Parental bonding and character strengths among Chinese adolescents in Hong Kong

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This study investigates the ways in which parental care and parental control affect adolescents’ character strengths in the areas of authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation. The basic premise is that these two parental bonding factors may have different effects on adolescent outcomes. To test this conjecture, we use survey data collected from a territory-wide sample of 2010 Chinese adolescents recruited from 17 secondary schools located in different districts of Hong Kong. The results support our hypotheses that parental care and parental control have significantly positive and negative effects, respectively, on the above character strengths. In addition, the results indicate that gender has significant effects on authenticity, bravery, kindness and love whereas age has significant effects on kindness and fairness. The implications of the findings for further research and service provision are discussed.

Keywords: character strengths; parental bonding; gender differences; Chinese adolescents

Introduction

In recent decades, the predominant conceptual framework for the scientific study of adolescent development has been one of ‘storm and stress’ (Steen, Kachorek, & Peterson, 2003). This deficit perspective on the characteristics of adolescence was based on a biological reductionist model of maturational determination and resulted in descriptions of youth as challenging and problematic (Benson, Scales, Hamilton, & Sesma, 2006). Nevertheless, beginning in the late 1990s and expanding in the early 2000s, research on adolescent development has been paying greater attention to the scientific study of the strengths and virtues that enable individual adolescents to thrive (Park & Peterson, 2006; Seligman, 2002). In particular, in 2004, the Values in Action (VIA) Institute completed a large-scale project in which 24 ubiquitously recognised and valued character strengths were identified through examining core virtues recognised across cultures and philosophical traditions throughout history (Peterson & Seligman, 2004).

According to the VIA Institute, character strengths are personality traits, which refer to psychological processes that define the specific aspects of personality that are morally valued (Park, 2004). These positive core characteristics of our personality are different from the strengths of our innate talents and abilities or the strengths of external resources and support. Although each of these areas of strength are important, character strengths provide a pathway for developing each of these areas. Operationalisation of this notion of character strengths has been carried out by the VIA Institute with the development of the...
Inventory of Strengths for Youth (VIA-Youth), a self-reported 198-item questionnaire to measure 24 strengths of character (Peterson & Park, 2009). The VIA-Youth has shown evidence of reliability and validity. For instance, it has been validated against self and other nomination of character strengths and has yielded significant correlations with measures of life satisfaction, global self-worth, social acceptance and adaptive functioning (Park & Peterson, 2006). From previous research, character strengths in adolescents have been associated with other desirable outcomes, such as subjective well-being, life satisfaction, fewer symptoms of depression and suicidal ideation, leadership, ability to delay gratification, altruism and a reduction in problems with substance use, alcohol abuse, smoking and violence (Gillham et al., 2011; Scales, Benson, Leffert, & Blyth, 2000).

Given the importance of character strengths in adolescent development, they have received increasing attention from the general public, policymakers, educators and parents (Berkowitz & Bier, 2004). However, there is little agreement about how these positive personality traits can be effectively nurtured. Hence, systematic research on key factors conducive to character strength development is needed to guide the development of effective character education programs. In this study, we draw on Bowlby’s attachment theory to investigate the effects of parental care and parental control on character strengths among adolescents, as the recent literature consistently confirms the importance of parental bonding in adolescent development (Rigby, Slee, & Martin, 2007). Specifically, this line of investigation contends that the quality of care provided by parents, particularly their sensitivity and responsiveness to children, leads to a secure or insecure relationship, which in turn predicts later development by setting in place adaptive or maladaptive life trajectories. As such, secure attachment offers a child the resilience required to manage stress and form positive, adaptive relationships with others (Ainsworth, Blehar, & Waters, 1978). In contrast, insecure attachment increases the risk of social and emotional difficulties, which can be as diverse as problems in self-regulation in infancy to peer rejection and anti-social behaviour in childhood and adolescence (Greenberg, 1996).

The empirical study of the relationship between parenting experiences and adolescent outcomes has been greatly facilitated by the development of reliable and valid measures of parental bonding. Although a variety of such measures have been developed, the parental bonding instrument (PBI) developed by Parker, Tupling, and Brown (1979) has been the measure most widely used. The PBI consists of 25 items and was developed to assess two principal dimensions of parental bonding, ‘parental care’, which is indicated by emotional warmth, empathy and closeness, as opposed to coldness, indifference and neglect, and ‘parental control or overprotection’, which is shown when parents are over-intrusive and controlling, thereby infantilising the child and preventing him or her from developing as an autonomous individual. A number of studies have investigated the reliability and validity of this instrument, with good results. For instance, PBI is psychometrically stable and has high test–retest reliability (Qadir, Stewart, Khan, & Prince, 2005). In addition, independent reports, parents’ own assessments and twin studies indicate that the instrument measures real experiences and not simply retrospectively projected qualities of the relationship with parents (Stewart et al., 2000).

Studies that use the PBI have found associations between reports of parental bonding and various measures of adolescent development. For example, a study conducted in Norway finds that students who report low levels of parental care and high levels of parental control are more likely to display symptoms of anxiety and depression in the General Health Questionnaire than other students (Pedersen, 1994). In Australia, students with comparatively low scores in the PBI measure of parental care and relatively high scores for parental control show evidence of elevated depression, suicidal thoughts and
self-harm (Martin, Bergen, Roeger, & Allison, 2004). In addition, a study of adolescents attending US schools finds that parental bonding characterised as ‘affectionless control’, a combination of low parental care and high parental control, is associated with psychiatric symptoms, including depression and phobic anxiety (Canetti, Bachar, Galili-Weissstub, De Nour, & Shalev, 1997). These studies show a consistent trend, suggesting that PBI factors are associated with poor developmental outcomes, including anxiety, depression, suicidal thoughts and delinquency.

Most studies of PBI factors and adolescent development have been conducted in Western cultures. Given that parenting is guided by socialisation goals and cultural values (Darling & Steinberg, 1993), to gain a more comprehensive understanding of the link between parental experience and adolescent development, it is necessary to investigate parental bonding patterns in different cultures. It should be noted that there are different views on the applicability of the Western-based PBI factors of parental care and parental control to other socio-cultural contexts. For example, Chao (1994) suggests that Chinese families score highly on the control dimension of parenting because control is considered an element of parental endearment and caring, rather than a negative attribute. In contrast, Lin and Fu (1990) note that in comparison with their Western counterparts, Chinese parents are somewhat more restrictive because of the greater degree of cultural endorsement of parental authority in China than that prevalent in Western countries. However, patterns of within-culture relationships between parental care, parental control and adolescent development in the Chinese context may be similar to those observed in Western societies. Given the above considerations, in the present study, we examine the connection between PBI factors and character strengths in a territory-wide sample of Chinese adolescents in Hong Kong to assess the applicability of Western dimensions of parental care and parental control and their effects on adolescent development.

Previous studies of PBI factors and adolescent development seem to have placed a greater emphasis on negative adolescent symptoms such as anxiety, depression and suicidal thoughts. Our study seeks to broaden the existing literature by adopting a more positive approach, focusing on the character strengths of young people and exploring ways in which such strengths can be nurtured (Benson, Mannes, Pittman, & Ferber, 2004). We use an index of eight character strengths adapted from the VIA-Youth to investigate the effects of parental bonding on the adolescent character strengths of (1) authenticity, speaking the truth and presenting oneself in a genuine way; (2) bravery, not shrinking from threat, challenge, difficulty or pain; (3) perseverance, finishing what one starts and persisting in a course of action in spite of obstacles; (4) kindness, doing favours and good deeds for others; (5) love, valuing close relationships with others; (6) social intelligence, being aware of the motives and feelings of self and others, and knowing what to do to fit in different social situations; (7) fairness, treating all people the same according to notions of fairness and justice; and (8) self-regulation, regulating what one feels and does, and being disciplined (Park & Peterson, 2006). Thus far, research into whether parental care and parental control constitute general risk factors or play different roles in terms of their effect on specific aspects of adolescent development is inconclusive (Pedersen, 1994). In this study, we examine the relative significance of these PBI factors in the development of character strengths. Drawing on past findings on parental care, parental control and character strengths, the following hypotheses emerge:

H1: Parental care has a positive relationship with adolescents’ character strengths.
H2: Parental control has a negative relationship with adolescents’ character strengths.
In testing these two hypotheses, it is necessary to control for the adolescent’s gender, as past research has shown a consistent pattern of gender differences in character strengths, parental care and parental control among adolescents. For instance, in a study of adolescents in the USA, Park and Peterson (2006) find differences between genders in terms of character strengths: girls score higher than boys for fairness and kindness but lower than boys for bravery, and these results are similar to their findings for adults. Regarding the PBI factors of parental care and parental control, Pedersen (1994) finds that Norwegian boys tend to perceive their parents as both less caring and more controlling than girls do. Likewise, in their study of Australian adolescents, Rigby et al. (2007) observe similar differences between boys and girls in their parental bonding. Given the consistent pattern of past findings on gender differences, in evaluating the effects of parental care and parental control on adolescents’ character strengths, we control for the effects of gender and other demographic variables.

Method

Sampling and data collection procedures

In this study, we use a survey design for which the data were collected via a structured questionnaire. The participants were Chinese adolescents (aged 11–20) recruited from 17 secondary schools located in different districts of Hong Kong. The sample selected was essentially a convenience sample. The choice of schools was influenced by the readiness of school personnel to facilitate our research. Parental consent was obtained after we had explained the purpose of the study and the procedure to be followed. There was no obligation to participate in the study and an assurance of confidentiality was given in a covering letter before recruitment. The questionnaire was administered in a single class session in which the participants were asked to complete the questionnaire anonymously before returning it to their teachers or our project assistants, who had been trained in the applicable administrative procedure. Of the 2015 adolescents invited to participate in the study, 2010 returned questionnaires. The response rate of 99.8% was considered satisfactory. All of the questionnaires returned were complete and could be used for data analysis.

Measures

The measures used in our study were adapted from the Chinese versions of the VIA-Youth and PBI questionnaires in the literature (Duan, Ho, Bai, & Tang, 2013; Liu, Li, & Fang, 2011; Parker et al., 1979; Peterson & Park, 2009). As the original VIA-Youth consists of 198 items measuring 24 character strengths, it created a great challenge in data collection, as school personnel only allowed us to implement the survey questionnaire in a single class session. We selected 69 out of the 198 items of the VIA-Youth to study eight character strengths, authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation, which according to previous studies were significantly associated with desirable adolescent outcomes such as subjective well-being, life satisfaction, leadership and altruism (Gillham et al., 2011; Scales et al., 2000). Each of the selected 69 VIA-Youth items was rated on a scale ranging from 1 (‘very much unlike me’) to 5 (‘very much like me’). The PBI used in this study is composed of 25 items, 12 parental care items and 13 parental control items, to measure parental bonding as perceived by adolescents (Parker et al.,
Each item of the PBI was rated on a scale ranging from 0 (‘very unlikely’) to 3 (‘very likely’). The aforementioned measures were pre-tested using a sample of 30 adolescents recruited from a secondary school. Feedback was also sought from five experienced social workers to enhance the applicability of the questionnaire to our research population. The reliability of each measure was assessed using Cronbach’s alpha. The final measures used in this study and their reliabilities are presented below.

**Authenticity**
This was the average score for eight items on the character strength of speaking the truth and presenting oneself in a genuine way. Sample items in this measure included ‘I always keep my word’ and ‘I lie to get myself out of trouble’. Scores for negative items were recoded and added to those of positive ones. (The same procedure was applied to all of the other character strength measures used to assess bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation, and for the PBI factors, including parental care and parental control.) The composite score for the eight items yielded an alpha reliability coefficient of .682.

**Bravery**
This was the average score for eight items on the character strength of not shrinking from threat, challenge, difficulty or pain. Sample items in this measure included ‘I speak up for what is right, even when I am afraid’ and ‘I don’t stand up for myself or others’. The composite score for the eight items yielded an alpha reliability coefficient of .654.

**Perseverance**
This was the average score for nine items on the character strength of finishing what one starts and persisting in a course of action in spite of obstacles. Sample items in this measure included ‘I keep at my homework until I am done with it’ and ‘If a task is hard, I give up easily’, The composite score for the nine items yielded an alpha reliability coefficient of .784.

**Kindness**
This was the average score for nine items on the character strength of doing favours and good deeds for others. Sample items in this measure included ‘When my friends are upset, I listen to them and comfort them’ and ‘When I hear about people who are sick or poor, I worry about them’. The composite score for the nine items yielded an alpha reliability coefficient of .746.

**Love**
This was the average score for nine items on the character strength of valuing close relationships with others. Sample items in this measure included ‘I often tell my friends and family members that I love them’ and ‘When I have a problem, I have someone who will be there for me’. The composite score for the nine items yielded an alpha reliability coefficient of .733.
Social intelligence
This was the average score for eight items on the character strength of being aware of the motives and feelings of self and others and knowing what to do to fit in different social situations. Sample items in this measure included ‘In most social situations, I talk and behave the right way’ and ‘I always know what to say to make people feel good’. The composite score for the eight items yielded an alpha reliability coefficient of .679.

Fairness
This was the average score for nine items on the character strength of treating all people the same according to notions of fairness and justice. Sample items in this measure included ‘In a group, I give easier tasks to the people I like’ and ‘Even when my team is losing, I play fair’. The composite score for the nine items yielded an alpha reliability coefficient of .607.

Self-regulation
This was the average score for nine items on the character strength of regulating what one feels and does, and being disciplined. Sample items in this measure included ‘I often lose my temper’ and ‘I can wait for my turn without getting frustrated’. The composite score for the nine items yielded an alpha reliability coefficient of .669.

Parental care
This was the average score for 12 items on the PBI factor of parental care. A high score on this measure reflects affection and warmth, whereas a low score indicates rejection or indifference. Sample items in this measure included ‘My parents spoke to me with a warm and friendly voice’ and ‘My parents could make me feel better when I was upset’. The composite score for the 12 items yielded an alpha reliability coefficient of .868.

Parental control
This was the average score for 13 items on the PBI factor of parental control. A high score indicates overprotection and prevention of independent behaviour, whereas a low score on this measure reflects allowance of independence and autonomy. Sample items in this measure included ‘My parents tried to control everything I did’ and ‘My parents felt I could not look after myself if they were not around’. The composite score for the 13 items yielded an alpha reliability coefficient of .787.

Demographics
The last section of the questionnaire comprised questions designed to elicit demographic data of the participants, including age, gender, educational level, household size, parental marital status, public assistance use and monthly family income. These background characteristics served as control variables in the regression analysis of character strengths.

Results
Table 1 shows the sample characteristics of the 2010 adolescents who participated in the study. Of the participants, 49.9% were males and 50.1% were females, and their average
age was 15 years. Sixty per cent of the participants had junior secondary (grades 7–9) and 40% had senior secondary (grades 10–12) educational qualifications. The majority of the participants (85.5%) lived in families with married parents, with 10.5% of the participants coming from divorced families. The average household size was three people and the median monthly family income was in the range of HK$10,001–30,000 (US$1283–3846). Approximately 7% of the participants received public assistance from the Hong Kong Government.

Table 2 provides the means and standard deviations for all of the variables used in the study. Authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and

| Variable            | Scale | Mean   | Standard deviation |
|---------------------|-------|--------|--------------------|
| Authenticity        | 1–5   | 3.34   | .57                |
| Bravery             | 1–5   | 3.23   | .56                |
| Perseverance        | 1–5   | 3.23   | .64                |
| Kindness            | 1–5   | 3.51   | .61                |
| Love                | 1–5   | 3.27   | .67                |
| Social intelligence | 1–5   | 3.39   | .59                |
| Fairness            | 1–5   | 3.34   | .51                |
| Self-regulation     | 1–5   | 3.44   | .57                |
| Parental care       | 0–3   | 1.88   | .53                |
| Parental control    | 0–3   | .97    | .45                |
self-regulation were the key outcome variables. Parental care and parental control were the key predictor variables. All of these variables had means around the midpoint of their scale ranges and had considerable degrees of variation. Essentially, the distribution of each of the outcome variables (i.e. authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation) resembled a normal curve, which made them suitable variables for regression analysis.

Simple correlations between the key variables provided a preliminary form of support for our hypotheses. The results showed that authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation had positive relationships with parental care ($r = .161 – .561$, $p < .01$) and negative relationships with parental control ($r = – .135$ to $– .299$, $p < .01$). Between the two key predictors, parental care had a negative correlation with parental control ($r = – .455$, $p < .01$). Hence, parental care and parental control were distinct from one another, despite their apparent similarity as measures of parental bonding. This moderate correlation indicated that a joint analysis of parental care and parental control through regression analysis was appropriate (Morrow-Howell, 1994) (Table 3).

A second form of preliminary support for the hypotheses emerged from the comparison of results for male and female respondents. In terms of parental bonding, girls scored higher than boys in parental care ($F = 1.93$ vs. $M = 1.84$, $p < .001$) but lower in parental control ($F = .92$ vs. $M = 1.01$, $p < .001$). These results are in line with our hypotheses on gender differences in parental care and parental control. Moreover, girls scored higher than boys for authenticity ($F = 3.49$ vs. $M = 3.37$, $p < .001$), kindness ($F = 3.61$ vs. $M = 3.40$, $p < .001$), love ($F = 3.35$ vs. $M = 3.19$, $p < .001$) and fairness ($F = 3.36$ vs. $M = 3.31$, $p < .05$), but lower than boys for the character strength measure of bravery ($F = 3.19$ vs. $M = 3.28$, $p < .001$). These gender differences in character strengths are generally consistent with previous research (Park & Peterson, 2006), although in our study, girls were observed to have higher scores in more character strength measures than boys (Table 4).

To test the hypotheses, a regression analysis was more appropriate when it was used to examine the predictors simultaneously and control for significant background characteristics through stepwise selection. The background characteristics included in the stepwise selection procedure were gender, educational level, parental marital status, monthly family income, public assistance use, age and household size (Table 1). The analysis generated three models for each of the eight outcome variables, by examining the effects of (1) background characteristics, (2) parental care and parental control without controlling for background characteristics and (3) parental care and parental control controlling for background characteristics. These three models gave a clearer picture of the apparent and independent effects of the background characteristics and the two key predictors on authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation.

Table 5 shows results that support Hypothesis 1. Adolescents who scored higher on parental care tended to report higher authenticity ($\beta = .237 – .249$, $p < .001$), bravery ($\beta = .133 – .137$, $p < .001$), perseverance ($\beta = .286 – .305$, $p < .001$), kindness ($\beta = .249 – .260$, $p < .001$), love ($\beta = .551 – .555$, $p < .001$), social intelligence ($\beta = .198 – .207$, $p < .001$), fairness ($\beta = .174 – .201$, $p < .001$) and self-regulation ($\beta = .140 – .155$, $p < .001$). Parental control was also predictive. Adolescents subject to higher levels of parental control experienced lower authenticity ($\beta = – .160$ to $– .164$, $p < .001$), bravery ($\beta = – .067$ to $– .076$, $p < .05 – .01$), perseverance ($\beta = – .067$ to $– .077$, $p < .05 – .01$), kindness ($\beta = – .058$ to $– .064$, $p < .05$), love ($\beta = – .050$ to
Table 3. Correlations between the key variables.

| Variable          | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Authenticity   | 1.000 |       |       |       |       |       |       |       |       |       |
| 2. Bravery        | .484**| 1.000 |       |       |       |       |       |       |       |       |
| 3. Perseverance   | .646**| .478**| 1.000 |       |       |       |       |       |       |       |
| 4. Kindness       | .501**| .548**| .469**| 1.000 |       |       |       |       |       |       |
| 5. Love           | .447**| .355**| .473**| .504**| 1.000 |       |       |       |       |       |
| 6. Social Intelligence | .451**| .425**| .454**| .460**| .485**| 1.000 |       |       |       |       |
| 7. Fairness       | .534**| .467**| .465**| .477**| .330**| .393**| 1.000 |       |       |       |
| 8. Self-regulation| .509**| .354**| .496**| .394**| .315**| .484**| .515**| 1.000 |       |       |
| 9. Parental care  | .321**| .161**| .336**| .285**| .561**| .272**| .274**| .235**| 1.000 |       |
| 10. Parental control| -.284**| -.135**| -.212**| -.187**| -.299**| -.242**| -.249**| -.249**| -.455**| 1.000 |

Note: **p < .01.
Thus, the findings generally support Hypothesis 2. Moreover, the effects of gender on authenticity ($\beta = .061$, $p < .05$), bravery ($\beta = .144$, $p < .001$), and self-regulation ($\beta = .165$, $p < .001$) were significant when parental care and parental control were included in the model. The results suggest that gender had an independent effect on authenticity, bravery, kindness, and love, although its effect was reduced by 37% on authenticity ($\beta$ changed from .097 to .061), 15% on kindness ($\beta$ changed from .170 to .144) and 44% on love ($\beta$ changed from .116 to .065) after controlling for parental care and parental control. Despite our initial finding that girls scored higher than boys on fairness, the effect of gender on fairness was not significant when parental care and parental control were included in the model. Thus, gender did not have an independent effect on fairness after controlling for parental care and parental control. Apart from gender, only one of the other background characteristics had a significant effect on character strengths when parental care and parental control were included in the model. Age had a negative relationship with kindness ($\beta = -.083$, $p < .05$) and fairness ($\beta = -.168$, $p < .001$). These findings indicate that older adolescents tended to score lower on kindness and fairness.

### Discussion

In the present study, we set out to examine the relationships between eight aspects of character strength to two principal dimensions of parental bonding (PBI factors), that is, parental care and parental control, among adolescents. This is the primary question examined in this study. The premise of our research is that parental care and parental control have different effects on character strengths and that they yield different adolescent outcomes. We used a survey design measuring parental care, parental control, authenticity, bravery, perseverance, kindness, love, social intelligence, fairness, and self-regulation from the perspectives of Chinese adolescents living in Hong Kong.

The results support the hypotheses that parental care has significant positive relationships with authenticity, bravery, perseverance, kindness, love, social intelligence, fairness, and self-regulation, and that parental control has significant negative relationships with the aforementioned character strengths. These conclusions reinforce previous findings that the PBI factors of parental care and parental control can be key determinants of adolescent development (Pedersen, 1994; Peterson & Seligman, 2004). As noted in
Table 5. Standardised regression coefficients for predicting authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation.

|                           | With background characteristics only | With parental care and parental control not controlling for background characteristics | With parental care and parental control controlling for background characteristics |
|---------------------------|--------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| **Authenticity**          |                                      |                                                                                      |                                                                                  |
| Parental care             | .249***                              | .237***                                                                              |                                                                                  |
| Parental control          | – .164***                            | – .160***                                                                             |                                                                                  |
| Gender                    | .097***                              | – .061**                                                                              |                                                                                  |
| Age                       | .015                                 | – .013                                                                               |                                                                                  |
| $R^2$                     | .023                                 | .126                                                                                 | .137                                                                             |
| Adjusted $R^2$            | .019                                 | .125                                                                                 | .132                                                                             |
| **Bravery**               |                                      |                                                                                      |                                                                                  |
| Parental care             | .133***                              | .137***                                                                              |                                                                                  |
| Parental control          | – .067*                              | – .076**                                                                             |                                                                                  |
| Gender                    | – .091***                            | – .111***                                                                             |                                                                                  |
| Age                       | .009                                 | – .008                                                                               |                                                                                  |
| $R^2$                     | .014                                 | .030                                                                                 | .047                                                                             |
| Adjusted $R^2$            | .010                                 | .029                                                                                 | .042                                                                             |
| **Perseverance**          |                                      |                                                                                      |                                                                                  |
| Parental care             | .305***                              | .286***                                                                              |                                                                                  |
| Parental control          | – .067*                              | – .077**                                                                             |                                                                                  |
| Gender                    | .046                                 | – .011                                                                               |                                                                                  |
| Age                       | .044                                 | – .034                                                                               |                                                                                  |
| $R^2$                     | .026                                 | .116                                                                                 | .130                                                                             |
| Adjusted $R^2$            | .022                                 | .115                                                                                 | .125                                                                             |
| **Kindness**              |                                      |                                                                                      |                                                                                  |
| Parental care             | .260***                              | .249***                                                                              |                                                                                  |
| Parental control          | – .064*                              | – .058*                                                                              |                                                                                  |
| Gender                    | .170***                              | – .144**                                                                             |                                                                                  |
| Age                       | – .093*                              | – .083*                                                                              |                                                                                  |
| $R^2$                     | .037                                 | .087                                                                                 | .113                                                                             |
| Adjusted $R^2$            | .033                                 | .086                                                                                 | .108                                                                             |
| **Love**                  |                                      |                                                                                      |                                                                                  |
| Parental care             | .551***                              | .555***                                                                              |                                                                                  |
| Parental control          | – .050*                              | – .060*                                                                              |                                                                                  |
| Gender                    | .116***                              | – .065*                                                                              |                                                                                  |
| Age                       | .007                                | – .040                                                                               |                                                                                  |
| $R^2$                     | .021                                 | .331                                                                                 | .339                                                                             |
| Adjusted $R^2$            | .017                                 | .330                                                                                 | .335                                                                             |
| **Social intelligence**   |                                      |                                                                                      |                                                                                  |
| Parental care             | .207***                              | .198***                                                                              |                                                                                  |
| Parental control          | – .149***                            | – .154***                                                                             |                                                                                  |
| Gender                    | .048                                 | – .015                                                                               |                                                                                  |
| Age                       | .018                                 | – .012                                                                               |                                                                                  |
| $R^2$                     | .013                                 | .093                                                                                 | .101                                                                             |
| Adjusted $R^2$            | .009                                 | .092                                                                                 | .096                                                                             |
| **Fairness**              |                                      |                                                                                      |                                                                                  |
| Parental care             | .201***                              | .174***                                                                              |                                                                                  |
| Parental control          | – .146***                            | – .160***                                                                             |                                                                                  |
| Gender                    | .055*                                | – .023                                                                               |                                                                                  |

(Continued)
previous studies (Bowlby, 1977; Greenberg, 1996), the contribution of inadequate parental bonding to future mental health is primary and may account for poorer character strengths. These researchers further suggest that the effects of the PBI factors are cumulative, a conjecture reflected by our findings on the significant effects of both factors on all of the character strengths. In terms of the relative effects of the two PBI factors examined here, the results indicate that parental care has a more significant association with the eight character strengths investigated than parental control. This echoes the observation of Burbach, Kashani, and Rosenberg (1989) that among the PBI factors, parental care has the strongest effect, a finding that coincides with those of other research (Kendler, Myers, & Prescott, 2000; Rigby et al., 2007).

As noted earlier, we also sought to investigate the cross-cultural applicability of the Western-based PBI factors by examining their connection with the character strengths of a territory-wide sample of Chinese adolescents in Hong Kong. Our results suggest that, among Chinese adolescents in the city, as among their Western counterparts, high parental control, whereby parents are over-intrusive and controlling, together with low parental care, indicated by coldness and indifference, tend to interfere with the autonomy of the child, resulting in negative attitudes towards the world and leading to poor character strengths. An important point to emphasise is that because Hong Kong is a Westernised metropolitan area, young people living in the city may have a greater orientation towards Western values and thus may strive to become more autonomous (Lau & Cheung, 1987; Ngai, Cheung, To, Liu, & Song, 2013). This suggests that our results may not be applicable to young people living in other Chinese communities, such as mainland China and Taiwan. Taken together, the results of our study and those conducted in Western contexts suggest a rapid change in the focus of Chinese socialisation patterns that involves a greater emphasis on quality parental care and greater child autonomy, features of the adolescent experience commonly found in the West.

Furthermore, the present study broadens the existing literature by adopting a positive approach to the examination of adolescent development that focuses on the strengths and virtues of young people (Benson et al., 2004). An index of character strengths consisting of authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation was devised to investigate the effects of parental bonding on adolescent development. The results of this investigation strategy show that low parental care and

Table 5. (Continued)

|                           | With background characteristics only | With parental care and parental control not controlling for background characteristics | With parental care and parental control controlling for background characteristics |
|---------------------------|-------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Age                       | -.159***                            | -                                                                                     | -.168***                                                                          |
| $R^2$                     | .032                                | .088                                                                                  | .111                                                                              |
| Adjusted $R^2$            | .028                                | .087                                                                                  | .106                                                                              |
| Self-regulation           |                                      | .155***                                                                               | .140***                                                                           |
| Parental control          |                                      | -.164***                                                                              | -.170***                                                                          |
| Gender                    | .017                                | -                                                                                     | .013                                                                              |
| Age                       | -.027                               | -                                                                                     | -.038                                                                             |
| $R^2$                     | .014                                | .074                                                                                  | .082                                                                              |
| Adjusted $R^2$            | .009                                | .073                                                                                  | .077                                                                              |

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

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high parental control were negatively associated with the indicators of character strengths that make up this index. Moreover, our findings have implications for the unanswered question of whether parental care and parental control constitute general risk factors or, alternatively, play different roles in that they affect specific aspects of adolescent development (Gillham et al., 2011; Pedersen, 1994). Given our observation on the significant associations of parental care and parental control with all of the character strengths studied, the two PBI dimensions should be thought of as non-specific risk factors. Unsettled parent–adolescent relationships can be related to poorer outcomes across a wide range of adolescent development indicators. In line with Enns, Cox, and Clara (2002), we conclude that these PBI factors, rather than acting as predictors of specific problems, can be used to portend a heterogeneous spectrum of adolescent outcomes (symptoms, abilities or strengths), and that the PBI, therefore, measures general risk factors for adolescent development.

Our findings on gender differences in parental bonding and character strengths are of interest. The participants’ responses to the PBI measures show that girls scored significantly higher than boys for parental care, but lower for parental control, which implies that girls have more positive relationships with their parents than boys. This result is consistent with existing literature (Pedersen, 1994; Shek, 2005), suggesting that gender differences in parenting experience may be a universal phenomenon, although the exact degree of such differences may vary greatly across cultural contexts.

In line with previous research (Park & Peterson, 2006), girls scored higher than boys for fairness and kindness but lower than boys for bravery, although in our study, girls were also observed to have higher scores than boys for authenticity and love. These differences in character strengths between boys and girls may be seen as evidence of evolutionary-based gender differences, whereby boys are supposed to be brave and girls are supposed to be kind and loving as a function of evolutionary selection (Swami & Furnham, 2008). However, our regression analysis results demonstrate that the significant effects of gender on authenticity, kindness, love and fairness were significantly reduced after controlling for parental care and parental control. In other words, although evolutionary-based gender differences may be a factor underlying the differences in authenticity, kindness, love and fairness between girls and boys in our study, the observed gender differences may also be an artefact of the effects of parental care and parental control. Our findings suggest that among Hong Kong Chinese adolescents, boys are more affected by negative parental treatment than girls. Nevertheless, a longitudinal panel study is required to examine this proposition and clarify the degree of variation across this population.

Our finding that older adolescents reported lower levels of kindness and fairness than their younger counterparts is consistent with the fluctuations in adolescent character strengths over time reported in earlier studies (Park & Peterson, 2006). This may reflect the effect of cognitive development from early to late adolescence on styles of self-assessment, although the literature has not yet provided a good explanation for differences in character strengths with age (Peterson & Seligman, 2004).

Further research
This study has several limitations. Our results are limited to a territory-wide convenience sample of Chinese adolescents in Hong Kong whose character strengths and development processes may differ from those of adolescents in other regions. Hence, to increase the generalisability of the results to other regions, it would be helpful if comparative studies
using probability sampling methods were conducted with similar groups of young people in different contexts.

This study focused on testing hypotheses on the effects of parental care, parental control and gender on adolescents’ character strengths. This leaves room for the investigation of alternative models using variables such as family relationships (Vander Ven, Cullen, Carrozza, & Wright, 2001) and peer networks (Holland, Reynolds, & Weller, 2007). Other means of extending the present study include conducting a longitudinal study examining the stages of character strength development among adolescents and using in-depth interviews and focus groups to collect qualitative data.

This study used authenticity, bravery, perseverance, kindness, love, social intelligence, fairness and self-regulation as the measures of adolescents’ character strengths. This list does not represent an exhaustive catalogue of character strength measures among young people. Adding other character strengths such as love of learning, open-mindedness and teamwork (Peterson & Park, 2009) as outcome measures could enhance the findings of this study and provide interesting insights into the effects of parental care and parental control.

**Practical implications**

A number of practical implications can be drawn from this study. The findings underscore the powerful effect parents have on the character strengths of their children. In particular, the quality of care provided by parents, especially their sensitivity and responsiveness to children, leads to a secure or insecure relationship that predicts character strength development. This suggests that educators and helping professionals should think about how they can educate parents about raising children and make parents more sensitive to children’s needs. Apart from lectures and printed material on child and adolescent development, our results point to the need for parents to review their own behaviour and understand how their actions can influence their children. The use of interactive and reflective methods, including group discussions, individual guidance and the use of diaries or logbooks, may constitute a more effective approach to character education programs for parents with adolescent children (Cheung, Lam, & Ngai, 2008).

Our observation that adolescent boys are more affected by negative parental treatment indicates a need to target intervention at parents with adolescent sons. Previous research (Chao, 1994; Chao & Tseng, 2002) has shown that male gender preference is a common phenomenon in Chinese societies and that Chinese parents therefore tend to have higher expectations of and exert more control over sons than daughters. In line with this, our findings on Chinese adolescents in Hong Kong suggest that this parenting practice has a cost in that it lowers authenticity, kindness, love and fairness among boys compared with girls. Accordingly, our results do not support the idea that the adolescent child’s character strengths will be fostered by harsh forms of control such as punitiveness or over-intrusiveness. Rather than adopting these controlling forms of parenting practice, parents should instead appreciate the importance of warmth, empathy, closeness, reasoning, monitoring and autonomy-granting behaviour, all of which encourage the development of character strengths, which ultimately allows youths to become functional members of society. Given the prevailing gender-based parenting practices adopted in many Chinese societies, such a change in child-rearing behaviour would be especially beneficial for male adolescents growing up in this socio-cultural environment.
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No potential conflict of interest was reported by the author.

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