

# Parenting Practices and Child Behaviour Problems in Hong Kong: Knowledge of Effective Parenting Strategies, Parenting Stress, and Child-Rearing Ideologies

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**Abstract** The present study examined the effects of knowledge of effective parenting strategies, parenting stress and Chinese child-rearing ideologies, on parenting practices and child behaviour problems among Hong Kong Chinese parents. Parents of children aged between 2 and 10 years were recruited through a selection of kindergartens and primary schools across Hong Kong. A total of 106 Hong Kong Chinese parents (76 % mothers and 24 % fathers) participated in the study by completing an online questionnaire. Parents ranged in age from 25 to 53 years ( $M=37.25$ ;  $SD=5.65$ ). Key outcome measures examined in the present study include parental nurturance, dysfunctional parenting and child behaviour problems. Findings revealed that parenting stress was the strongest predictor of parental nurturance, dysfunctional parenting and child behaviour problems. Chinese child-rearing ideologies did not predict any parental behaviour or child behaviour. The theoretical and practical implications of the findings are discussed.

**Keywords** Parenting strategies · Parenting stress · Child-rearing ideologies · Chinese

Parenting is a crucial factor influencing the behavioural and emotional development in children. Numerous studies have shown that children of parents who are warm and responsive are more likely to experience optimal child development outcomes (Baumrind 1991; Petito and Cummins 2000; Stephenson et al. 2005). Adverse family experiences, including family dysfunction, and harsh, punitive parenting have been associated with an increased risk of psychopathology in children (Chadwick et al. 2008). Knowledge of effective parenting strategies has been found to have greater predictive ability than knowledge of child development processes in terms of both parenting competence, parent psychopathology, and child behaviour problems in a study conducted with a non-clinical sample (Morawska et al. 2009). Previous findings

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have also suggested that parenting stress (Deater-Deckard 1998; Ponnet et al. 2013) and child-rearing ideologies (Chao 1994) can influence both parenting practices and child outcomes. The present study aims to examine knowledge of effective parenting strategies, parenting stress and the use of child-rearing ideologies among Hong Kong Chinese parents.

## 1 Knowledge of Effective Parenting Strategies

Knowledge of effective parenting strategies is a type of parental knowledge assessment based on the content of the Positive Parenting Program (Triple P; Sanders 1999), a prevention-oriented parenting and family support system, which has been shown to effectively reduce dysfunctional parenting by introducing positive and nonviolent childrearing practices based on social learning theories (Leung et al. 2003). In a study conducted by Winter et al. (2012a) on a nonclinical sample of Australian parents, knowledge of effective parenting strategies was negatively related to parenting dysfunction, parental anxiety and aversive child behaviour, and positively associated with parenting competence. However, there have been inconsistent findings on the relationship between knowledge of effective parenting strategies and child behaviour outcomes. Morawska et al. (2009) reported that the relationship between parenting confidence and dysfunctional parenting was moderated by knowledge of effective parenting strategies. Winter et al. (2012a) found that knowledge of effective parenting strategies was negatively related to internalized problematic behaviour in children, while another study by the same authors found that increased knowledge of effective parenting strategies did not significantly predict change in externalized child behaviour after participants had undergone Triple P (Winter et al. 2012b). Findings on the relationship between knowledge of effective parenting strategies and educational level have also been inconsistent. While Morawska et al. (2009) found a positive relationship between knowledge of effective parenting strategies and educational level, no such relationship was identified in the Winter et al. (2012a) study.

Parenting stress is the stress associated with the role of parents, arising when parenting demands exceed the expected and actual resources available to parents. Abidin and Burke (1978) identified two sources of parenting stress: the parents' characteristics and the child's characteristics. Specifically, parents with low functioning who have low parental competence, high depressive symptoms and poor marital relationship have been shown to exhibit higher parenting stress. On the other hand, parents who perceive their children as demanding, badly behaved and difficult to rear also experience higher parenting stress. Parenting stress has been widely investigated and is believed to increase the chance of dysfunctional parenting (Abidin 1990). Research shows that parents with high parenting stress tend to be less warm and responsive, and harsher and more negligent towards their offspring (Deater-Deckard and Scarr 1996; McBride and Mills 1994). Moreover, extensive evidence shows that parenting stress significantly predicts child behaviour problems (Crnic et al. 2005; Pett et al. 1994).

### 1.1 Chinese Child-Rearing Ideologies

Hong Kong is predominantly mono-ethnic and is known for being a largely collectivistic society with an emphasis on prioritising the needs of others over the self. This is in direct contrast with Western societies, known for being more individualistic with a prioritisation of the self over the needs of others (Triandis 1995). Due to its time as a British colony for more than a century, Hong Kong is a melting pot for Eastern and Western cultures. Child-rearing ideologies may differ from culture to culture. A study examining childrearing beliefs of Chinese and American mothers found that childrearing beliefs were affected by the mother's respective cultural view of the independent-interdependent self (Chao 1995). Chinese American mothers believed they should teach children to build good relationships with others because of the Chinese cultural emphasis on interdependence, while American mothers focused on the importance of enhancing self-confidence, assertiveness and self-serving in children because of the American cultural emphasis on independence. Influenced by traditional Chinese Confucian ideas, with a focus on parental authority and children's obedience, Chinese parents appear to be more restrictive, controlling and harsh than European parents (Su and Hynie 2011), which has been described as authoritarian parenting (Baumrind 1967). Authoritarian parenting style was found to result in aversive child outcomes, such as over-dependent, unconfident and anxiety in children of American samples (Baumrind 1967). One study showed that despite Chinese American parents using an authoritarian parenting style, their children did not show aversive outcomes, as was the case with their American counterparts who used authoritarian parenting style (Chao 1994). Instead, these children demonstrated high academic achievement and good parent-child relationships. In another study, although Chinese parents had higher levels of dysfunctional parenting, their children showed no difference in child behaviour problems when compared to their Western counterparts (Hulei et al. 2006). The aversive effects of punitive discipline on child behaviour problems were found to be moderated by Chinese child rearing ideologies "training" (Fung and Lau 2009) named by Chao (1994). Chao attributed Chinese parental control to training parents that they are responsible for governing and monitoring their children to instil self-discipline and socially desirable behaviour. Training also means providing a nurturing environment for the child's needs, which involves devotion and sacrifice, and is perceived to be a sign of parental warmth, responsiveness and involvement (Chao 1994). Chinese parents express their responsiveness in a reserved way instead of in a demonstrative way, for example, kissing and hugging, which are indicators of responsiveness to European and American parents. As a result, Chinese parents tend to be classified as authoritarian when assessed by scales developed by researchers in the West. Interestingly, one study using a sample of Mainland Chinese mothers confirmed the idea that parents who adhered strongly to Chinese cultural values highly exhibited both parental nurturance and dysfunctional parenting (Xu et al. 2005). The study examined a sample of Mainland Chinese mothers and their young children aged between 6 and 30 months and regression analyses revealed that mothers' adherence to Chinese values was associated with both authoritative and authoritarian parenting styles. Additionally, other characteristics, such as

perceived parenting distress, social support and educational level were also found to contribute to Chinese mothers' parenting styles (Xu et al. 2005).

## 1.2 Research Questions and Hypotheses

Due to cultural differences between Chinese and western style parenting, the profile of knowledge of effective parenting strategies may be different in a Chinese sample. So far, only a handful of studies examining knowledge of effective parenting strategies have been conducted, with these studies predominantly conducted in Western contexts (Morawska et al. 2009; Winter et al. 2012a, b). The generalization of the relationship between effective parenting strategies with parenting practices and child behaviour problems in a non-Western sample remains unclear. Thus, the aims of the present study are threefold:

1. To examine knowledge of effective parenting strategies among Hong Kong parents;
2. To examine and compare the influences of knowledge of effective parenting strategies, parenting stress and parents' adherence to Chinese child-rearing ideologies on parenting practices (specifically parental nurturance and dysfunctional parenting) in Hong Kong;
3. To examine and compare the influences of effective parenting strategies, parenting stress and parents' adherence to Chinese child-rearing ideologies on child behaviour problems in Hong Kong.

In relation to these aims, it is hypothesised that:

1. Knowledge of effective parenting strategies will be positively associated with parental income (H1).
2. Knowledge of effective parenting strategies will be negatively associated with dysfunctional parenting (H2).
3. Parenting stress will be negatively associated with parental nurturance (H3a), while being positively associated with dysfunctional parenting (H3b), and child behaviour problems (H3c).
4. Chinese child-rearing ideologies will be positively associated with parental nurturance (H4a), and dysfunctional parenting (H4b), while being negatively associated with child behaviour problems (H4c).

## 2 Methodology

### 2.1 Participants

Parents of children aged between 2 and 10 years were targeted. Parents were a convenience sample recruited through a selection of kindergartens and primary schools across Hong Kong. A total of 122 Hong Kong parents agreed to participate in the study. Only questionnaires having at least 80 % of each scale completed (Tabachnick and

Fidell 2013) by participants whose children fulfilled the age requirement were retained. Finally 106 valid questionnaires were collected. Of the 106 valid participants, 25 (23.6 %) fathers and 81 (76.4 %) mothers participated in the study. Parents ranged in age from 25 to 53 years, with a mean of 37.25 years ( $SD=5.65$ ). Children's ages ranged from 2 to 10 years, with a mean of 4.48 years ( $SD=2.23$ ).

## 2.2 Measures

The questionnaire comprised of the following seven sections:

### *Knowledge of Effective Parenting Strategies*

Knowledge of Effective Parenting Scale (KEPS; Winter et al. 2012a) was used to measure knowledge of effective parenting strategies. Suitable for parents of children aged 2–10 years, the scale covers four areas: promotion of development; principles of effective parenting; use of assertive discipline; and causes of behaviour problems. The KEPS contains 28 multiple-choice items, with each item having 4 possible responses. For example: “An environment which facilitates children's independent play is one where: a) There are lots of fun and interesting things to do; b) The parent sets up a number of structured activities; c) Parents spend a lot of time playing with children; and d) Children are expected to play independently”. The correct answer for this item is a), if the respondent answers this correctly they will earn one point. Total score ranges from 0 to 28. Higher scores indicate greater knowledge of effective parenting strategies. The internal consistency of the scale was  $\alpha=.60$  in the present study.

### *Parenting Stress*

The simplified Parenting Stress Index-Short Form (S-PSI-SF; Yeh et al. 2001) was used to measure parenting stress. The S-PSI-SF is a simplified version of the 36-item Parenting Stress Index-Short Form (PSI-SF; Abidin 1995) containing 15 items covering three subscales: parental distress (e.g., “I feel trapped by my responsibilities as a parent”), parent–child dysfunctional interaction (e.g., “Most times I feel that my child does not like me”), and difficult child (e.g., “My child makes more demands on me than most children”). Responses are on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). A total stress score ranging from 15 to 75 summarizes the three subscale scores. The higher the total score, the higher the parenting stress. The Chinese version of the S-PSI-SF has been validated by Yeh et al. (2001) with Cronbach's alpha coefficients larger than 0.80 for each subscale. The Cronbach's alpha coefficient of the overall scale was 0.87 in this study.

### *Chinese Child-Rearing Ideologies*

Chinese Child-Rearing Ideologies Questionnaire (CCIQ; Chao 1994) was used to measure parents' childrearing ideologies. The scale consists of 13 items covering two areas: ideologies on child development and learning (e.g., “Parents must train child to work very hard and be disciplined”), and ideologies on the parent–child relationship (e.g., “Parents should do everything for child's education and make many sacrifices”). Items are rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). A total score with a range from 13 to 65 is obtained by summing the scores of all 13 items. Higher scores demonstrate greater

adherence to Chinese child-rearing ideologies. The scale has been used previously with Mainland Chinese parents (Su and Hynie 2011), and attained internal reliability of  $\alpha=.82$ . The Cronbach's alpha coefficient of the overall scale was  $\alpha=.74$  in the present study.

#### *Parental Nurturance*

The Parenting Practices Questionnaire (PPQ; Robinson et al. 1995) contains 62 items assessing parenting styles (authoritative, authoritarian, and permissive). The PPQ is designed to examine three dimensions of parenting through 11 subscales. For the purpose of the present study, only the warmth and involvement subscale was used in order to measure parental nurturance (e.g., "I give comfort and understanding when child is upset"). Participants respond on a 5-point Likert scale ranging (1 = Never to 5 = Always). Summarizing the scores of all 11 items gives a total score (ranges from 11 to 55). A higher total score indicates a higher parental nurturance. The PPQ has been used in multiple cultural settings, and has also been used with a selection of subscales and has shown good validity and reliability. The internal consistency for the warmth and involvement subscale was very good ( $\alpha=.85$ ) in the present study.

#### *Dysfunctional Parenting*

The Parenting Scale (PS; Arnold et al. 1993) was used to measure dysfunctional parenting. The PS contains 30 items assessing three dysfunctional discipline styles: laxness ("If my child gets upset when I say "No"..." anchored by the following two strategies: "I back down and give in to my child" and "I stick to what I said" on both ends of the 7-point scale.), over-reactivity ("After there's been a problem with my child..." anchored by the following two strategies: "I often hold a grudge" and "things get back to normal quickly"), and verbosity ("When my child misbehaves..." anchored by the following two strategies: "I give my child a long lecture" and "I keep my talks short and to the point"). Items are rated on a 7-point scale anchored by one effective and one ineffective discipline strategy. A score of 1 indicates effective discipline and 7 indicates ineffective discipline. Some items are reverse scored. Total scores range from 1 to 7. A higher total score represents a higher degree of dysfunctional parenting. The reliability of the scale was acceptable in the current study ( $\alpha=.63$ ).

#### *Child Behaviour Problems*

The Strengths and Difficulties Questionnaire (SDQ; Goodman 1997) contains 5 subscales with 5 items per subscale: emotional symptoms (e.g., "Often unhappy, depressed or tearful"); conduct problems (e.g., "Often fights with other children or bullies them"); hyperactivity/inattention (e.g., "Restless, overactive, cannot stay still for long"); peer relationship problems (e.g., "Rather solitary, prefers to play alone"); and prosocial behaviour (e.g., "Considerate of other people's feelings"). Parents rate the items based on the extent to how true they describe the situation of their children (0 = Not true; 1 = Somewhat true; 2 = Certainly true). After reverse scoring selected items, total scores ranging from 0 to 30 are obtained by summing the scores of all three subscales; the higher the total score, the greater the child behaviour problems. In the present study, internal consistency of the SDQ was moderate ( $\alpha=.73$ ).

#### *Socio-demographic variables*

A number of items were included which related to participants' socio-

demographic information including, age, gender, marital status, age of children, educational level, monthly family income etc.

### 2.3 Procedure

The study received ethical approval (Ref: 51184459). As there was no Chinese version for the KEPS, PSI-SF, CCIQ, PPQ and the PS, these scales were translated into Chinese by a bilingual expert and then back-translated into English by a second bilingual expert. The research team then reviewed and finalized the translated Chinese versions of the scales. Those parents approached in kindergartens and primary schools across Hong Kong who expressed interest in the study were guided to a website for detailed information about the study. A consent form was posted on the website and parents participated after they submitted their informed consent. No reward was given for participation. Parents completed the cross-sectional questionnaire online. Parents with two or more children were asked to respond with regard to the child with the most serious behaviour problems. If there was no difference in behaviour, then answers were based on the experiences of parenting the youngest child. The questionnaire took around 20 minutes to complete.

### 2.4 Analysis

IBM SPSS Statistics 22 was used for the data analysis. Preliminary analyses were performed to ensure no violation of the assumption of normality by looking at histograms and normal probability plots. Descriptive statistics of parental characteristics and major variables were performed. Zero-order relationships between parents' major demographic characteristics and knowledge of effective parenting strategies, and between major variables were examined using bivariate Pearson correlations. To determine the predictive power of knowledge of effective parenting strategies, parenting stress and parents' adherence to Chinese child-rearing ideologies, three hierarchical multiple regression analyses were conducted with parental nurturance, dysfunctional parenting and child behaviour problems as the dependent variables. For each analysis, socio-demographic variables, including participants' age, educational level, and monthly family income were added to the first step, knowledge of effective parenting strategies, parenting stress and Chinese child-rearing ideologies were entered in the second, third and fourth steps respectively, so that the effects of each of these factors could be examined while controlling for the effects of other variables.

## 3 Results

### 3.1 Descriptive Statistics

Demographic characteristics of parents are shown in Table 1. The vast majority of parents were married (93.4 %), had an educational attainment of undergraduate degree or above (47.2 %) or secondary school (35 %), and monthly family income ranging from HK\$10,001 to HK\$50,000 (63.2 %). Parents demonstrated fair knowledge of

effective parenting strategies (range: 0–28;  $M=15.31$ ;  $SD=3.59$ ), while experiencing average levels of parenting stress (range: 15–75;  $M=35.54$ ;  $SD=9.24$ ). In terms of Chinese child-rearing ideologies, parents scored quite high (range: 13–65;  $M=39.16$ ;  $SD=6.58$ ), demonstrating a tendency towards use of Chinese child-rearing ideologies. The mean parental nurturance score of respondents was high (range: 11–55;  $M=46.57$ ;  $SD=5.22$ ), implying that parents in the present study displayed high levels of nurturing behaviour towards their offspring. Dysfunctional parenting scores were just above the mid-range (range: 1–7;  $M=3.49$ ;  $SD=0.42$ ), demonstrating a slight tendency towards dysfunctional parenting among the current sample of parents. However, reported child behaviour problems were very low (range: 0–30;  $M=8.17$ ;  $SD=3.47$ ), suggesting that low levels of child behavioural problems were observed by parents.

### 3.2 Correlations

Table 2 shows the zero-order correlations between major variables. Hypothesis 1 was supported in that there was a significant positive correlation between knowledge of effective parenting strategies and monthly family income. Family income was also significantly correlated with parents' age and education level. Greater knowledge of effective parenting strategies was associated with lower levels of parenting stress and adherence to Chinese child-rearing ideologies. Parenting stress and Chinese child-rearing ideologies were significantly positively correlated. Moreover, findings suggested that greater knowledge of effective parenting strategies and lower levels of stress were significantly correlated with higher levels of parental nurturance and lower levels of dysfunctional parenting. Chinese child-rearing ideologies were also

**Table 1** Demographic characteristics of sample ( $N=106$ )

	<i>n</i>
Marital status	
Cohabiting	2
Married	99
Divorced	4
Widowed	1
Education level	
≤Primary school	2
Secondary school	37
College	17
≥Bachelor degree	50
Monthly family income	
≤HK\$10,000	4
HK\$10,001–HK\$30,000	39
HK\$30,001–HK\$50,000	28
HK\$50,001–HK\$70,000	11
HK\$70,001–HK\$90,000	10
≥HK\$90,000	12
Unreported	2



**Table 2** Pearson correlations between major variables

Variable	1	2	3	4	5	6	7	8	9
1. Knowledge of effective parenting strategies	–	–0.24*	–0.27**	0.31**	–0.43**	–0.12	0.12	0.18	0.21*
2. Parenting stress		–	0.28**	–0.51**	0.43**	0.50**	0.13	–0.08	–0.04
3. Chinese child-rearing ideologies			–	–0.10	0.25*	0.03	0.09	–0.13	0.02
4. Parental nurturance				–	–0.42**	–0.42**	–0.02	0.13	0.27**
5. Dysfunctional parenting					–	0.41**	–0.12	–0.10	–0.25*
6. Child behaviour problems						–	–0.09	–0.06	–0.17
7. Age of parent							–	0.03	0.22*
8. Education level								–	0.49**
9. Monthly family income									–

\* $p < .05$ ; \*\* $p < .01$  (2-tailed)

significantly positively correlated with dysfunctional parenting. Finally, parental nurturance and dysfunction parenting were significantly negatively correlated.

### 3.3 Hierarchical Multiple Regression Analyses

Three hierarchical multiple regression models were conducted to examine predictors of parental nurturance, dysfunctional parenting, and child behaviour problems, respectively (see Table 3). For each model, socio-demographic variables including age, education, and monthly income were inserted into step one, knowledge of effective parenting strategies (KEPS) was inserted into step two, followed by the insertion of parenting stress (PS) into step three, and finally the addition of Chinese child-rearing ideologies (CCRI) into the fourth and final step. Prior to running the regression models, statistical assumptions for hierarchical regression were tested using the normality test to ensure that the data for the dependent variables was normally distributed.

### 3.4 Parental Nurturance

The first regression model examined predictors of parental nurturance, socio-demographic variables entered into step one of the model explained 8 % of the variance in parental nurturance. Following the entry of knowledge of effective parenting strategies into step two, the total variance explained by the model as a whole was 15 %,  $F(4/95)=4.28$ ,  $p < .01$ . Knowledge of effective parenting strategies accounted for an additional 7 % of the variance after controlling for age, education and income,  $\Delta R^2 = 0.08$ ,  $\Delta F = 8.49$ ,  $p < .001$ . Following the entry of parenting stress into step 3, the total variance explained by the model was 33 %,  $F(5/94)=9.33$ ,  $p < .001$ , meaning that parenting stress accounted for an additional 18 % of the variance after controlling for socio-demographic variables and knowledge of effective parenting strategies. Chinese child-rearing ideologies entered into the fourth and final step of the model was not a significant predictor of parental nurturance. After entering all variables, the model as a whole was significant,  $F(6/93)=7.82$ ,  $p < .001$ , and explained 34 % of the variance in

**Table 3** Predictors of parental nurturance, dysfunctional parenting and child behaviour problems

	Parental nurturance			Dysfunctional parenting			Child behaviour problems		
	Unstandardized		Standardized	Unstandardized		Standardized	Unstandardized		Standardized
	$\beta$	SE	$\beta$	$\beta$	SE	$\beta$	$\beta$	SE	$\beta$
<b>Step 1</b>									
Age	.09	0.09	-.10	-.002	0.01	-.03	-.02	0.06	-.02
Education	.01	0.45	.002	-.003	0.04	-.10	-.01	0.32	-.01
Income	.98	0.41	.28*	-.07	0.04	.23	-.33	0.29	-.14
$R^2$			.08			.06			.02
$\Delta R^2$			.08*			.06			.02
<b>Step 2</b>									
Age	-.11	0.09	-.12	.001	0.01	.00	-.01	0.06	-.02
Education	-.20	0.44	-.05	.02	0.04	.05	.04	0.32	.01
Income	.90	0.40	.25*	-.06	0.03	-.20	-.28	0.29	-.12
Knowledge of effective parenting strategies	.41	0.14	.28***	-.04	0.01	-.37***	-.13	0.11	-.13
$R^2$			.15			.19			.04
$\Delta R^2$			.08**			.13***			.02
<b>Step 3</b>									
Age	-.05	0.09	-.05	-.01	0.01	-.06	-.06	0.06	-.10
Education	-.24	0.39	-.06	.02	0.03	.06	.06	0.28	.02
Income	.89	0.36	.25**	-.06	0.03	-.20*	.26	0.25	-.11
Knowledge of effective parenting strategies	.24	0.13	.17	-.03	0.01	-.27***	-.02	0.10	-.02
Parenting stress	-.25	0.05	-.44***	.02	0.004	.38***	.19	0.04	.50***
$R^2$			.33			.32			.27
$\Delta R^2$			.18***			.13***			.23***
<b>Step 4</b>									

Table 3 (continued)

	Parental nurturance			Dysfunctional parenting			Child behaviour problems		
	Unstandardized		Standardized	Unstandardized		Standardized	Unstandardized		Standardized
	$\beta$	SE	$\beta$	$\beta$	SE	$\beta$	$\beta$	SE	$\beta$
Age	-.05	0.08	-.06	-.01	0.01	-.07	-.06	0.06	-.10
Education	-.19	0.40	-.05	.02	0.03	.07	.02	0.28	.01
Income	.86	0.36	.24*	-.06	0.03	-.22*	-.23	0.25	-.10
Knowledge of effective parenting strategies	.25	0.13	.18*	-.03	0.01	-.26**	-.04	0.10	-.04
Parenting stress	-.26	0.05	-.46***	.02	0.004	.36***	.20	0.04	.53***
Chinese child rearing ideologies	.05	0.07	.06	.01	0.01	.08	-.05	0.05	-.10
$R^2$			.34			.33			.28
$\Delta R^2$			.004***			.005***			.01***

SE standard error

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

parental nurturance. Hypothesis 2 predicted that knowledge of effective parenting strategies would be positively associated with parental nurturance; knowledge of effective parenting strategies significantly explained an additional 7 % variance in step 2 but became an insignificant predictor in step 3 of the model, although KEPS regained significance in the final step of the model, partially supporting Hypothesis 2. Hypothesis 3a predicted that parenting stress would be negatively associated with parental nurturance; parenting stress remained a significant negative predictor of parental nurturance throughout steps three and four of the model, thus fully supporting Hypothesis 3a. Hypothesis 4a posited that there would be a positive association between Chinese child-rearing ideologies and parental nurturance, this was not supported. Parenting stress was the strongest predictor of parental nurturance in the current model, explaining an additional 18 % variance.

### 3.5 Dysfunctional Parenting

The second regression model examined predictors of dysfunctional parenting, socio-demographic variables entered into step one of the model explained 6 % of the variance in dysfunctional parenting, although this was not significant. Following the entry of knowledge of effective parenting strategies into step two, the total variance explained by the model as a whole was 19 %,  $F(4/87)=5.09$ ,  $p<.001$ . Knowledge of effective parenting strategies accounted for an additional 13 % of the variance after controlling for age, education and income,  $\Delta R^2=0.13$ ,  $\Delta F=14.13$ ,  $p<.001$ . Parenting stress was entered into step 3, and the total variance explained by the model was 32 %,  $F(5/86)=8.13$ ,  $p<.001$ , meaning that parenting stress accounted for an additional 13 % of the variance after controlling for socio-demographic variables and knowledge of effective parenting strategies. The addition of Chinese child-rearing ideologies into the fourth and final step of the model did not prove to be a significant predictor of dysfunctional parenting. The model as a whole was significant,  $F(6/85)=6.85$ ,  $p<.001$  and explained 33 % of the variance in dysfunctional parenting. Hypothesis 2 predicted that knowledge of effective parenting strategies would negatively predict dysfunctional parenting. Hypothesis 2 was fully supported, with knowledge of effective parenting strategies retaining significance throughout the model and demonstrating negative association with dysfunctional parenting, as predicted. Hypothesis 3b predicted that parenting stress would be predictive of dysfunctional parenting. This was fully supported, with parenting stress retaining a significant positive association with dysfunctional parenting throughout the model. However, Hypothesis 4b was not supported as no significant association was identified between Chinese child-rearing ideologies and dysfunctional parenting. Parenting stress and knowledge of effective parenting strategies were both strong predictors of dysfunctional parenting, each explaining an additional 13 % of the variance in the model.

### 3.6 Child Behaviour Problems

The third and final regression model examined predictors of child behaviour problems, socio-demographic variables entered into step one of the model explained 2 % of the variance in child behaviour problems, although this was not significant. Following the entry of knowledge of effective parenting strategies into step two, the total variance

explained by the model as a whole was 4 %, although again this was not significant. Knowledge of effective parenting strategies accounted for only an additional 2 % of the variance after controlling for age, education and income,  $\Delta R^2=0.02$ ,  $\Delta F=.89$ ,  $p>.05$ . When parenting stress was entered into step 3, the total variance explained by the model was 27 %,  $F(5/90)=6.59$ ,  $p<.001$ , parenting stress accounted for an additional 23 % of the variance after controlling for socio-demographic variables and knowledge of effective parenting strategies. The addition of Chinese child-rearing ideologies into the fourth and final step of the model did not prove to be a significant predictor of child behaviour problems. After entering all the variables, the model as a whole was significant,  $F(6/89)=5.67$ ,  $p<.001$ , and explained 28 % of the variance in child behaviour problems. Hypothesis 3c posited that parenting stress would be predictive of child behaviour problems; parenting stress remained significantly positively associated with child behaviour problems throughout the model, thus Hypothesis 3c was fully supported. Hypothesis 4c predicted that Chinese child-rearing ideologies would have a negative association with child behaviour problems; this hypothesis was not supported. Parenting stress was the only predictor of child behaviour problems in the third and final regression model. Socio-demographic variables, knowledge of effective parenting strategies and Chinese child-rearing ideologies were not predictive of child behaviour problems.

#### 4 Discussion

The aims of the present study were to examine knowledge of effective parenting strategies in a Hong Kong sample, and to examine the predictive power of knowledge of effective parenting strategies, parenting stress and Chinese child-rearing ideologies on parental nurturance, dysfunctional parenting and child behaviour problems. Parents' monthly income was positively associated with knowledge of effective parenting strategies, consistent with previous findings (Morawska et al. 2009; Winter et al. 2012a), demonstrating similarities across cultures. It was hypothesized that knowledge of effective parenting strategies would be negatively associated with dysfunctional parenting. Findings from the present study supported this hypothesis; knowledge of effective parenting strategies was associated with lower reported levels of dysfunctional parenting. Parenting stress was also mediated by knowledge of effective parenting strategies. Based on one definition that parenting stress is dependent upon perceived available resources for parenting (Deater-Deckard and Scarr 1996); Mash and Johnston (1990) and Shriver (1998) have suggested that parents lacking adequate parenting knowledge may experience greater levels stress. In the present study, lack of knowledge of effective parenting strategies predicted parenting stress among Hong Kong parents, which is in line with previous findings from Western studies.

Knowledge of effective parenting strategies was not significantly associated with child behaviour problems, in line with previous findings (Morawska et al. 2009). Previous studies have found that after participating in Triple P, parents' reduction in dysfunctional parenting but not increase in parenting knowledge uniquely contributed to reduction in externalized child behaviour (Winter et al. 2012b), suggesting that dysfunctional parenting mediates the relationship between knowledge and child behaviour problems. In the current study, both relationship between knowledge of effective

parenting strategies and dysfunctional parenting, and dysfunctional parenting and child behaviour problems were significant. It seems reasonable that there are certain interactions between the knowledge and dysfunctional parenting in predicting child behaviour problems. Parenting stress was negatively associated with parental nurturance while being positively associated with dysfunctional parenting and child behaviour problems. Parenting stress has long been known as a critical factor influencing parent and child behaviour and makes stronger predictions than other types of life stress, in which, the effect of daily parenting hassles that every parent experiences is stronger than that of major parenting-related stressful events (Creasey and Reese 1996; Quittner et al. 1990). One study found that Hong Kong parents experiencing high levels of parenting stress reported higher levels of depression and anxiety than those parents with low parenting stress (Kwok and Wong 2000). Psychologically distressed parents have been shown to be more likely to use permissive or authoritarian parenting strategies (Fung et al. 2013). A recent longitudinal study showed a reciprocal relationship between parenting stress and child behaviour problems; that they were both the cause and consequence of each other (Neece et al. 2012). Thus, it is not surprising that there was a strong association between these two variables in the present study.

The final hypothesis: that Chinese child-rearing ideologies would be positively associated with both parental nurturance and dysfunctional parenting and negatively associated with child behaviour problems was partially supported. This is consistent with previous research that ideologies do not predict child behaviour problems (Hulei et al. 2006). However, Chinese child-rearing ideologies were also negatively associated with parental nurturance and dysfunctional parenting, although Chinese child-rearing ideologies were positively correlated with dysfunctional parenting. Again, Chinese child-rearing ideologies may have an indirect effect on dysfunctional parenting and such an effect may be mediated by other factors, such as knowledge of effective parenting strategies and parenting stress. Kwok and Wong (2000) explained that some Chinese child-rearing ideologies, such as parents taking responsibility for their children's academic performance, exerted extra stress on Chinese parents. Current findings showed a significant positive association between ideologies and stress, and a negative association between ideologies and knowledge. There is a possibility that ideologies affect stress or knowledge, which in turn affects parenting behaviour and child outcomes. Another possible explanation may be the mixed child-rearing ideologies of Hong Kong parents. As an international city, Hong Kong is highly influenced by both Chinese and Western cultures. Hong Kong parents are no exception, especially the present relatively well-educated sample. Parents' behaviour may have been affected by their adherence to both Chinese and Western child-rearing ideologies, and so the effect of either ideologies would be weakened. For example, the traditional Chinese belief that mothers should have a greater responsibility for taking care of the home and children (Wu 1996) may not be accepted by modern Hong Kong mothers, who think that they have the right to establish their own careers.

Besides parenting stress, family income was positively associated with parental nurturance, and negatively associated with dysfunctional parenting and child behaviour problems. Extensive studies have demonstrated that parents in low-income families tend to use less responsive, more permissive and harsher parenting strategies (McLoyd 1998; Mistry et al. 2002). One explanation is that affluent parents may have more resources to fulfil the demands of parenting, such as hiring domestic helpers, which

may alleviate their parenting stress. Also, these parents may have more resources to seek out parenting information, such as paying for courses teaching parenting skills.

The current findings suggest that parenting stress was a significant predictor of parenting practices and child behaviour problems, while knowledge of effective parenting strategies was associated with lower levels of dysfunctional parenting. Practical implications can be drawn from this study that family interventions and services should aim to alleviate parenting stress and increase knowledge of effective parenting strategies in order to reduce undesirable parenting practices and problematic child behaviour. Although parents from low-income families are at-risk in that they have relatively higher parenting stress and lower knowledge of effective parenting strategies, the suggested interventions and services are also important to the general population of Hong Kong parents. In such a competitive society as Hong Kong, where most families have both working parents, parents are likely to experience high levels of stress due to heavy workload and long working hours. Some studies have found spill-over across work-related stress to parenting-related stress (Barnett et al. 1992; Conger et al. 1995). Moreover, Hong Kong parents' belief that academic success brings a better future (Ho et al. 1989), plus the competitive education system in Hong Kong (Lam 1999) may exacerbate parenting stress among Hong Kong parents. Findings showed that the present Hong Kong sample of parents had less knowledge of effective parenting strategies than Western parents in other studies (Morawska et al. 2009; Winter et al. 2012a), regardless of educational attainment. This may suggest an insufficient education of effective parenting strategies in Hong Kong in general. Triple P is a parenting program targeting both universal and at-risk families to increase the parents' knowledge of effective parenting strategies (Sanders 1999). An outcome evaluation found the program effective in reducing dysfunctional parenting and child behaviour problems in a Hong Kong sample (Leung et al. 2003). However, the programme is not widely used in Hong Kong yet. The implement of Triple P together with stress management intervention would potentially be useful for many Hong Kong parents.

There are several limitations in the present study that must be addressed. First, this is a cross-sectional survey study, and as such the causality of variables could not be examined. Therefore, a longitudinal study is needed to investigate the causal relationships between the variables. Second, the use of a convenience sample makes generalization of the present findings difficult. It could be argued that the parents who voluntarily participated in this study are more likely to be those who care more about their parenting qualities. Many of the participants in the present study were relatively well-educated. Poorly educated and indifferent parents may be under-represented. A representative sample could make any findings more generalizable. Third, a self-report questionnaire was used in the present study, and only information from parents was collected. One problem of self-report data is inaccuracy due to social desirability. Parents may over-report parental nurturance but under-report their children's and their own behaviour problems. Another problem is that parents with high levels of stress may subjectively perceive their children as poorly behaved or vice versa (Crnic et al. 2005). The use of observational data or multiple informants would be preferable to maintain the objectivity of results. Another issue is related to the Cronbach's alpha of the knowledge of effective parenting scale, which at 0.60 was below the acceptability cut-off value of 0.70 (Nunnally 1978). This suggests that the inter-item reliability of this measure was low implying that correlation between the items in the effective parenting

scale was low. One reason for this could be cultural variation in parenting strategies, meaning that the scale may not be so appropriate for a Hong Kong population. Finally, the present study did not measure the total number of offspring. Parents with more children may experience more parenting stress which may affect parenting behaviour. Future studies should include this variable. Another limitation is that the present study did not record the gender of the child's behaviour being reported, which could potentially influence any reported behaviour problems. Despite these limitations, the present study extends the understanding of the effects of knowledge of effective parenting strategies in Hong Kong, and as such makes a meaningful contribution to knowledge of effective parenting strategies outside of the West.

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