu, 1996). The present study went further by showing that if adolescents are used to blaming themselves or feeling regret and guilt for conflict with their parents, when the conflict persists, such reactions can lead

to problem behavior, especially psychosomatic symptoms and social withdrawal.

The relation of sex to internalizing and externalizing problems was similar to that found in previous studies. Males had more serious externalizing problems, and females had more serious internalizing problems (cf. Broberg *et al.*, 2001; Ronnlund & Karlsson, 2006). Researchers have suggested possible links among attachment, sex, and internalizing problems in adolescents. For example, girls have a greater need for approval than boys, which suggests increased vulnerability to internalizing problems in girls (Calvete & Cardenoso, 2005). In addition, a lower education level for the father, which implies a low socioeconomic status (SES) for the adolescent's family, was significantly associated with adolescent internalizing and externalizing problem behaviors. This result reconfirms previous results indicating a relationship between low SES and adolescent problem behaviors (Aslund, Starrin, Leppert, & Nilsson, 2009; Boyle & Lipman, 2002). The medium correlation between internalizing and externalizing problems in the present study suggests that they frequently co-occur, a relationship also found by O'Connor, Neiderhiser, Reiss, Hetherington, and Plomin (1998). Such co-occurrence is a vulnerable condition for adolescent adjustment problems that can even lead to suicide (Sourander, Helstela, Haavisto, & Bergroth, 2001).

The present study has limitations. First, it shares with all questionnaire survey studies the problems of common method variance and social desirability response bias. These are most likely to influence participants' responses relating to the investigated variables, and thus might limit the predictive power of the results. Future research should include non-questionnaire or behavioral measures. Second, the use of cross-sectional data and the absence of experimental manipulation precluded assessment of causality or causal direction of the conflict-behavior relationship. In fact, there could be causality in both directions. The empirical findings suggested that adolescents with psychological symptoms are prone to a negative interpretation of their parents' behavior, thereby increasing conflict (Chan, 1998; Shek, 1998). Delinquency might be the source of parent-adolescent conflict (Shek & Ma, 2001). Further, an adolescent's personality might be a third variable contributing to both negative emotions in response to parent-child conflict and internalizing and externalizing problems. These issues should be further investigated in future research. This study controlled for sex in the mediating analyses. While sex might be a moderator of the relation between parent-child conflict and adolescents' negative emotions, which in turn leads to internalizing and externalizing problems, this issue needs further investigation in the future. Finally, various types of conflict might be differently related to each of the four negative emotions. Although this study did not test this question, it is an important issue worthy of future investigation.

Despite these limitations, this study has elucidated the processes underlying the effect of parent–child conflict on adolescent problem behaviors. It would also be useful to examine conflict between husbands and wives, rather than between parents and children, especially for certain cultures, such as US culture (Hsu, 1965), in which

the husband–wife dyad, rather than the parent–child dyad, is the major axis of family interaction. Information about the effects of these types of family conflict would facilitate the development of interventions aimed at improving family relationships and individual adjustment.

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