

Parental Behavioral Control, Parental Psychological Control and Parent-Child Relational Qualities: Relationships to Chinese Adolescent Risk Behavior

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Abstract Over three consecutive years, Chinese junior secondary school students responded to the measures of parenting (perceived behavioral control and perceived psychological control), parent-child relational qualities and adolescent risk behavior (substance abuse, delinquency, self-harm behavior, and suicidal behavior). Factor analysis showed that three distinct factors (namely parental behavioral control, parental psychological control, and parent-child relational qualities) were extracted from the father-child and mother-child relational measures, and good internal consistency among the items on the three factors was indicated. In line with the hypotheses, correlation and partial correlation analyses showed that parental behavioral control, parental psychological control, and parent-child relational qualities at Time 1 predicted adolescent risk behavior and their change at Time 3. Regarding the different contributions of fathers and mothers to adolescent risk behavior, results showed that maternal influence predicted changes in adolescent substance abuse and delinquency whereas paternal influence predicted adolescent deliberate self-harm and suicidal behavior over time.

Keywords Chinese adolescents • Parental behavioral control • Parental psychological control • Parent-child relational quality • Adolescent risk behavior

Introduction

Family has been considered to be important in the development of children and youth (Barker & Hunt, 2006). According to the ecological model (Bronfenbrenner, 1988), the development of individuals is influenced by the qualities and interactions between different systems. Among different systems, the dynamic and interaction

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effects arisen from different family processes, such as parenting and parent-child relationship, influence adolescent development deeply (Hepworth, Rooney, Rooney, & Strom-Gottfried, 2013).

In the parent-child dyad, parenting and parent-child relationship have been identified as important factors affecting adolescent development (Shek, 2008). Also, warmth and responsive parental control are important parenting dimensions. Generally speaking, there are two types of parental control (Barber, 1996, 2002; Steinberg, 1990). While parental behavioral control refers to “rules, regulations and restrictions that parents have for their children” (Smetana & Daddis, 2002, p. 563), psychological control refers to “parents attempt to control the child’s activities in ways that negatively affect the child’s psychological world and thereby undermines the child’s psychological development” (Smetana & Daddis, p. 563).

Parental behavioral control has been conceptualized and assessed based on the global dimensions such as demandingness (Maccoby & Martin, 1983), and specific dimensions such as knowledge and monitoring (Smetana & Daddis, 2002). Shek (2005, 2006, 2007) concluded the available research findings and argued that there are at least five different aspects of parental behavioral control. These included (a) how much the parent knows about the child (parental knowledge), (b) rules imposed and expectations of the parent (parental expectations), (c) parental surveillance and tracking (parental monitoring), (d) reward and punishment of the child (parental discipline), and (e) global parental control such as parental demandingness.

The parental psychological control refers to parental behaviors that include constraining verbal expression, invalidating feelings, personal attack, guilt induction, love withdrawal, and erratic emotional behavior. Barber (1996) pointed out that “although psychological control was included in some of the earliest conceptualization of parenting and continues to be implicit in much of the major work, focused attention to the construct has been lacking” (p. 3298) and that “there is little research specifically measuring psychological control and its covariates” (p. 3313). Barber and Harmon (2002) further showed that the relevant scientific literature does not suffice.

Although studies on behavioral control and psychological control have been carried out, few researchers have simultaneously included parent-child relational quality in their studies. In their review of the related studies in this area, Crouter and Head (2002) criticized that “many studies of parental monitoring or knowledge have examined possible antecedents without reference to the quality of the parent-child relationship” (p. 473) and argued that “it is impossible to conceptualize the possible antecedents of parental monitoring or parental knowledge without acknowledging that the quality of the parent-child relationship is the fundamental platform that gives rise to them” (p. 472). Although parent-child relationship is commonly used to reflect parent-child relational quality, different indicators have been proposed (Shek, 2007, 2008). These include parent-child relationship, parental trust of their children, children’s trust of their parents, children’s satisfaction with parental parenting, and readiness of the child to disclose to parents (Shek, 2007, 2008).

Shek (2005, 2006) suggested that three aspects of parent-child relational qualities are of particular importance. The first aspect is mutual trust between the parents

and their children. Shek (2010) found that parental trust of the children and children's trust of their parents were closely related to parental behavioral and psychological controls. However, there is a dearth of research on these two aspects in the existing literature. The second aspect is the readiness of the child to communicate with the parents. It can be inferred that as the child's readiness to communication increases, parental knowledge would also increase. Shek (2007) revealed that readiness of the child to communicate was related to parental behavioral control and psychological control. The third aspect is the child's satisfaction with parental control. For children who are more satisfied with parental control, they are also more willing to be socialized. Shek's (2007) study showed that children's satisfaction with parental control was related to parental behavioral control and psychological control.

Previous research has showed that parenting and parent-child relational qualities influence adolescent externalized behaviors, such as risk behaviors or delinquency (Dishion & Loeber, 1985). For example, Patterson and colleagues (Patterson, Capaldi, & Bank, 1991) disclosed that parental behavioral control may prevent adolescents from committing delinquent behaviors. Family researchers also reported that warm and responsive parental control predicts cooperative and appropriate behaviors, as well as social competence of adolescents (Booth, Rose-Krasnor, McKinnon, & Rubin, 1994; Hart, DeWolf, Wozniak, & Burts, 1992). However, excessive or inadequate behavioral control may lead to externalized problems of children and adolescents (Barber, Olsen, & Shagle, 1994).

Parent-child relational qualities also benefit adolescents' behavior. Good parent-child relationship and interaction provide nurture to children and youth as it gives them a solid emotional foundation based on secure attachment and positive interaction, which may further help them develop appropriate behaviors and competences as they grow up (Coates & Lewis, 1984; Greenberg, Speltz, & DeKlyen, 1993; Kochanska, Murray, & Harlan, 2000). A longitudinal study with the sample of 672 adolescents in 405 adoptive families was conducted to examine the relationship between adolescent behavior problems and parent-child relationship (Klahr, McGue, Iacono, & Burt, 2010). The results showed that poor parent-child relationship predicted adolescent behavior problems. As participants of this study are not genetically influenced by their adoptive parents, this study is likely to suggest that parent-child relational qualities influence adolescent risk behaviors. In contrast, poor parental monitoring and control might encourage adolescents to associate with deviant peers, and expose them to higher level of deviant behaviors (Smith & Krohn, 1995).

While parental behavioral control and good parent-child relational qualities have been identified as protective factors for adolescent risk behavior, parental psychological control might serve as a risk factor which can lead to an increase in adolescent risk behavior (Bean, Bush, McKenry, & Wilson, 2003). For example, results of the study conducted by Pettit and colleagues (Petti, Laird, Dodge, Bates, & Criss, 2001) revealed that a higher level of psychological control was associated with greater deviant behavioral problems of adolescents.

Parental control and parent-child relational quality are strongly related to adolescent substance abuse problem. According to previous studies, parental behavioral control is a protective factor to adolescent drug use (Brody & Forehand, 1993). Researchers

found that adolescents under poor parental behavioral control were more vulnerable to abuse drugs (Chassin, Pillow, Curran, Molina, & Barrera, 1993). In addition, researchers also found that parental psychological control was positively related to adolescent substance use. According to the study of Silk and colleagues (Silk, Morris, Kanaya, & Steinberg, 2003), psychological control predicts adolescent drug use and deviant behaviors. Furthermore, except parental control, poor parent-child relational qualities also predict the substance use among adolescents (Windlin & Kuntsche, 2012).

Regarding adolescent internalizing problems, previous studies showed that parent-child relational qualities were strongly associated with adolescent self-harm and suicidal behavior (Borowsky, Ireland, & Resnick, 2001; Tomori, 1999). According to the study of Hsu, Chen, and Lung (2013), parental bonding was a strong predictor of the intention to commit suicide or self-harm among adolescents. Also, a recent study (Consoli et al., 2013) revealed that adolescents with negative relationships with parents were more likely to commit suicide.

Parenting was also found to be related to adolescent suicidal behavior. For example, based on a longitudinal study, Johnson et al. (2002) found that negative parenting might induce the difficulties regarding inter-personal relationships for adolescents, which may result in the possibility of suicidal behavior. Furthermore, some researchers (Harrington et al., 1998; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005) examined the link between psychological control and adolescent well-being. Results of these studies showed that parental psychological control was one crucial factor of adolescent deliberate self-harm and depression. According to Bowen (1976, 1991), young people have to experience psychological separation from their parents and learn to build up their self-determination and independent thinking during adolescence. Adolescents who have experienced parental psychological control may fail to develop a better sense of self-determination and have difficulties in making appropriate decisions. As a result, these young people are more likely to have higher anxiety level and have different internalized problems.

Although much work has been done to examine the relationship between parenting and adolescent risk behavior (Bean et al., 2003; Huang et al., 2010; Petti et al., 2001), there are several limitations in the existing literature. First, while many studies have been carried out in the Western context, only a few studies are done in Chinese communities. Studies conducted in the Chinese cultural context are important because Chinese people constitute roughly one-fifth of the world's population. Second, there are few longitudinal studies in the field. Longitudinal studies can help researchers and frontline practitioners to understand the causality, stability, and continuity among different variables over time (Fok & Shek, 2011). In other words, more knowledge on the dynamic and reciprocal processes between parenting, parent-child relationship, and adolescent risk behavior are needed, because this can further benefit the service development in future. Third, there are few studies that simultaneously include multiple adolescent risk behaviors. In the present longitudinal study, several adolescent risk behaviors including substance abuse, delinquency, deliberate self-harm, and suicidal behavior are investigated. Finally, few studies have examined the relationship between parental control (behavioral control and

psychological control) and parent-child relational quality and adolescent risk behavior in a single study. Inclusion of these areas can give a more dynamic picture about the role of different family processes in adolescent development.

Against the above background, there are several objectives of this study. First, factorial validity and internal consistency of the measures of behavioral control, psychological control and parent-child relational quality for the father-child and mother-child subsystems were examined. Second, the relationships between the parent-child subsystem quality and adolescent risk behavior were examined. It is predicted that (a) paternal and maternal behavioral control would be negatively related to adolescent risk behavior over time (Hypotheses 1a and 1b); (b) paternal and maternal psychological control would be positively related to adolescent risk behavior over time (Hypotheses 2a and 2b), (c) father-child relational quality and mother-child relational quality would be negatively related to adolescent risk behavior overtime (Hypotheses 3a and 3b). Concerning the different contributions from fathers and mothers to adolescent risk behavior, there are two general predictions.

First, based on the theories and findings suggesting that mothers are more important than fathers (see Shek, 1999a), it is predicted that compared with the father-child subsystem quality, the mother-child subsystem quality would exert stronger influence on adolescent risk behavior (Hypothesis 4a). On the other hand, based on theories and research findings highlighting the important role of the fathers (see Shek, 1999b), it is predicted that father-child subsystem quality would exert a stronger influence on adolescent risk behavior than did mother-child subsystem quality (Hypothesis 4b). The findings reported in this article were derived from the Wave 1, Wave 2 and Wave 3 data of a longitudinal study on the psychosocial adjustment of adolescents in their junior secondary school years (Shek & Ma, 2012; Shek & Yu, 2012).

Method

Participants and Procedures

The present study is part of a 6-year longitudinal study on adolescent development and the data was derived from the first three waves of the project. Students from 28 secondary schools in Hong Kong participated in the study, and these schools were randomly selected from all the secondary schools in Hong Kong. For these 28 schools, students from all classes in Secondary 1 were invited to participate in the study in 2009/10 school year. In school year 2011/12, all Secondary 3 students in the selected 28 schools were invited to attend the third wave of survey. A total of 4,106 Secondary 3 students responded to the questionnaire (male=2,185; female=1,885; no indication of gender=36). The mean age of the participants was 14.65 years (SD=0.80). From Secondary 1 to Secondary 3, the data from 2,667 students was successfully matched, indicating an acceptable attrition rate of 19.8%. The procedures for collecting the data can be seen in Chap. 2 of the book and other publications of the project (e.g., Ma & Shek, 2013).

Instruments

Assessment of Parental Behavioral Control

Validated measures of parental behavioral control have been developed in previous studies by the first author (Shek, 2005, 2006, 2007). Because of time limitation in administering the questionnaires, items were selected to measure parental behavioral control based on the item-total correlation coefficients. Three aspects of parental behavioral control were covered in this study:

Paternal Knowledge and Maternal Knowledge: Two items were developed to assess paternal knowledge (“My father knows my situation in my school”; “My father clearly knows who my friends are”). Similar items were used to assess maternal knowledge. The total score of these two items was used as an indicator of the level of parental knowledge of the child’s behavior, with a higher score indicating a higher level of knowledge.

Paternal Expectation and Maternal Expectation: Two items were developed to assess paternal expectation (“My father expects me to have good behavior in school”; “My father has clear expectations about how I make friends”). Similar items were used to assess maternal expectations. The total score of these two items was used as an indicator of the level of parental expectation of the child’s behavior, with a higher score indicating a higher level of expectations.

Paternal Monitoring and Maternal Monitoring: Three items were developed to assess paternal monitoring (“My father actively understands my situation at school”; “My father actively understands my friends”, “My father actively understands my afterschool activities”). Similar items were used to assess maternal monitoring. The total score of these three items was used as an indicator of the level of parental monitoring of the child’s behavior, with a higher score indicating a higher level of monitoring.

Assessment of Parental Psychological Control

Four items were selected from the Chinese Paternal Psychological Control Scale (CPPCS) (e.g., “My father always wants to change my views and experiences”; “My father wants to control everything I do”). Similar items were used to assess maternal monitoring that formed the Chinese Maternal Psychological Control Scale (CMPCS). The total score of these items was used as an indicator of the level of parental psychological control of the child’s behavior, with a higher score indicating a higher level of psychological control. Previous studies showed that the CPPCS and CMPCS possessed good psychometric properties.

Assessment of Parent-Child Relational Qualities

Based on the measures of parent-child relational qualities used in previous studies (Shek, 2005, 2006, 2007), the items that assess the parent-child relation in the following two aspects were selected. First, three items on the respondent's satisfaction with paternal control (e.g., "My father's discipline of me is reasonable") were selected. Similar items were used to assess the respondent's satisfaction with maternal control. Second, two items on the father-child relationship ("I actively tell my father what happens to me"; "I actively share my experience with my father") were used to assess father-child communication. Similar items were used to assess the respondent's satisfaction with mother-child communication.

Assessment of Adolescent Risk Behaviors

- *Substance Use Scale (DRUG)*: Eight items were used to assess the participants' frequency of using different types of substance (i.e., alcohol, tobacco, ketamine, cannabis, cough mixture organic solvent, heroin, and pills such as ecstasy and methaqualone) during the past year. Participants answered on a 6-point Likert-scale (0=never; 1=1–2 times; 2=3–5 times; 3=more than 5 times; 4=several times a month; 5=several times a week; 6=everyday). A composite score was calculated by averaging all eight item scores in order to obtain the mean score on the overall substance use.
- *Delinquency Scale (DELIN)*: This scale comprises 12 items that assess the frequency of delinquent behavior of the participants in the past year, including stealing, cheating, truancy, running away from home, damaging others' properties, assault, having sexual relationship with others, gang fighting, speak foul language, staying away from home without parental consent, strong arm others, and break in others' places. Respondents rated the frequency of these behaviors in the past half a year on a six-point Likert-scale (0=never, 1=1–2 times; 2=3–4 times; 3=5–6 times; 4=7–8 times; 5=9–10 times; 6=more than 10 times).
- *Deliberate Self-Harm Behavior Scale (DSHS)*: This scale comprises 17 items that assess the occurrence of different deliberate self-harming behaviors of the participants in the past year such as cutting wrist and burning oneself. Respondents answered yes (coded as 1) or no (coded as 0) on these 17 items according to their actual behavior in the past year. A composite score of DSHS was calculated for each individual by averaging the 17 item scores, with higher score representing more self-harm behaviors.
- *Suicidal Behavior Scale (SBS)*: Participants' suicidal behaviors were measured by a four-item SBS in the three aspects: suicidal thought, suicidal plan, and suicidal attempt. A composite score of SBS was computed by averaging scores of item 1, item 2 and the recoded item 3, which represents for a general suicidal tendency of the participants.

Results

To measure the paternal factors (paternal behavioral control, paternal psychological control and father-child relational qualities items), we used a principal components analysis to extract the factors. The results showed that the three factors with eigenvalues exceeding unity explained 64.94 % in the variance of the paternal factors. Scree test showed that the three factors could be meaningfully extracted. Hence, varimax factor rotation was carried out. Factor I included the items on paternal behavioral control (item 1 to item 7). The second factor included the items on father-child relationship (item 8 to item 10, item 15 to item 17). The third factor included the items on paternal psychological control (item 11 to item 14). The factor solution can be seen in Table 1.

To test the maternal factors (maternal behavioral control, maternal psychological control and mother-child relational quality items), similar factor analysis (i.e., principal components analysis followed by varimax rotation) was conducted. The three factors explained 60.3 % in the variance of the maternal factors. Factor I was mother-child relational quality (item 8 to item 10, item 15 to item 17). The second factor included the items on maternal behavioral control (item 1 to item 7). The third factor included items on maternal psychological control (item 11 to item 14). The factor solution can be seen in Table 2. The findings gave support to the factorial validity of the measures of the quality of the father-child and mother-child subsystems.

Table 1 Varimax rotated factor solution based on measures of perceived paternal behavioral control, paternal psychological control and father-child relational quality based on the Time 1 data

		Paternal behavioral control	Father-child relational quality	Paternal psychological control
Item 1	My father knows my situation in school	.712	.384	-.003
Item 2	My father clearly knows who my friends are	.725	.341	-.009
Item 3	My father expects me to have good behavior in school	.502	.333	.230
Item 4	My father has clear expectations about how I make friends	.642	.174	.284
Item 5	My father actively understands my situation at school	.807	.236	.027
Item 6	My father actively understands my friends	.850	.194	.076
Item 7	My father actively understands my afterschool activities	.737	.261	.104
Item 8	My father's discipline of me is reasonable	.268	.811	-.057
Item 9	I am glad to do what my father expects me to do	.245	.821	-.014

(continued)

Table 1 (continued)

		Paternal behavioral control	Father-child relational quality	Paternal psychological control
Item 10	I believe my father’s discipline of me is good to me	.278	<i>.813</i>	.022
Item 11	My father always wants to change my views and experiences	.167	.265	<i>.661</i>
Item 12	My father puts more weight on his views than my views	-.039	-.158	<i>.814</i>
Item 13	My father wants to control everything I do	.059	-.208	<i>.825</i>
Item 14	My father always attempts to change me to reach his standard	.131	-.035	<i>.813</i>
Item 15	I am satisfied with the relationship with my father	.306	<i>.753</i>	-.135
Item 16	I actively tell my father what happens to me	.491	<i>.599</i>	-.052
Item 17	I actively share my experience with my father	.498	<i>.586</i>	-.045

Note: The highest loading obtained by a variable among the factors is in italics. Factor 1=Paternal Behavioral Control. Factor 2=Father-child Relational Quality. Factor 3=Paternal Psychological Control

Table 2 Varimax rotated factor solution based on measures of perceived maternal behavioral control, maternal psychological control and mother-child relational quality based on the Time 1 data

		Mother-child relational quality	Maternal behavioral quality	Maternal psychological control
Item 1	My mother knows my situation in school	.470	<i>.657</i>	-.039
Item 2	My mother clearly knows who my friends are	.460	<i>.664</i>	-.033
Item 3	My mother expects me to have good behavior in school	.261	<i>.635</i>	.142
Item 4	My mother has clear expectations about how I make friends	.166	<i>.677</i>	.263
Item 5	My mother actively understands my situation at school	.274	<i>.814</i>	-.002
Item 6	My mother actively understands my friends	.248	<i>.835</i>	.042
Item 7	My mother actively understands my afterschool activities	.290	<i>.740</i>	.031
Item 8	My mother’s discipline of me is reasonable	<i>.771</i>	.304	-.115
Item 9	I am glad to do what my mother expects me to do	<i>.805</i>	.243	-.019

(continued)

Table 2 (continued)

		Mother-child relational quality	Maternal behavioral quality	Maternal psychological control
Item 10	I believe my mother's discipline of me is good to me	<i>.781</i>	.298	-.003
Item 11	My mother always wants to change my views and experiences	.147	.142	<i>.750</i>
Item 12	My mother puts more weight on her views than my views	-.200	.008	<i>.843</i>
Item 13	My mother wants to control everything I do	-.194	.019	<i>.868</i>
Item 14	My mother always attempts to change me to reach her standard	-.037	.084	<i>.828</i>
Item 15	I am satisfied with the relationship with my mother	<i>.765</i>	.266	-.173
Item 16	I actively tell my mother what happens to me	<i>.755</i>	.318	-.033
Item 17	I actively share my experience with my mother	<i>.759</i>	.298	-.030

Note: The highest loading obtained by a variable among the factors is in italics. Factor 1 = Mother-Child Relational Quality. Factor 2 = Maternal Behavioral Control. Factor 3 = Maternal Psychological Control

Reliability analyses were carried out for the measures on paternal and maternal behavioral control (knowledge, expectations, monitoring and omnibus behavioral control), psychological control, parent-child relational qualities (satisfaction with parental control and readiness to communicate), and positive parent-child subsystem (behavioral control plus parent-child relational qualities items) at Time 1 and Time 3. As shown in Tables 3 and 4, the measures had good internal consistency reliability.

To understand the relationships between quality of the parent-child subsystem (behavioral control, psychological control and parent-child relational qualities) and adolescent risk behavior, two sets of analyses were performed (Table 5). First, bivariate correlations examined the relationship between Time 1 parent-child subsystem quality and Time 3 adolescent risk behavior. Second, partial correlation analyses examined the relationship between Time 1 parent-child subsystem quality and Time 3 adolescent risk behavior, controlling the effect of Time 1 adolescent risk behavior. Two observations can be highlighted from the findings. First, the hypotheses of the study were generally supported (i.e., positive parent-child subsystem quality predicted lowered adolescent risk behavior). Second, the effect size of the related correlation coefficients was not large.

To examine the relative influence of fathers and mothers on risk behavior and the change of risk behavior over time, multiple regression analyses were carried out (Table 6). According to the regression models, while both the paternal and maternal factors predicted substance abuse, delinquency and deliberate self-harm, only paternal factors predicted adolescent suicidal behavior. We also conducted the regression with the changes in risk behavior as the dependent variable. The results showed that

Table 3 Internal consistency reliability of the different measures within the father-child subsystem and mother-child subsystem at Time 1

Measure	Mean inter-item correlation	Mean item-total correlation	Coefficient alpha
Father-child measures			
PK	.713	.713	.832
PE	.516	.516	.680
PM	.676	.739	.862
SPC	.707	.766	.879
PPC	.500	.617	.801
FCR	.657	.729	.853
PBC	.538	.688	.891
PCRQ	.603	.792	.899
PPCS	.493	.674	.926
Mother-child measures			
MK	.754	.754	.859
MEXP	.520	.520	.676
MMON	.687	.749	.868
SMC	.715	.772	.882
MPC	.589	.695	.853
MCR	.687	.758	.870
MBC	.554	.700	.897
MCRQ	.626	.747	.907
PMCS	.508	.686	.930

PK Paternal Knowledge Scale, *PE* Paternal Expectation Scale, *PM* Paternal Monitoring Scale, *SPC* Satisfaction with Paternal Control, *PPC* Paternal Psychological Control, *FCR* Father-child Relationship, *PBC* Paternal Behavioral Control, *PCRQ* Father-Child Relational Quality, *PPCS* Positive Father-Child Subsystem, *MK* Maternal Knowledge Scale, *ME* Maternal Expectation Scale, *MM* Maternal Monitoring Scale, *SMC* Satisfaction with Maternal Control, *MPC* Maternal Psychological Control, *MCR* Mother-Child Relationship, *MBC* Maternal Behavioral Control, *MCRQ* Mother-child Relational Quality, *PMCS* Positive Mother-Child Subsystem

Table 4 Internal consistency of the different measures within the father-child subsystem and mother-child subsystem at Time 3

Measure	Mean inter-item correlation	Mean item-total correlation	Coefficient alpha
Father-child measures			
PK	.746	.746	.854
PE	.491	.491	.658
PM	.720	.776	.884
SPC	.729	.784	.890
PPC	.600	.703	.857
FCR	.682	.753	.868
PBC	.546	.694	.893
PCRQ	.615	.738	.904
PPCS	.500	.618	.928

(continued)

Table 4 (continued)

Measure	Mean inter-item correlation	Mean item-total correlation	Coefficient alpha
Mother-child measures			
MK	.757	.757	.861
MEXP	.552	.552	.707
MMON	.717	.774	.884
SMC	.724	.780	.887
MPC	.671	.762	.892
MCR	.686	.759	.870
MBC	.557	.703	.898
MCRQ	.623	.744	.906
PMCS	.494	.675	.926

PK Paternal Knowledge Scale, *PE* Paternal Expectation Scale, *PM* Paternal Monitoring Scale, *SPC* Satisfaction with Paternal Control, *PPC* Paternal Psychological Control, *FCR* Father-child Relationship, *PBC* Paternal Behavioral Control, *PCRQ* Father-Child Relational Quality, *PPCS* Positive Father-Child Subsystem, *MK* Maternal Knowledge Scale, *ME* Maternal Expectation Scale, *MM* Maternal Monitoring Scale, *SMC* Satisfaction with Maternal Control, *MPC* Maternal Psychological Control, *MCR* Mother-Child Relationship, *MBC* Maternal Behavioral Control, *MCRQ* Mother-child Relational Quality, *PMCS* Positive Mother-Child Subsystem

Table 5 Relationships between parent-child relational qualities measures and adolescent risk behavior

Measure	Substance abuse		Delinquency	
	T3	P3	T3	P3
Father-child measures				
T1 PBC	-.092***	-.040*	-.136***	-.028
T1 PPC	.043*	.025	.029	.012
T1 PCRQ	-.125***	-.071***	-.155***	-.043*
T1 PPCS	-.119***	-.059**	-.158***	-.039*
Mother-child measures				
T1 MBC	.115***	-.072**	-.130**	-.040*
T1 MPC	.064**	.041**	.048*	.010
T1 MCRQ	.156***	-.101***	-.167***	-.050*
T1 PMCS	.147***	-.094**	-.162***	-.049*
Measure	Deliberate self-harm		Suicidal behavior	
	T3	P3	T3	P3
Father-child measures				
T1 PBC	-.079***	-.049*	-.061**	-.023
T1 PPC	.043*	.031	.063**	.047*
T1 PCRQ	-.136***	-.088***	-.123***	-.070***
T1 PPCS	-.115***	-.074***	-.098***	-.050*
Mother-child measures				
T1 MBC	.074***	-.042*	-.038*	-.002

(continued)

Table 5 (continued)

Measure	Deliberate self-harm		Suicidal behavior	
	T3	P3	T3	P3
T1 MPC	.055**	.029	.099***	.072***
T1 MCRQ	.114***	-.056**	-.112***	-.066**
T1 PMCS	.103***	-.054**	-.081***	-.034

Note: T1 Time 1, T3 Time 3, P3 Partial correlation between Time 1 predictor and Time 3 outcome variable controlling for Time 1 measure

PBC Paternal Behavioral Control, PPC Paternal Psychological Control, PCRQ Father-Child Relational Quality, PPCS Positive Father-Child Subsystem, MBC Maternal Behavioral Control, MPC Maternal Psychological Control, MCRQ Mother-child Relational Quality, PMCS Positive Mother-Child Subsystem

*** $p < .001$; ** $p < .01$; * $p < .05$

Table 6 Relationships between parent-child subsystem factors at Time 1 (predictor variables) and adolescent risk behavior at Time 3 (criterion variable)

Dependent variable	Predictor variables	Beta	R ²
T3 DRUG	T1 PCS	-.066**	.024
	T1 MCS	-.115***	
T3 DELIN	T1 PCS	-.105***	.035
	T1 MCS	-.115***	
T3 DSH	T1 PCS	-.086***	.016
	T1 MCS	-.063**	
T3 SB	T1 PCS	-.080***	.011
	T1 MCS	-.040	
T3 DRUG	T1 DRUG	.374***	.159
	T1 PCS	-.022	
	T1 MCS	-.074***	
T3 DELIN	T1 DELIN	.450***	.217
	T1 PCS	-.021	
	T1 MCS	-.036a	
T3 DSH	T1 DSH	.360***	.143
	T1 PCS	-.058**	
	T1 MCS	-.025	
T3 SB	T1 SB	.318***	.11
	T1 PCS	-.043*	
	T1 MCS	-.010	

Note: T1 Time 1, T3 Time 3, DRUG Substance abuse, DELIN Delinquency, DSH Deliberate self-harm, SB Suicidal behavior, PCS Father-Child Subsystem, MCS Mother-Child Subsystem

*** $p < .001$; ** $p < .01$; * $p < .05$

while the negative mother-child subsystem quality at Time 1 predicted an increase in substance abuse and delinquency in Time 3, negative father-child subsystem quality at Time 1 did not. On the other hand, while negative father-child subsystem quality at Time 1 predicted an increase in deliberate self-harm and suicidal behavior in Time 3, the negative mother-child subsystem quality at Time 1 did not.

Discussion

The first research objective of this study was to examine whether the three aspects of the parent-child subsystem for fathers and mothers could be empirically established. With specific reference to the father-child subsystem, factor analysis clearly showed that three distinct dimensions emerged from the data – paternal behavioral control, father-child relational qualities and paternal psychological control dimensions (Table 1). Similarly, factor analysis revealed that three distinct dimensions emerged from the data also for on the mother-child dyad – maternal behavioral control, mother-child relational quality and maternal psychological control dimensions (Table 2). Reliability analyses showed that the scales that test the quality of the father-child subsystem and mother-child subsystem at Time 1 had good internal consistency reliability. These findings are generally consistent with the full version of the measures reported previously (Shek, 2006). The present study addresses the research problem identified by Shek (2002, 2010) that there is a lack of instruments that measures family and parenting processes in the Chinese cultural context. The findings also suggest that the adapted measures used in this study possess acceptable psychometric properties.

The present findings are consistent with the general parenting literature that positive parenting characteristics are related to better adolescent developmental outcomes (e.g., Shek, 1999b). Consistent with the findings of Rogers, Buchanan, and Winchell (2003), the present study also suggests that the behavioral control and psychological control of parents have different effects on adolescent development. Regarding parental control effects, the present study is consistent with the findings that parental behavioral control and parent-child relational qualities were negatively related to adolescent externalized behavioral problems, such as delinquency and risk behavior (Burt, McGue, Iacono, & Krueger, 2006; Eccles, Early, Frasier, Belansky, & McCarthy, 1997). The present findings are also consistent with the previous findings that parental psychological control contributed to adolescent internalized problems, such as depression and anxiety (Barber & Harmon, 2002) which would result in deliberate self-harm or suicidal behavior.

Regarding the research question on the relationship between parent-child subsystem qualities and adolescent risk behavior over time, the results generally supported the hypotheses (Hypotheses 1a, 1b, 2a, 2b, 3a and 3b). For adolescent substance abuse, different measures of the quality of the parent-child subsystem at Time 1 were related to substance abuse and the changes in it at Time 3. This finding is consistent with the previous research findings. In a recent longitudinal study, Wang et al. (2013) suggested that good parent-child relational qualities could facilitate children's disclosure of information which would eventually reduce the possibility of adolescent substance abuse. Other research also suggested that parental behavior control also has positive impact on preventing adolescent substance use (Fletcher, Steinberg, & Williams-Wheeler, 2004; Windlin & Kuntsche, 2012).

Regarding delinquency, with the exception of psychological control, different measures of the quality of the parent-child subsystem at Time 1 predicted delinquency and the change of it at Time 3. The present findings are consistent with previous studies (Bean, Barber, & Crane, 2006; Laird, Pettit, Bates, & Dodge, 2003) and they

further support the argument that parental behavior control and high quality of parent-child relationship can help to reduce adolescent delinquent behavior. The results also further corroborate Bradford et al.'s (2003) findings that maternal psychological control contributes to adolescent externalized behavioral problems.

Except for the parental psychological control, different measures on the quality of the parent-child subsystem at Time 1 predicted deliberate self-harm and the change of it at Time 3. These findings are consistent with the research suggesting that poor parent-child relationship is a risk factor for deliberate self-harm behavior (Crowell et al., 2008). In contrast, family cohesiveness (Webb, 2002) was shown to be a protective factor in adolescent deliberate self-harm. Finally, different measures on the quality of the parent-child subsystem at Time 1 predicted suicidal behavior at Time 3. Besides, psychological control and parent-child relational quality at Time 1 predicted adolescent suicidal behavior at Time 3. These findings are in line with the results of previous research (Soenens, Luyckx, Vansteenkiste, Duriez, & Goossens, 2008), which supports the argument that parental psychological control is positively related to adolescent suicidal attempts and actions, and high quality of parent-child relationship can promote the well-being of adolescent (Kwok-Lai & Shek, 2010).

The findings regarding the different influences of the father-child subsystem and mother-child subsystem support both Hypothesis 4a and Hypothesis 4b. While mothers influenced children's substance abuse and delinquency, fathers did not. It is noteworthy that substance abuse and delinquency are illegal activities (i.e., externalizing behavior). On the other hand, while fathers predicted change in deliberate self-harm and suicidal behavior (i.e., internalizing behavior), mothers did not. These results are consistent with previous findings (Gould, Shaffer, Fisher, & Garfinkel, 1998; Shek, 1998). For example, a longitudinal study revealed that the father-child relationship, rather than mother-child relationship, significantly affected the deliberate self-harm adolescent self-harm (Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008). In short, the present findings suggest that the influence of fathers and mothers on adolescent development is more complicated than we have expected. Shek (1999b) found that compared with mothers, fathers exerted a stronger influence on adolescent development. However, the present study suggests that the relative influences from fathers and mothers vary as a function of different developmental outcomes of children. The present findings suggest that two different pathways may be involved in the differential influence of fathers and mothers on adolescent internalized and externalized behavior.

From a theoretical perspective, the present findings underscore the importance of dyadic family processes in shaping adolescent risk behavior. Two practical implications can be drawn from the present findings. First, as parent-child subsystem attributes (parental control and parent-child relational qualities) influence adolescent risk behavior (Tables 3 and 4), the present findings suggest that there is a need to cultivate healthy parental control and parent-child relational quality processes so that adolescent risk behavior could be reduced. Second, to have a deeper understanding on how parent-child subsystem attributes influence adolescent development, further investigation on different adolescent risk behaviors, such as sexual risk behavior and Internet addiction is needed.

As there are few studies examining all the three parental factors simultaneously to predict of adolescent development (Gamambos, Barker, & Almeida, 2003), this

study is innovative, in particular in the Chinese cultural context. Despite the fact that the present study is pioneer in nature, several limitations should be noted. First, since parental control and parent-child relational qualities were only assessed from the child perspective, it would be useful to include data to reflect the point of view of the parents or outsiders to the family. Second, the present longitudinal study was conducted merely among Chinese adolescents in Hong Kong, and more research is needed to replicate the findings in other Chinese contexts. Third, only three time points were involved in this study. If more time points could be included, a more insightful understanding on the psychosocial development of Chinese adolescents would be developed.

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