

The Moderating Roles of Parenting Self-Efficacy and Co-parenting Alliance on Marital Satisfaction Among Chinese Fathers and Mothers

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Abstract Parenting stress has been found to negatively predict marital satisfaction for both fathers and mothers. While marital satisfaction was found to affect individual mental health, family functioning and child development, the various parenting correlates may buffer the association between parenting stress and marital satisfaction. This study aims to examine the relationship among the parenting correlates, namely parenting stress, parenting self-efficacy, co-parenting alliance, and marital satisfaction. A cross-sectional survey was conducted with a sample of 2029 fathers and 1430 mothers of children aged two to six recruited from 48 nurseries in Hong Kong. Hierarchical regression analysis showed that fathering self-efficacy and fathers' co-parenting alliance moderated the effect of fathering stress on fathers' marital satisfaction. However, there was no such moderating effect for mothers. Findings support the gender role model of the fathers being less of child carers than the mothers. The absence of such an effect for the mothers can be explained by their attainment of marital satisfaction from factors other than parenting.

Keywords Marital satisfaction · Parenting stress · Parenting self-efficacy · Co-parenting alliance · Gender differences

Introduction

Marital satisfaction refers to marital relationship quality that includes intimacy, companionship and consensus, and that is stable, harmonious, compatible and supportive (Wong and Goodwin 2009). In Chinese culture marital quality is related to the parent–child relationship and found to exert strong impact on parental well-being (Shek 1996). Marital satisfaction has positive effect on child development (Stutzman et al. 2009; Whiteman et al. 2007) and on the family functioning (Lindahl et al. 2004; Katz, and Woodin 2002). Marital quality had an indirect association with children's externalizing behavioral problems via harsh parenting (Chang et al. 2004). There was also a spillover effect of parenting on marital satisfaction among Hong Kong Chinese mothers (Kwok et al. 2013). Family functioning, including parent–child relationship, was related to couple relationships in the Chinese families as perceived by parents and children (Shek 2001). In the study of parenting variables significant relationships were found among parenting self-efficacy, parenting satisfaction and marital satisfaction (Elek et al. 2003; Hudson et al. 2001; Seigny and Loutzenhiser 2009). Marital relationship seems to have the most significant effect on parenting, and vice versa. Co-parenting alliance indeed plays multiple roles by predicting marital satisfaction for both spouses (Morrill et al. 2010). But few attempts have been made to examine the relationships of parenting stress, parenting self-efficacy and co-parenting alliance with marital satisfaction, not to mention the use of prediction or moderation models among them. These studies indeed point to the need for further investigation into parenting components such as parenting stress, self-efficacy and co-parenting alliance that affect marital satisfaction.

Marital quality was found to relate to differences in both parents and child behavior (Kerig et al. 1993). But whether

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and in what ways the parenting constructs contribute to marital satisfaction is not yet studied. Marital satisfaction being seen as emotional intimacy has been found to reduce parenting stress (Mulsow et al. 2002). Parenting stress can be defined in terms of everyday demands of caregiving, financial strain, and stress specific to parenting (Gerstein et al. 2009). Parenting self-efficacy refers to parents' perceptions of how capable they are in handling the offsprings' problem behaviors. It is a mechanism linking parents' beliefs and their sense of psychological well-being (Merrifield and Gamble 2013). Parents with a self-perception of high self-efficacy have reduced distress while lower parenting efficacy has been linked with divorce proneness that implies low marital satisfaction (Moore and Buehler 2011). However, in a study of stay-at-home fathers, parenting self-efficacy was found not related to marital satisfaction (Rochlen et al. 2008). There seems to be controversies in the association between parenting self-efficacy and marital satisfaction. Co-parenting alliance refers to the ways that parents relate to each other having shared responsibility for rearing particular children. It is linked to parental adjustment, parenting, and child adjustment (Feinberg 2003) with parental expressiveness as a moderator between marital relationship and co-parenting alliance (Kolak and Volling 2007). On one hand, a positive association is found between marital relationship and co-parenting quality (Morrill et al. 2010). Co-parenting alliance in terms of positive spousal communication and effective conflict resolution skills are found to improve marital relationship (Askari et al. 2012). On the other hand, marital hostility is found to be associated with hostile-competitive co-parenting (Katz and Gottman 1996). Though co-parenting alliance seems to play an important role in family relationships and processes, its association with marital satisfaction does not seem to have been adequately studied.

Parenting self-efficacy and co-parenting alliance may act as moderators. Fathering self-efficacy in childcare is found to be significantly related with paternal involvement (Jacobs and Kelly 2006). Parental self-efficacy also has a moderating effect on the association between social support and child development (Shumow and Lomax 2002). Parental self-efficacy was found to moderate the relationship between parental involvement and child outcomes (Hoover-Dempsey et al. 1992; Hoover-Dempsey and Sandler 1997). Co-parenting alliance is found to protect parenting quality and child adjustment from the negative effects of depression (Feinberg 2003). It appears to moderate the relationship between parental personal characteristics and parenting efficacy (Biehle and Michelson 2011) and between children illness and fathering stress (Frank et al. 1991). Whether co-parenting alliance and parenting self-efficacy serve as moderators on the

relationship between parenting stress and marital satisfaction is not considered though. There is a need for further investigation.

Previous literature has shown the close relationship between parenting correlates and marital satisfaction (Almeida et al. 1999; Finchman and Hall 2005; Floyd et al. 1998). Parenting correlates inevitably affects parent–child relationship that in turn has a significant impact on marital relationship (Kaczynski et al. 2006; Schoppe-Sullivan et al. 2004). Parent–child and spousal subsystems have mutual impact on each other. As parents tend to experience stress in childcare, their perception of parenting efficacy and the cooperation with the marital partners in parenting would affect the parent–child relationship and their marital relationship (Margolin et al. 2001). These two parenting constructs may have moderating effects on marital satisfaction with practice implications. A better understanding of the relationships between these variables will help practitioners in designing appropriate services for the families.

This study aims to examine the relationship among the parenting correlates, namely parenting stress, parenting self-efficacy, co-parenting alliance, and marital satisfaction. The hypotheses for this study are: that parenting stress is inversely associated with marital satisfaction (Hypothesis 1); that co-parenting alliance is positively associated with marital satisfaction (Hypothesis 2); that parenting self-efficacy is positively associated with marital satisfaction (Hypothesis 3); that parenting self-efficacy has a moderating effect on the relationship between parenting stress and marital satisfaction (Hypothesis 4); and that co-parenting alliance has a moderating effect on the relationship between parenting stress and marital satisfaction (Hypothesis 5).

Method

Participants

A cross-sectional survey was conducted for both mothers and fathers of children aged two to six were recruited by convenience sampling. Consent was obtained from the principals of the 48 nurseries in Hong Kong, and all participants gave their consents before taking part in this study. A total of 2029 questionnaires from fathers and 1430 questionnaires from mothers were collected; the return rate was 81.2 % which was satisfactory. The Research Ethics Sub-committee of the City University of Hong Kong has approved the human ethics review of this study. The mean age of the fathers was 39.2 years ($SD = 7.4$) while the mothers' mean age was 33.7 years ($SD = 5.1$). The mean household monthly income of the fathers was HK\$19,668 (US\$2528) and the mothers' was HK\$20,637 (US\$2652.6).

Table 1 Fathers' demographics ($N = 2029$)

Demographic variables	N (%)	M (SD)
Age		39.2 (7.4)
Household income		19,668 (17,375.7)
Below HK\$10,000	574 (28.3)	
HK\$10,000–29,999	1074 (52.9)	
HK\$30,000 or above	376 (18.5)	
Education level		
No formal education	12 (.6)	
Primary education (grade 1–6)	171 (8.4)	
Secondary education (grade 7–13)	1459 (72)	
Post-secondary education	360 (17.8)	
Employment status		
Full-time	1673 (82.5)	
Part-time	160 (7.9)	
Unemployed	96 (4.7)	
Housework	36 (1.8)	
Number of children		1.7 (.7)
1	854 (42.1)	
2	934 (46)	
3 or more	214 (10.6)	
Domestic helper		
With	255 (12.6)	
Without	1725 (85)	
Years married		8.2 (4.1)

Most of the fathers (82.5 %) were employed full-time; more than one third of the mothers (35.4 %) had full-time employment. The mean married years of the fathers was 8.2 (SD = 4.1) years and the mothers was 8.2 (SD = 4.2) years. Background information of the participants is listed in Tables 1 and 2.

Procedures

A focus group was held with eight mothers and eight fathers to collect their opinions and assess the reliability and understandability of the questionnaires, in which the questionnaires were revised accordingly. The purpose of this study was clearly explained and the questionnaires were only distributed to those who agreed to participate. The questionnaires are anonymous that the participant could not be identified. Lastly, a food coupon was given to every participant who has completed the questionnaire as a reward.

Measures

Except the Chinese versions of Parenting Stress Index, all the measuring instruments were conceptually translated to Chinese (Cantonese dialect) and then translated back to

English by two professional translators. An expert panel evaluated the content validity and cultural relevance of the scales, and all of them agreed and confirmed the validity and cultural relevance of the items. The panel consisted of five members who had more than 5 years of experience in providing social work or counseling services to parents.

Index of Marital Satisfaction

The Index of Marital Satisfaction (IMS) is a 25-item scale developed by Hudson (1997) to measure relationship satisfaction, rather than marital adjustment. Scoring follows a five-point Likert format, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Sample items are: “I feel that my partner treats me badly”, “I feel that ours is a very happy relationship”. After reversing the scores of some negative items, higher scores indicate higher level of perceived marital satisfaction. According to Hudson (1997), the scale has strong internal consistency ($\alpha = .96$), and temporal stability, with a test–retest correlation of .96 (Corcoran and Fischer 1987). The IMS also has excellent concurrent validity, correlating significantly with the Locke–Wallace Marital Adjustment Test. Reliability of the scale in the present study is excellent ($\alpha = .95$).

Table 2 Mothers' demographics ($N = 1430$)

Demographic variables	N (%)	M (SD)
Age		33.7 (5.1)
Household income		20,637.2 (16,653.5)
Below HK\$10,000	321 (28.2)	
HK\$10,000–29,999	561 (49.2)	
HK\$30,000 or above	258 (22.6)	
Education level		
No formal education	3 (.3)	
Primary education (grade 1–6)	70 (6.1)	
Secondary education (grade 7–13)	871 (76.4)	
Post-secondary education	196 (17.7)	
Employment status		
Full-time	719 (35.4)	
Part-time	207 (10.2)	
Unemployed	156 (7.7)	
Housework	826 (40.7)	
Number of children (mothers)		1.7 (.8)
1	481 (42.1)	
2	552 (48.5)	
3 or more	107 (9.4)	
Domestic helper (mothers)		
With	176 (15.4)	
Without	964 (84.6)	
Years married		8.2 (4.2)

Parenting Stress

The parenting stress of the participants was measured by the Parenting Stress Index-Short Form (PSI-SF) that was developed by Abidin (1995). It is a 36-item scale with three subscales, namely, parental distress (PD), parenting-child dysfunctional interaction (PCDI), and difficult child (DC) behavioral characteristics. Sample item included “I feel trapped by my responsibilities as a parent” (PD), “I expected to have close and warmer feelings for my child than I do and this bothers me” (PCDI), and “My child makes me demands on me than most children” (DC). The participants rated their extent of agreement by using a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores represent higher levels of parenting stress. It has Cronbach alpha reliability coefficient of .91 and test-retest reliability. This scale has very good reliability ($\alpha = .94$). Reliability of the scale in the present study is excellent ($\alpha = .95$).

Parenting Self-Efficacy

This study used the self-efficacy subscale in the Parenting Sense of Competency Scale (Johnston and Mash 1989). The subscale consists of seven items and attempts to explore the perceived abilities of the parents to deal with the

parenting practice. Sample items are: “I meet my own personal expectations for expertise in caring for my child”, “Being a parent is manageable, and any problems are easily solved”. Parents rated their level of agreement with each item by scoring a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate greater perceived self-efficacy. The scale has good internal consistency ($\alpha = .79$) and predicts both internalizing and externalizing behavior in children (Johnston and Mash 1989; Ohan et al., 2000). Reliability of the scale in the present study is good ($\alpha = .87$).

Co-parenting

The Parenting Alliance Inventory (PAI) is a 20-item scale that developed by Abidin and Brunner (1995). It measures the degree of the sense of co-parenting among couples by three subscales, namely, emotional appraisal of spouse's parenting, spousal confidence in own parenting, and shared philosophy and perceptions of parenting. Sample items included “My child's other parent makes my job of being a parent easier”, and “My child's other parent believes I am a good parent”. Scoring follows a five-point Likert format from 1 (strongly disagree) to 5 (strongly agree). Higher scores represent greater perceived parenting alliance. Abidin and Brunner (1995) reported that the scale has high internal consistency ($\alpha = .97$).

The PAI demonstrated convergent validity with measures of marital satisfaction, parenting stress, and parenting style. Reliability of the scale in the current study was excellent ($\alpha = .92$).

Demographics of Parents

Demographic data, for instance, parents' age, education, household income, employment status, married years, hiring of foreign domestic helper, and number of children were analyzed as covariates in the statistical analyses of the present study.

Data Analysis

The means, standard deviations, and Cronbach's alphas were computed. Then Pearson correlation analyses between demographic variables, independent variables [parenting stress (PS), parenting self-efficacy (PSE), and co-parenting alliance (CA), and dependent variable (marital satisfaction)] were carried out. To examine the moderating effect of parenting self-efficacy and co-parenting alliance on marital satisfaction, hierarchical regression analyses were performed. In the current study, two Models were computed for the fathers and mothers respectively. The first Model examined the moderation effect of parenting self-efficacy on marital satisfaction. The second Model investigated the moderation effect of co-parenting alliance on marital satisfaction.

The demographic variables (such as the parents' age, household income, education level, employment status, years married, number of children and hiring of foreign domestic helper) were entered as control in the first step. The independent variables (parenting stress and co-parenting

alliance or parenting efficacy) were entered in the second step to examine their contributions to parents' marital satisfaction after the effects of demographic variables were controlled. The interaction terms of PS \times CA, and PS \times PSE were entered in the final step.

Results

Descriptive statistics of different variables were presented in Tables 1 and 2. Pearson correlation analyses indicated that fathers' co-parenting alliance ($r = .62, p < .001$) and parenting self-efficacy ($r = .37, p < .001$) were positively correlated with fathers' marital satisfaction, whereas fathers' parenting stress ($r = -.53, p < .001$) was negatively correlated with fathers' marital satisfaction. Mothers' co-parenting alliance ($r = .69, p < .001$) and parenting self-efficacy ($r = .34, p < .001$) were positively correlated with mothers' marital satisfaction, while mothers' parenting stress ($r = -.49, p < .001$) was negatively correlated with mothers' marital satisfaction. A higher level of parenting stress showed a significant correlation with lower level of marital satisfaction whereas parenting self-efficacy and co-parenting are positively correlated with marital satisfaction for both parents (see Tables 3, 4, 5, and 6).

With reference to Table 4, prediction of demographic variables for fathers' and mothers' marital satisfaction was computed. Fathers' demographic variables were used to analyze fathers' marital satisfaction while mothers' demographic variables were used to predict mothers' marital satisfaction. In Model 1, fathers' education level ($\beta = .78, p < .05$), and number of children ($\beta = 1.11, p < .05$) were the significant positive predictors while employment status ($\beta = -2.3, p < .01$) was the significant negative predictor

Table 3 Mean, standard deviation, and Pearson correlations between fathers' demographic and parenting variables and marital satisfaction ($N = 2029$)

	1	2	3	4	5	6	7	8	9	10	11
1. Marital satisfaction	–										
2. Parenting stress	-.53***	–									
3. Co-parenting alliance	.62***	-.40***	–								
4. Parenting self-efficacy	.37***	-.37***	.47***	–							
5. Age	-.00	-.02	-.00	.06*	–						
6. Household income	.10***	-.12***	.10***	.07**	-.04	–					
7. Education level	.12***	-.15***	.12***	.11***	-.16***	.46***	–				
8. Employment status	-.11***	.09***	-.07**	.01	.10***	-.17***	-.20***	–			
9. Number of children	.05*	-.01	.01	.01	.19***	.08***	-.02	.05*	–		
10. Domestic helper	-.05	.07**	-.00	.00	.02	-.40***	-.30***	.09***	-.10***	–	
11. Years married	.03	-.06*	-.00	.02	.40***	.02	-.03	.04	.37***	-.06**	–
12. Mean	98.12	88.95	79.10	24.35							
13. SD	14.41	17.80	9.73	4.07							

*** Correlation is significant at the .001 level. ** Correlation is significant at the .01 level. * Correlation is significant at .05 level

Table 4 Mean, standard deviation, and Pearson correlations between mothers’ demographic and parenting variables and marital satisfaction (*N* = 1430)

	1	2	3	4	5	6	7	8	9	10	11
1. Marital satisfaction	–										
2. Parenting stress	–.49***	–									
3. Co-parenting alliance	.69***	–.40***	–								
4. Parenting self-efficacy	.34***	–.36***	.42***	–							
5. Age	–.04	–.06*	–.01	–.01	–						
6. Household income	.17***	–.13***	.12***	.02	.13***	–					
7. Education level	.12***	–.11***	.09**	.08**	.10***	.38***	–				
8. Employment status	–.07*	.10**	–.05*	.03	–.10**	–.48***	–.24***	–			
9. Number of children	.04	–.00	.03	.02	.19***	.01	.00	.11***	–		
10. Domestic helper	–.05	.07**	–.03	.02	–.17***	–.38***	–.28***	.32***	–.13***	–	
11. Years married	–.01	–.05	–.01	–.03	.51***	.05	–.02	.02	.39***	–.11***	–
12. Mean	96.1	86.6	77	24.6							
13. SD	16.7	18	11	3.9							

*** Correlation is significant at the .001 level. ** Correlation is significant at the .01 level. * Correlation is significant at .05 level

Table 5 Hierarchical regression analysis for the prediction of father’s marital satisfaction (*N* = 2029)

Step	Predictors	Fathers	
		Model 1	Model 2
1.	Demographics		
	Age	–.01	–.025
	Household income	2.93	3.16
	Education level	.78*	.72*
	Employment status	–2.3**	–2.5***
	Number of children	1.11*	1.02
	Domestic helper	.58	.67
	Years married	.10	.14
	ΔR ²	.02	.03
2.	Parenting stress (PS)	–7.25***	–7.25***
	ΔR ²	.27	.26
3.	Parenting self-efficacy (PSE)	2.87***	–
	Co-parenting	–	6.83***
	ΔR ²	.04	.19
4.	PS × PSE	.48*	–
	PS × co-parenting (CA)	–	–.38*
	ΔR ²	.002	.003

Two different interaction terms were entered in the two models predicting marital satisfaction: Model 1 and Model 2 predict father’s marital satisfaction. Model 1 = Father’s parenting stress × father’s parenting self-efficacy, and Model 2 = Father’s parenting stress × father’s co-parenting alliance

The interaction terms in step four were computed by Modprobe test *PS* parenting stress, *PSE* parenting self-efficacy

*** Correlation is significant at the .001 level. ** Correlation is significant at the .01 level. * Correlation is significant at .05 level

Table 6 Hierarchical regression analysis for the prediction of mothers’ marital satisfaction (*N* = 1430)

Step	Predictors	Mothers	
		Model 1	Model 2
1.	Demographics		
	Age	–.23*	–.24*
	Household income	.00***	.00***
	Education level	1.27*	1.2*
	Employment status	.24	.07
	Number of children	.73	.73
	Domestic helper	1.18	1.17
	Years married	.11	.08
	ΔR ²	.03	.03
2.	Parenting stress (PS)	–8.13***	–8.24***
	ΔR ²	.22	.23
3.	Parenting self-efficacy (PSE)	3.06***	–
	Co-parenting	–	9.63***
	ΔR ²	.03	.28
4.	PS × PSE	.74	–
	PS × Co-parenting (CA)	–	–.21
	ΔR ²	.00	.00

Two different interaction terms were entered in the two models predicting marital satisfaction: Model 1 and Model 2 predict mother’s marital satisfaction. Model 1 = Mother’s parenting stress × mother’s parenting self-efficacy, and Model 2 = Mother’s parenting stress × mother’s co-parenting alliance

The interaction terms in step four were computed by Modprobe test *PS* parenting stress, *PSE* parenting self-efficacy

*** Correlation is significant at the .001 level. ** Correlation is significant at the .01 level. * Correlation is significant at .05 level

of fathers' marital satisfaction. In Model 2, fathers' education level ($\beta = .72, p < .05$) and employment status ($\beta = -2.5, p < .01$) were the only significant predictors among all demographic variables. In Model 3 and Model 4, mothers' age ($\beta = -.23, p < .05$; $\beta = -.24, p < .05$, respectively), household income ($\beta = .000, p < .001$; $\beta = .000, p < .001$, respectively) and education level ($\beta = 1.27, p < .05$; $\beta = 1.2, p < .05$, respectively) were significant predictors of mothers' marital satisfaction.

Hierarchical regression analysis showed that the interaction terms were only significant in fathers' Models 1 and 2 (see Table 5). However, there was no significant interaction for mothers' Models (see Table 6). In Model 1, fathering stress and fathering efficacy were shown to be significant predictors of fathers' marital satisfaction and accounted for an additional 31 % of the variance of fathers' marital satisfaction. According to the Modprobe test, the interaction (fathering stress \times fathering efficacy) was significant ($\beta = .48, p < .05$), and accounted for additional .2 % of the variance of fathers' marital satisfaction. Hence, fathering efficacy moderated the effect of fathering stress on fathers' marital satisfaction (see Table 5). Fathers' marital satisfaction increased when the father had high fathering efficacy despite his high fathering stress. Result showed that fathers having high fathering efficacy reported higher level of marital satisfaction than fathers who have low fathering efficacy for the same level of fathering stress.

In Model 2, fathering stress and co-parenting alliance were shown to be significant predictors of fathers' marital satisfaction and accounted for an additional 45 % of the variance of fathers' marital satisfaction. According to the Modprobe test, the interaction (fathering stress \times co-parenting alliance) was significant ($\beta = -.38, p < .05$), and accounted for additional .3 % of the variance of fathers' marital satisfaction. Hence, co-parenting alliance moderated the effect of fathering stress on fathers' marital satisfaction (see Table 5). Fathers' marital satisfaction increased when the father had high co-parenting alliance despite his high fathering stress. Result indicated that fathers having high co-parenting alliance reported higher level of marital satisfaction than fathers who have low co-parenting alliance for the same level of fathering stress.

Discussion

As hypothesized, results showed that parenting stress was a significant negative predictor of marital satisfaction, while parenting self-efficacy and co-parenting alliance were significant positive predictors of marital satisfaction. This applies to both the fathers and mothers, thus supporting hypotheses 1, 2 and 3. However, this research showed the moderating effects of fathering self-efficacy and co-

parenting alliance for the fathers in the association between fathering stress and marital satisfaction. However, mothering self-efficacy and co-parenting alliance for the mothers were not found to moderate the association between mothering stress and marital satisfaction. In other words, the effects of parenting self-efficacy and co-parenting alliance in the association between parenting stress and marital satisfaction differ between fathers and mothers. Hypotheses 4 and 5 are thus supported for fathers only.

To explain the differences between fathers and mothers in this regard, it would be necessary to look into how the parents experience parenting self-efficacy and co-parenting alliance. There are gender-typed patterns of family interaction in each family (Lindsey and Caldera 2006). For the fathers, parenting self-efficacy has to be developed through childcare involvement. Fathers in general are less involved in childcare than mothers (England and Folbre 2002). Chinese fathers in Hong Kong tend to maintain their provider role in the family in relation to societal expectation. The more educated fathers nonetheless are aware of the importance of their childcare involvement, partly because of the mothers' rising economic status, and partly because they become more willing to involve than their own fathers. When they get involved in childcare they develop fathering self-efficacy. As they feel more competent in childcare they get more involved. The children reciprocate with trust, respect and affection such that the fathers get more satisfaction from childcare. Fathering self-efficacy when developed reduces fathering stress notably when the children respond positively to the father as carer. The fathers feel good with the marital relationship as they gain self-efficacy and are able to handle parenting stress. The emotions and accompanying behavior are transferred from parenting to marriage. The spillover effect then takes place with the fathers feeling satisfied with childcare thereby getting marital satisfaction (Katz and Gottman 1996). Fathering self-efficacy thus helps to moderate the association between fathering stress and marital satisfaction.

In contrast, the mothers are more emotionally connected to their children and willing to spend time with the children. Generally mothers are expected to provide more practical care than are fathers even though they have stress (Barnett et al. 1994). Mothers' parenting self-efficacy may be eroded by interactional difficulties such as parent-child conflict when they have more contact with the children (Raver and Leadbeater 1999). Parenting self-efficacy may help decrease parenting stress, but may not increase marital satisfaction in mothers. Women derive their marital satisfaction from intimacy and affection with their husbands when under stress, but not from parenting satisfaction. This may help to explain why mothers' parenting self-efficacy did not have any moderating effect on the association between parenting stress and marital satisfaction.

Co-parenting alliance shows the way the parents work together in childcare. In contemporary Chinese families in Hong Kong, parental involvement is a dynamic process subject to negotiation because it demands time, money and emotional efforts. So very likely parents would get involved according to their perceptions of their own needs, the children's needs and what the other parent should and could provide. Gendered norms still constrain modern fathers as tasks such as bathing, feeding, and soothing children are generally considered women's work. The division of labor in childcare may take the form of mothers doing the basic tasks while the fathers being available in the home. The fathers are unlikely to assume the major childcare role in an intact family (Pleck 2010).

The fathers tend to play a secondary role in childcare because of work demands, lack of rewards and recognition from childcare. They fill in the childcare role only when they are needed (Lewis 1997). Co-parenting alliance in essence means the fathers getting support from the mothers in the mother-father-child triadic relationship. The mothers can facilitate the fathers' childcare involvement because the mothers are the primary carers. Mothers' perceptions of greater paternal involvement predict greater fathering self-efficacy and marital satisfaction in fathers (Tremblay and Pierce 2011). While the fathers may be good at playing with the children, they would need guidance from the mothers in childcare tasks. The fathers gain a sense of satisfaction as the mothers support the fathers' childcare involvement. The positive feelings of allying with the mothers in childcare spill over to greater marital satisfaction of fathers [Kwok et al. 2012]. Indeed fathers report tension spillover from marriage to parent-child relationship more likely than mothers, due to their physiological arousal and amount of time spent on childcare (Almeida et al. 1999). Spillover is found from parenting correlates to Chinese mothers' marital satisfaction (Kwok et al. 2013) and differences are found in spillover effect between fathers and mothers (DeMaris et al. 2013).

In short, fathering self-efficacy and co-parenting alliance are found to be moderators in the association between parenting stress and marital satisfaction for the fathers, but not for the mothers. This can be attributed to the fathers' secondary childcare role in the family. The mothers experience differently from the fathers because they are the primary child-carers. Even though they have high mothering self-efficacy and co-parenting alliance, this cannot moderate the impact of high parenting stress on marital satisfaction. Some other variables like intimacy, love, affection, social support, communication, conflict resolution, and others may have better moderating effects on marital satisfaction (Jenseu et al. 2013; Rosand et al. 2012; Mickelson et al. 2006). This needs further exploration.

How do women derive their marital satisfaction when under stress? The complex interactions between mothers

and their children reduced their parenting self-efficacy beliefs and the mothers expressed negative emotions which were translated into hostile parenting behaviors (Murdock 2013). This helps to explain partially why parenting self-efficacy does not moderate the association between parenting stress and marital satisfaction. Indeed for the Chinese women their tolerance towards stress could be their belief in establishing their place in the family. Love for spouse was associated with lower parenting stress for mothers (DeMaris 2013). Moreover, the husbands' childcare performance may be less significant than their availability and sense of commitment towards the children's well-being (Futris and Schoppe-Sullivan 2007). The mothers thereby appreciate the fathers' positive attitudes towards parenting more than their actions in co-parenting. This may explain why co-parenting alliance is not a moderator for mothers.

Implications

Measures are suggested to enhance co-parenting alliance and parenting self-efficacy, especially for the fathers, and to decrease parenting stress in both the fathers and mothers. Fathers' parenting has to be supported by the mothers in the form of co-parenting alliance such that they gain self-efficacy and thereafter get more involved. First, to enhance fathers' parenting self-efficacy and co-parenting alliance through policy, family friendly measures can be introduced, such as paternity leave, flexible work hours, and work hour regulations. These measures allow fathers to spend more time with the spouse in child care. Second, to enhance co-parenting alliance, support to the fathers by way of mothers' positive appraisal can be achieved through family life education and marriage enrichment programs. Among the many approaches for the clinicians, training in the form of workshops and couple sessions may also help. And finally, to decrease parenting stress in both fathers and mothers, parenting education for knowledge and skills enhancement as well as stress management can be promoted.

Limitations

The choice between cross sectional study versus longitudinal study is the first issue for consideration. Costs and manpower are required for longitudinal study. Cross sectional approach is used for this research because of resource constraints. The causality among the constructs in the relationship may need further investigation with longitudinal studies. Secondly, the results may be inconclusive and not generalizable to the population due to convenience sampling. It is suggested to have stratified random

sampling in future studies. Third, self-administered questionnaires were used to collect data in this study. Qualitative interviews to collect more comprehensive and in-depth information can supplement the quantitative approach. Fourth, other variables (e.g. conflict resolution, parent–child attachment) can be studied in relation to the parenting and marital variables. Correlates of marital satisfaction such as spousal relationships, spousal compatibility, and conjugal role fulfillment could impact on the effect of the parenting correlates. As these variables were not obtained in the survey, this is a limitation of the study. In sum, the study has its unique contribution by evidencing the moderating roles of fathering self-efficacy and co-parenting alliance in the association between parenting stress and marital satisfaction among Chinese fathers in Hong Kong.

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