Int J Disabil Hum Dev 2011;10(3):267–274 © 2011 by Walter de Gruyter • Berlin • Boston. DOI 10.1515/IJDHD.2011.039

Validation of the Chinese Parental Expectation on Child's Future Scale

Janet T.Y. Leung[1] and Daniel T.L. Shek[1–4,*]

[1] Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, P.R. China
[2] Public Policy Research Institute, The Hong Kong Polytechnic University, Hong Kong, P.R. China
[3] Kiang Wu Nursing College of Macau, Macau, P.R. China
[4] Division of Adolescent Medicine, Kentucky Children's Hospital, University of Kentucky, Lexington, KY, USA

Abstract

Based on the data collected from 125 parents in Hong Kong, the psychometric properties of the original 23-item Chinese Parental Expectation on Child's Future Scale (CPECF) are examined in this paper. Results showed that the scale had good reliability (internal consistency and test-retest reliability) and convergent validity in the sample. After deletion of six items, a revised scale (Revised-CPECF) was further developed. The Revised Chinese Parental Expectation on Child's Future Scale (Revised-CPECF) showed improvement in internal consistency and convergent validity. For the dimensionality of the revised measure, a 5-factor structure was extracted from the parent sample. The present study is a pioneer attempt to assess parental expectation on child's future in different Chinese communities.

Keywords: children's future; Chinese; parental expectation; psychometric properties.

Introduction

Parental expectation has been regarded as one of the most important family factors that influences the academic achievement and development of adolescents (1–4). In the Chinese community, parental expectations on child's future play a high value in the socialization of their children. There is a popular Chinese maxim of "*wang zi cheng long*" (expecting the son to become dragon) that truly reflects the essence of parental expectations on child's future, with dragon symbolizing "supremacy" in Chinese culture. Parental expectations on child's future are deeply shaped by Confucian philosophy in Chinese culture. The importance of education and scholarship, emphasis of effort, family obligation, filial piety, and development of moral character are all important features rooted in Confucian philosophy that influence parental expectations of child's future. In different Chinese communities, parents always spend much resources to help their children to get good academic results.

Though the concept of parental expectation on child's future is distinctive and important in understanding family beliefs and processes in the Chinese context, research on the relevant area is minimal (5). The paucity of research on parental expectations on child's future may be due to the difficulties on theorization and conceptualization of beliefs, the cultural-specificity of belief system, as well as the lack of measurement tools in measuring parental beliefs and expectations (6). Sigel and McGillicuddy-De Lisi (7) commented that "a clear conception of beliefs (for parents) and theoretical explanations of how and why beliefs are effective are lacking" and literature on beliefs "is superficial, poorly defined, and while often in face validity, it is sorely lacking in providing information about construct and content validity" (p. 497).

In a review of rapid assessment instruments in Chinese culture, Shek (8) commented that there was a severe lack of psychosocial assessment tools in Chinese culture. Similar warnings were highlighted by Shek (9). Obviously, the lack of validated psychosocial measures in the Chinese context has undermined the development of evidence-based practice in different Chinese communities.

There are several reasons why a validated indigenous measurement tool to assess parental expectation on child's future is indispensable. First, as the concepts and theories related to parental expectation on child's future are underdeveloped, the measurement tool would facilitate empirical studies on the phenomenon which would contribute to the theorization and conceptualization of the concept. Second, it can help us understand family beliefs of Chinese people under the influence of Confucian philosophy, which may be different from that of Western societies. Third, parental expectations on children's development determine parental childrearing goals and parenting practices (10). With reference to Chao's (10) findings that there were thematic differences of childrearing beliefs and socialization goals between parents in Chinese and Western cultures, understanding of parental expectations on child's future is important for us to learn more about the family processes in the Chinese context (11, 12).

The purpose of the paper is to present the study on assessing the psychometric properties of the Chinese Parental Expectation on Child's Future Scale (CPECF). The Chinese

*Corresponding author: Professor Daniel T.L. Shek, PhD, FHKPS, BBS, JP, Chair Professor of Applied Social Sciences, Faculty of Health and Social Sciences, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Room HJ407, Core H, Hunghom, Hong Kong, P.R. China
E-mail: danielshek@inet.polyu.edu.hk
Received October 12, 2010; accepted December 13, 2010

Parental Expectation on Child's Future Scale (CPECF) was developed based on a survey of the literature on parental expectations on child's development (10, 13–15) and ideas of Confucian thoughts. Furthermore, two focus groups of parents and adolescents were arranged and interviewed separately to understand their perceptions and experiences on parental expectations on child's future. Five dimensions of parental expectations on child's future emerged in the qualitative data, including "educational achievement", "self-reliance", "occupation", "family obligation", and "conduct" (5). The dimensions reflect the central features of Confucian thoughts.

Before the scale can be objectively used in research and practice contexts, it is important to establish its psychometric properties. Typically, three aspects of the psychometric properties of the scale should be examined. First, reliability of the measure, including internal consistency and test-retest reliability, should be assessed. Second, validity of the scale, particularly its relationship to a criterion measure (i.e., criterion-related validity) should be explored. Finally, dimensionality of measure (i.e., factorial validity) with reference to the proposed conceptual framework should be examined. In this paper, data were collected from a parent sample to evaluate the psychometric properties of the CPECF.

Methods

Participants and procedure

The study was based on a parent sample in Hong Kong. Parents with at least one child whose age was between 11 and 15 years were recruited from eight children and youth service centers to participate in the study. There were 125 parents participated in the study, with eight fathers (6.4%) and 117 mothers (93.6%). The age of parents ranged from 31 to 60 years, with majority of the age between 36 and 40 years (n=26, 20.8%), between 41 and 45 years (n=56, 44.8%) and between 46 and 50 years (n=30, 24%). There were 35 parents with one child (28.0%), 66 with two children (52.8%) and 23 with three children (18.4%). Their children were 62 boys (49.6%) and 60 girls (48.0%), with a mean age at 13.49 (SD=1.77).

During data collection, parents were requested to complete the Parent Questionnaire in a self-administered format. The purpose of the study was described to parents and confidentiality of the data was emphasized. The parents were informed that they could choose not to participate in the study if they did not want to (i.e., "passive" informed consent of the parents was obtained). Adequate time was provided for the parents to complete the questionnaire. They took around 20 min to complete the questionnaire. For those parents who had difficulties in comprehending the questions, social workers asked the questions in an interview format.

Test-retest reliability test was also performed to assess the temporal stability of the measure. For test-retest reliability, the participants were requested to complete the Parent Questionnaire. After 2 weeks, they were invited to fill in the Questionnaire once more. The results of the two equivalent tests would be collected and analyzed. There were 25 parents responded in the test-retest reliability tests.

Instruments

The Parent Questionnaire contained Chinese Parental Expectation on Child's Future Scale (CPECF) with 23 items, Parental Knowledge Scale (KNO), Parental Demandingness Scale (DEM), Parental Expectation Scale (EXP), and questions on demographic information. The Parental Knowledge Scale (KNO), Parental Demandingness Scale (DEM), and Parental Expectation Scale (EXP) were used for the evaluation of the convergent validity of Chinese Parental Expectation on Child's Future Scale (CPECF).

Parental Knowledge Scale (KNO) On the basis of a review of literature (16), Shek (17) developed the scale to measure parental knowledge of the child's behavior. Shek (18) showed that the measure was significantly correlated with measures of behavioral control and parent–child relational qualities, providing support for construct validity of the measure. Reliability analysis showed that PKNO and MKNO were reliable (α=0.82 for PKNO and α=0.82 for MKNO) (17). There are seven items of the scale. The total score of the items serves as an indicator of level of parental knowledge of the child's behavior, with a higher score indicating a higher level of parental knowledge of the child's behavior.

Parental Demandingness Scale (DEM) Based on the framework of Maccoby and Martin (19) and the parenting assessment work of Lamborn and colleagues (20), Shek (21) developed a modified version of Parental Demandingness Scale (DEM) to assess the demandingness of parents on the child's behaviors. The scale was found valid and reliable in the Chinese culture with support of internal consistency, test-retest reliability, and concurrent validity (21–24). There are seven items found in the parental Demandingness Scale. The total score of the items serves as an indicator of level of demandingness of parents, with a higher score indicating a higher level of parental demandingness.

Parental Expectation Scale (EXP) Based on the review of literature (25), Shek (17) developed the scale to measure parental expectation of the child's behavior. Shek et al. (26) showed that the scale was significantly correlated with other measurement tools of behavioral control and parent–child relational qualities, thus providing support for construct validity of the scale. Reliability analysis showed that PEXP and MEXP were reliable (α=0.76 for PEXP and α=0.75 for MEXP) (27). There are seven items on the scale. The total score of the items of the scale serves as an indicator of the level of parental expectation of the child's behavior, with a higher score indicating a higher level of expectation and requirement of child's behavior.

Results

The data showed that the scores of CPECF were not significantly related to parent's gender, age, educational level, occupation, family income, number of children, or the gender, age, and educational levels of their children under study.

The overall Cronbach's α of CPECF was 0.829 ($p<0.001$), showing a good internal consistency. The mean inter-item correlation was 0.200, which showed a small to moderate effect size. The range of corrected item-total correlation was 0.094 to 0.688, with the mean corrected item-total correlation at 0.406. It was found that Items 3, 8, 14, 15, 16, and 23 had corrected item-total correlations below 0.30 (0.094, 0.226, 0.244, 0.170, 0.245, 0.252 respectively). After deleting the items, the Cronbach's α was improved (0.839, 0.829, 0.832, 0.831, 0.829, 0.831 respectively). Table 1 lists the item-total statistics of CPECF.

Table 1 Item-total statistics of CPECF.

		Corrected item-total correlation	Cronbach's α if item deleted
CPECF1	I expect my child can complete university course.	0.521	0.818
CPECF2	I expect my child has good academic result.	0.531	0.818
CPECF3	I let my child decide his/her educational attainment.	**0.094**	**0.839**
CPECF4	I have clear expectation on my child's academic performance.	0.356	0.823
CPECF5	I expect that my child can learn a specific skill.	0.483	0.820
CPECF6	I always remind my child to be self-reliant in the future.	0.376	0.822
CPECF7	I expect that my child does not need to receive financial assistance from the Government.	0.390	0.822
CPECF8	I expect that my child does not rely on me for financial support when he/she grows up	**0.226**	**0.829**
CPECF9	I hope that my child can be the top among others in his/her career.	0.637	0.811
CPECF10	The way out of child's future is to find a good job.	0.499	0.816
CPECF11	I hope that my child can find a job so that he/she can depart from the status we are situated.	0.497	0.816
CPECF12	I expect my child has good salary in the future.	0.538	0.814
CPECF13	I hope that the future job of my child can make him/her free from anxiety of daily necessities.	0.688	0.810
CPECF14	My child can do whatever he/she wants, I have no expectation on his/her career.	**0.244**	**0.832**
CPECF15	I hope that the future job of my child fits his/her interest.	**0.170**	**0.831**
CPECF16	I expect my child will rear me in the future.	**0.245**	**0.829**
CPECF17	I expect my child can rear his/her future family.	0.418	0.822
CPECF18	I expect my child will take care of me in the future.	0.402	0.821
CPECF19	I hope that my child can create a new family.	0.438	0.821
CPECF20	I always remind my child not to act indecently in the future.	0.451	0.820
CPECF21	I hope that my child acts step by step, without unrealistic expectation in the future	0.408	0.822
CPECF22	I always remind my child to contribute to the society in the future.	0.474	0.819
CPECF23	As I cannot control the future development of my child, I do not have any expectations on my child's future.	**0.252**	**0.831**

Values in bold: corrected item-total correlation below 0.3 and improvement of Cronbach's α if the item deleted.

In order to assess the temporal stability of the measure, test-retest reliability was performed. The correlation coefficient, the Pearson's r, between two equivalent tests was taken as an estimate of the reliability of the test. Test-retest reliability, in terms of Pearson's r, was 0.774 ($p<0.001$). The scale showed good test-retest reliability.

For assessing the validity of Chinese Parental Expectation on Child's Future Scale (CPECF), convergent validity was assessed with the correlation of Parental Demandingness Scale (DEM), Parental Knowledge Scale (KNO), and Parental Expectation Scale (EXP). It was found that the scores of CPECF showed a significantly positive relationship with Parental Knowledge Scale (KNO). The Pearson r was 0.345 ($p<0.001$), which was considered as a moderate effect size according to Cohen's suggestion (28). The scores of CPECF also showed significantly positive relationship with the Parental Demandingness Scale (DEM). The Pearson r was 0.357 ($p<0.001$), which was considered as a moderate effect size. The scores of CPECF also showed a significantly positive relationship with the Parental Expectation Scale (EXP). The Pearson r was 0.573 ($p<0.001$), which was considered as a large effect size. In summary, it was found that CPECF showed good convergent validity when compared with the other parenting measures of Parental Demandingness Scale (DEM), Parental Knowledge Scale (KNO), and Parental Expectation Scale (EXP).

To examine the dimensionality of an assessment tool, factor analysis is commonly performed. However, it should be noted that sample size would be a consideration in the study. As suggested by Tabachnick and Fidell (29) that "as a general rule of thumb, it is comforting to have at least five cases for each observed variable" (p. 603). Stevens (30) echoed with the view that to have a more stable factor analysis, a ratio of five subjects per variable (item) was basically required. As the measure contained 23 items, a minimum of 115 cases was required. The sample size of the study was 125, which was merely adequate for factor analysis.

In identifying the factor structure of the CPECF, principal component analysis with varimax rotation was performed. From the initial factors extraction on CPECF, the change of eigenvalue and the scree plot suggested a 6-factor structure. Though all six factors had eigenvalue greater than unity and the solution explained 61.95% of the total variance, the six factors were unclear, imprecise, and not interpretable. Except Factor 1 and Factor 3 that represented "occupation" and "personal conduct", other factors were not interpretable.

The unsatisfactory 6-factor solution may be due to inadequate sample size to maintain stable factor structure, as well as the poor interrelationships of some items with the other items. Table 2 lists the rotated component matrix for the 6-factor solution of CPECF.

Revised Scale on Chinese Parental Expectation on Child's Future (Revised-CPECF)

With the problems of the measure on internal consistency and factor analysis, it was suggested that the Chinese Parental Expectation on Child's Future Scale should be revised. To revise the scale, items which have low corrected item-total correlation (<0.30) would be deleted so as to improve the internal consistency of the scale. The revised scale would be then assessed on test-retest reliability, convergent validity, and factor analysis.

There were six items with corrected item-total correlations <0.30. After deletion of six items, the Revised Scale on Chinese Parental Expectation on Child's Future (Revised-CPECF) contained 17 items (Item 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 13, 17, 18, 19, 20, 21, 22). The overall Cronbach's α of Revised-CPECF was 0.866 ($p<0.001$), which showed improved value on internal consistency. The mean inter-item correlation was 0.283, which has a moderate effect size. The range of corrected item-total correlation was 0.379 to 0.700, with the mean corrected item-total correlation at 0.494. The Cronbach's α if one particular item was deleted ranged from 0.850 to 0.862, suggesting that no particular item would alter the α value greatly. The revised measure (Revised-CPECF) was improved and it showed good internal consistency. The test-retest reliability coefficient of Revised-CPECF between two equivalent tests, in terms of Pearson's r, was 0.765 ($p<0.001$). The scores of Pearson's r on Revised-CPECF was slightly lower than CPECF ($r=0.774$, $p<0.001$), but it also showed good test-retest reliability.

It was found that the scores of Revised-CPECF showed significantly positive relationship with Parental Knowledge Scale (KNO) ($r=0.353$, $p<0.001$); Parental Demandingness

Table 2 Rotated component matrix for six-factor solution of CPECF.

		Component					
		1	2	3	4	5	6
CPECF1	I expect my child can complete university course.	0.156	**0.494**	0.207	0.486	0.270	0.004
CPECF2	I expect my child has good academic result.	0.410	0.271	0.188	**0.537**	0.080	–0.075
CPECF3	I let my child decide his/her educational attainment.	0.004	**0.674**	–0.024	–0.011	–0.012	–0.064
CPECF4	I have clear expectation on my child's academic performance.	0.090	0.123	0.249	0.192	0.064	**0.456**
CPECF5	I expect that my child can learn a specific skill.	0.341	0.241	0.131	**0.403**	–0.014	0.179
CPECF6	I always remind my child to be self-reliant in the future.	0.052	–0.052	0.342	**0.717**	0.003	0.093
CPECF7	I expect that my child does not need to receive financial assistance from the Government.	0.255	–0.143	0.226	**0.405**	–0.236	0.226
CPECF8	I expect that my child does not rely on me for financial support when he/she grows up.	0.018	–0.234	–0.201	**0.552**	0.373	0.322
CPECF9	I hope that my child can be the top among others in his/her career.	**0.743**	0.208	0.062	0.126	0.162	0.164
CPECF10	The way out of child's future is to find a good job.	**0.817**	–0.041	0.049	0.218	–0.106	–0.038
CPECF11	I hope that my child can find a job so that he/she can depart from the status we are situated.	**0.755**	–0.142	0.260	0.056	0.024	0.034
CPECF12	I expect my child has good salary in the future.	**0.751**	0.022	–0.015	0.037	0.370	0.088
CPECF13	I hope that the future job of my child can make him/her free from anxiety of daily necessities.	**0.812**	0.178	0.083	0.053	0.204	0.156
CPECF14	My child can do whatever he/she wants, I have no expectation on his/her career.	0.114	**0.756**	0.148	0.005	–0.108	–0.113
CPECF15	I hope that the future job of my child fits his/her interest.	0.084	–0.211	0.059	–0.022	–0.071	**0.825**
CPECF16	I expect my child will rear me in the future.	0.216	–0.142	0.021	0.009	**0.805**	–0.028
CPECF17	I expect my child can rear his/her future family.	0.078	0.073	0.222	0.242	0.235	**0.606**
CPECF18	I expect my child will take care of me in the future.	0.149	–0.022	0.182	0.072	**0.831**	0.183
CPECF19	I hope that my child can create a new family and allow family perpetuation.	0.211	0.092	**0.534**	–0.115	0.160	0.427
CPECF20	I always remind my child not to act indecently in the future.	0.159	–0.068	**0.684**	0.393	–0.078	0.039
CPECF21	I hope that my child acts step by step, without unrealistic expectation in the future.	0.030	0.038	**0.811**	0.135	0.025	0.150
CPECF22	I always remind my child to contribute to the society in the future.	0.117	0.164	**0.659**	0.152	0.157	0.145
CPECF23	As I cannot control the future development of my child, I do not have any expectations on my child's future.	0.007	**0.849**	–0.003	0.000	–0.090	0.158

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. [a]Rotation converged in seven iterations. Values in bold: the highest loading obtained by a variable among the factors.

Scale (DEM) (r=0.377, p<0.001); and Parental Expectation Scale (EXP) (r=0.577, p<0.001). Revised-CPECF showed good convergent validity when correlated with the other parenting measures of Parental Demandingness Scale (DEM), Parental Knowledge Scale (KNO), and Parental Expectation Scale (EXP). The scores of correlations were improved in comparison with CPECF.

In assessing the dimensionality of Revised-CPECF, an identical procedure was performed, that is, principal component analysis with varimax rotation. From the initial factors extraction on Revised-CPECF, the change of eigenvalue and the scree plot suggested a 5-factor structure. All five factors had eigenvalue greater than unity. The solution explained 64.45% of the total variance. The loadings of all items exceeded 0.40. The first factor was named as "occupation" which accounted for 32.07% of the total variance. There were five items included in the factor (Item 9, 10, 11, 12, 13). The second factor was labeled as "personal conduct" which explained 12.18% of the total variance. There were five items (Item 6, 7, 20, 21, 22) included in the second factor. The second factor combined the dimensions of "conduct" and "self-reliance" described in the conceptual model. The third factor was named as "family obligation" which accounted for 7.69% of the variance. There were three items (Item 17, 18, 19) included in the factor. The fourth factor was named as "educational attainment" that accounted for 6.62% of the total variance. It included two items (Item 1, 2). The fifth factor is named "educational expectation" (Item 4, 5). In fact, the fourth and fifth factors belonged to "educational achievement" in the conceptual model. Table 3 illustrates the rotated component matrix of Revised-CPECF. In short, the factor analytic findings basically conformed to the original conceptual model.

Discussion

From the data of 125 parents, it was found that the original Chinese Parental Expectation on Child's Future Scale (CPECF) showed good internal consistency, test-retest reliability, and convergent validity. However, the result of factor analysis was unsatisfactory. This may due to the small sample size and poor interrelationships and low corrected item-total correlation in some of the items. Hence, modification of the measure was necessary.

The Revised 17-item Chinese Parental Expectation on Child's Future Scale (Revised-CPECF) was formed after deleting six items with low corrected item-total correlations (<0.30). The Revised-CPECF resulted in improvement in internal consistency. The revised measure also showed sound test-retest reliability and convergent validity. Factor analysis of Revised-CPECF also demonstrated a clear 5-factor structure. The results based on the Revised-CPECF were much improved when compared with the original version of CPECF. Table 4 summarizes the comparison of CPECF and Revised CPECF.

Table 3 Rotated component matrix of Revised-CPECF.

		Component				
		1	2	3	4	5
CPECF1	I expect my child can complete university course.	0.087	0.142	0.201	**0.781**	0.186
CPECF2	I expect my child has good academic result.	0.341	0.231	–0.018	**0.721**	0.127
CPECF4	I have clear expectation on my child's academic performance.	0.050	0.176	0.334	–0.036	**0.632**
CPECF5	I expect that my child can learn a specific skill.	0.262	0.069	0.020	0.324	**0.673**
CPECF6	I always remind my child to be self-reliant in the future.	0.043	**0.527**	–0.019	0.237	0.450
CPECF7	I expect that my child does not need to receive financial assistance from the Government.	0.257	**0.492**	–0.164	–0.051	0.310
CPECF9	I hope that my child can be the top among others in his/her career.	**0.726**	0.102	0.183	0.388	–0.077
CPECF10	The way out of child's future is to find a good job.	**0.800**	0.163	–0.206	0.133	0.144
CPECF11	I hope that my child can find a job so that he/she can depart from the status we are situated.	**0.758**	0.273	0.059	–0.096	0.142
CPECF12	I expect my child has good salary in the future.	**0.765**	–0.096	0.321	0.099	0.122
CPECF13	I hope that the future job of my child can make him/her free from anxiety of daily necessities.	**0.801**	0.032	0.293	0.208	0.094
CPECF17	I expect my child can rear his/her future family.	0.039	0.177	**0.540**	0.163	0.442
CPECF18	I expect my child will take care of me in the future.	0.189	–0.016	**0.726**	0.177	0.065
CPECF19	I hope that my child can create a new family.	0.206	0.433	**0.571**	–0.137	0.130
CPECF20	I always remind my child not to act indecently in the future.	0.131	**0.752**	–0.011	0.148	0.227
CPECF21	I hope that my child acts step by step, without unrealistic expectation in the future.	–0.001	**0.763**	0.281	0.117	0.018
CPECF22	I always remind my child to contribute to the society in the future.	0.085	**0.616**	0.363	0.347	–0.150

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. [a]Rotation converged in seven iterations. Values in bold: the highest loading obtained by a variable among the factors.

Table 4 Summary of reliability and validity statistics of CPECF and Revised-CPECF.

			CPECF	Revised-CPECF
No. of items			23	17
Reliability	Internal Consistency	Cronbach's α	0.829[a]	0.866[a]
		Mean inter-item correlations	0.200	0.283
		Mean corrected item-total correlations	0.406	0.494
	Test-retest reliability	Test-retest reliability coefficient	0.774[a]	0.765[a]
Validity	Convergent validity	Correlation coefficients with KNO	0.345[a]	0.353[a]
		Correlation coefficients with DEM	0.357[a]	0.377[a]
		Correlation coefficients with EXP	0.573[a]	0.577[a]
	Factor analysis	No. of factors extracted	6	5
		% of total variance explained	61.95%	64.45%
		Factors	Unclear and not interpretable	Quite clear in 5-factor model: Occupation, Personal conduct, Family obligation, Education attainment and Educational expectation

[a]p<0.001. CPECF, Chinese Parental Expectation on Child's Future Scale; Revised-CPECF, Revised Chinese Parental Expectation on Child's Future Scale; KNO, Parental Knowledge Scale; DEM, Parental Demandingness Scale; EXP, Parental Expectation Scale.

In view of the non-existence of validated assessment tools of parental expectation on child's future, the study generated pioneer findings on the psychometric properties of the scale on parental expectation on child's future. The scale was further improved by deleting six items showing low corrected item-total correlations (<0.30). The revised measure showed good internal consistency, test-retest reliability, convergent validity and factorial validity, suggesting that the scale possessed good psychometric properties on reliability and validity. In view of the paucity of research in this area, this study is an important addition to the literature.

There are two implications of the present findings. First, the study deepens our understanding of the dimensionality of the construct of parental expectation on child's future as measured by Revised-CPECF. As there are only limited theoretical conceptualizations of the construct, the present findings sharpen our ideas on the underlying facets of parental expectations on child's future. The dimensions of parental expectation of child's future reflect both cultural and practical inclinations of parents. According to Confucian philosophy, the pursuit of "*chun-tzu*" (man of virtue or noble character) is the lifelong endeavor of human beings. Moral virtue (*de*) is the way that leads human beings into truth, goodness and perfection. Particularly, the cultivation of virtue forms the main basis of education (31, 32). Thus, the importance of education is central in Confucian doctrines. Furthermore, family obligation as the manifestation of filial piety in Confucian discourse plays a great part in the Chinese pattern of socialization and intergenerational conduct (33). It is regarded as a behavioral rule that children should follow, a mental and emotional manifestation of love towards the parents, and a system of values in which children should be cultivated (34). In summary, the emphases of moral conduct, family obligation, and educational achievement on parental expectation of child's future echoed the central features of Confucian philosophy in Chinese culture. However, with the rapid development of industrialization and globalization, economic achievement and material success become an importance source of life satisfaction of people in the highly competitive metropolitan environment (35). Thus, the practical inclination of good educational attainment, learning specific work skills, and occupation has become even more salient in the conceptions of parental expectations on child's future. The dimensionality of the parental expectation on child's future as measured by Revised-CPECF helps us to fill the gap in the conceptualization of parental expectations in contemporary Chinese families.

Second, the present findings provide evidence for an indigenous measurement tool that may be useful for further exploration of indigenous Chinese concepts as well as construction of Chinese family models. Parental expectation is regarded as an important factor that predicted cognitive and psychological competence of their children (1–4). However, as indicated by Chao (10, 36) that there was thematic difference of childrearing beliefs and socialization goals between Chinese and Western cultures, her argument implying that an indigenous Chinese conception of parental expectations and family processes was needed. Padmawidjaja and Chao (15) suggested that the cultural processes underlying parental beliefs made influence on the parenting practices through parental control behaviors and warmth. They demonstrated that Chinese parental beliefs motivated the parental control behaviors (*guan*) in immigrant Chinese Americans. It is exciting and important to explore how parental expectations on child's future under the influence of Confucian philosophy affect parenting practices and parent–child interactions, as the theoretical model may be distinctive from the Western models on parenting. An indigenous measurement tool on parental expectations on child's future is definitely useful for further exploration of indigenous Chinese concepts and construction of Chinese family models. Obviously, with reference to the observation that there is a severe lack of psychosocial measures in the Chinese culture, the present study is a positive and timely response.

There are several limitations of the present findings. First, as the parent sample was not randomly sampled, generalizability of the findings may be limited. Second, as the sample was composed mainly of mothers, this would bring overrepresentation of mothers and under representation of fathers. Third, the small sample size in the parent's study does not permit the researchers to examine the stability of the factor analytic findings. Thus, there is a need to conduct factor analysis using larger samples. Fourth, though Revised-CPECF showed sound psychometric properties with the parent sample, it is necessary to conduct cross-validation of Revised-CPECF in new samples. Fifth, as the findings presented in the study were based on parents in Hong Kong, there is a need to assess the generalizability of the findings in different Chinese communities (e.g., mainland China) and Chinese people living in non-Chinese contexts (e.g., Chinese-Americans).

Despite the above limitations, the study is pioneer in assessing the reliability, validity and dimensionality of the measure. It clearly demonstrates that the Revised Chinese Parental Expectation on Child's Future Scale (Revised-CPECF) possesses good psychometric properties that can be used objectively in the Chinese community. Essentially, the study can be regarded as positive response to the urge of development of validated Chinese family measures so as to facilitate the development of Chinese family research (9).

Conflict of interest statement

Authors' conflict of interest disclosure: The authors stated that there are no conflicts of interest regarding the publication of this article.
Research funding: None declared.
Employment or leadership: None declared.
Honorarium: None declared.

References

1. Seiginer R. Parent's educational expectations and children's academic achievement: a literature review. Merrill-Palmer Quart 1983;29:1–23.
2. Davis-Kean PE. The influence of parent education and family income on child achievement: the indirect role of parental expectations and the home environment. J Fam Psychol 2005;19:698–710.
3. Gill S, Reynolds A. Educational expectations and school achievement in urban African American children. J Sch Psychol 1999;37:403–24.
4. Brody GH, Flor DL, Gibson NM. Linking maternal efficacy beliefs, developmental goals, parenting practices, and child competence in rural single-parent African American families. Child Dev 1999;70:1197–208.
5. Leung JT, Shek DT. Expecting my child to become "dragon" – Development of the Chinese Parental Expectation on Child's Future Scale. Int J Disabil Hum Dev. In press.
6. Leung JT, Shek DT. Poverty and adolescent developmental outcomes: a critical review. Int J Adolesc Med Health 2011;23. In press.
7. Sigel IE, McGillicuddy-De Lisi AV. Parent beliefs are cognitions: the dynamic belief systems model. In: Bornstein MH, editor. Handbook of parenting: Vol. 3, 2nd ed. Lawrence Erlbaum Associates 2002:485–508.
8. Shek DT, Lam MC, Tsoi KW. Evidence-based practice in Hong Kong. In: Thyer, B, Kazi MA, editors. International perspectives on evidence-based practice in social work. London: Venture Press, 2004:167–81.
9. Shek DT. Quality of life of Chinese people in a changing world. Soc Indic Res 2010;95:357–61.
10. Chao RK. Chinese and European American cultural models of the self reflected in mothers' childrearing beliefs. Ethos 1995;23:328–54.
11. Shek DT. Chinese family research: puzzles, progress, paradigms, and policy implications. J Fam Issues 2006;27:275–84.
12. Yang KS. Towards an indigenous Chinese psychology: a selective review of methodological, theoretical, and empirical accomplishments. Chinese J Psychol 1999;41:181–211.
13. Shek DT, Chan LK. Hong Kong Chinese parents' perceptions of the ideal child. J Psychol 1999;133:291–302.
14. Li J. Parental expectations of Chinese immigrants: a folk theory about children's school achievement. Race Ethnicity Educ 2004;7:167–83.
15. Padmawidjaja IA, Chao RK. Parental beliefs and their relation to the parental practices of immigrant Chinese Americans and European Americans. In: Russell ST, Crockett LJ, Chao RK, editors. Asian American parenting and parent–adolescent relationships. New York: Springer Sci Bus Media, 2010:37–60.
16. Kerr M, Stattin H. What parents know, how they know it, and several forms of adolescent adjustment: further support for a reinterpretation of monitoring. Dev Psychol 2000;36:366–80.
17. Shek DT. Perceived parental control processes, parent-child relational qualities, and psychological well-being in Chinese adolescents with and without economic disadvantages. J Genet Psychol 2005;166:171–88.
18. Shek DT. Perceived parental behavioral control and psychological control in Chinese adolescents in Hong Kong. Am J Fam Ther 2006;34:163–76.
19. Maccoby EE, Martin JA. Socialization in the context of the family: Parent-child interaction. In: Mussen PH (Series ed.), Hetherington EM (Vol. ed). Handbook of child psychology, vol. 4, Socialization, personality, and social development. New York: Wiley, 1983:1–100.
20. Lamborn SD, Mounts NS, Steinberg L, Dornbusch SM. Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. Child Dev 1991;62:1049–65.
21. Shek DT. Parenting characteristics and adolescent psychological well-being: a longitudinal study in a Chinese context. Genet Soc Gen Psychol Monogr 1999;125:27–44.
22. Shek DT, Lee TY, Ngai NP, Law WO, Chan LK. Assessment of perceived parenting styles, parenting characteristics, and family functioning in Chinese adolescents in Hong Kong. Hong Kong J Soc Work 1995;29:74–6.
23. Shek DT. Adolescents' perceptions of paternal and maternal parenting styles in a Chinese context. J Psychol 1998; 132:527–37.
24. Shek DT. A longitudinal study of parenting and psychosocial adjustment among Chinese adolescents experiencing economic disadvantage. Int J Adolesc Med Health 2003;15:39–49.
25. Crouter AC, Head MR. Parental monitoring and knowledge of children. In: Bornstein MH, editor. Handbook of parenting, vol. 3. Mahwah, NJ: Erlbaum, 2002:461–83.
26. Shek DT, Lee TY, Chow JT. Perceived parental behavioral control, psychological control and parent-child relational qualities in

Chinese adolescents in Hong Kong. J Youth Stud 2006;9:138–55. [Chinese].
27. Shek DT. Family life quality and emotional quality of life in Chinese adolescents with and without economic disadvantage. Soc Indic Res 2007;80:393–410.
28. Cohen J. Statistical power analysis for the behavioral sciences, 2nd ed. NJ: L Erlbaum Associates, 1988.
29. Tabachnick BG, Fidell LS. Using multivariate statistics. New York: HarperCollins College Publishers, 1989.
30. Stevens J. Applied multivariate statistics for the social sciences, 4th ed. Mahwah, NJ: L Erlbaum Associates, 2002.
31. Chen CS, Uttal D. Cultural values, parents' beliefs, and children's achievement in the United States and China. Hum Dev 1988;31:351–8.
32. Yao X. An introduction to Confucianism. Cambridge: Cambridge Univ Press, 2000.
33. Ho DY. Fatherhood in Chinese culture. In: Lamb ME, editor. The father's role: cross-cultural perspectives Hillsdale, NJ: Erlbaum, 1987:227–45.
34. Jordan DK. Filial piety in Taiwanese popular thought. In Slote WH, De Vos GA, editors. Confucianism and the family. New York: State University New York Press, 1998:267–83.
35. Lee RP. Social stress and coping behavior in Hong Kong. Academic Press, 1985.
36. Chao RK. Beyond parental control and authoritarian parenting style: understanding Chinese parenting through the cultural notion of training. Child Dev 1994;65:1111–9.