

Exploratory Study on Relationships between Family Functioning, 1  
Demographics and Individual Well-Being in East Asia

**EXPLORATORY STUDY ON RELATIONSHIPS  
BETWEEN FAMILY FUNCTIONING, DEMOGRAPHICS  
AND INDIVIDUAL WELL-BEING IN EAST ASIA**

DR. LO, HAY MING HERMAN

*Assistant Professor, Department of Applied Social Sciences,  
The Hong Kong Polytechnic University  
herman.lo@polyu.edu.hk*

DR. CHUNG CHAN, LAI FOON MIRANDA

*Chairman, Research and Training Committee,  
Consortium of Institutes on Family in the Asian Region  
mirandachungclf@hotmail.com*

PROF. KIM, YOUNG HEE

*Professor, Department of Child Welfare, Chungbuk National University  
enjoy@chungbuk.ac.kr*

MR. MUI, WAI KEUNG MOSES

*Chief Officer, Service Development (Family and Community),  
Hong Kong Council of Social Service  
moses.mui@hkcss.org.hk*

PROF. FENG, YEN JOYCE

*Professor, Department of Social Work, National Taiwan University  
fengyen@ntu.edu.tw*

PROF. ZHU, MEIHUA

*Professor, Department of Social Work,  
East China University of Science and Technology  
zhumeihua@ecust.edu.cn*

Mr. WONG, KWONG SING

*Council Member  
Consortium of Institutes on Family in the Asian Region  
kwongsing83@yahoo.com.sg*

MS. CHINAPAN, BAWANY

*Senior Lecturer, Department of Psychology, HELP University  
bawanyc@help.edu.my*

DR. LEE, NGAK SIANG

*Chairman, Chee Hoon Kog Moral Promotion Society  
drleens@chkmops.org.sg*

**AN EXPLORATORY STUDY ON THE RELATIONSHIPS BETWEEN  
FAMILY FUNCTIONING AND INDIVIDUAL WELL-BEING IN EAST ASIA**

**Abstract:** This exploratory study examined the relationship between family functioning and individual's well-being across seven East Asian cities. 3834 participants recruited through convenience sampling completed a family survey. Descriptive statistics, t-tests, ANOVAs, and hierarchical regression analyses were performed. Results showed that, among the survey respondents, overall 31.1% of families were diagnosed as dysfunctional, 11.3% were scored as low functioning, and 50.7% were classified as high functioning. In various cities, 21.2% to 40.6% of the families were diagnosed as dysfunctional, 6.5% to 16.6% were scored as low functioning, and 33.2% to 68% were classified as high functioning. Income per head and divorced predicted low family functioning. After controlling demographic variables, family functioning significantly predicted subjective happiness ( $\Delta R^2 = .17$ ), depression ( $\Delta R^2 = .11$ ), mental health ( $\Delta R^2 = .05$ ) and physical health ( $\Delta R^2 = .02$ ). More cross-cultural studies on Asian families were recommended for improving our understanding of family dynamics and functioning of eastern families.

**Keywords:** Asia; family functioning; family; well-being; subjective happiness

## **Introduction**

### **Families and Families in East Asia**

Families function to satisfy members' needs of physical care and economic security, mental growth and development, emotional nurturance, socialization, cultural transformation and spiritual growth, and these in turn contribute to the health and stability of society (Pardeck et al., 1998). Family functioning is composed of members' willingness or disposition to share responsibilities in family, to share time and money, to collaborate in utilizing familial resources for problem solving, to provide emotional support, and to support each other's growth (Smilkstein, Ashworth, & Montano, 1982). Studies found that family functioning is related to demographic variables, such as income, education level and marital status (e.g., Mandara & Murray, 2000; Murphy, 1998; Ma et al., 2009). Family functioning was associated with individual well-being of family members, such as subjective happiness, depression, and physical health (e.g., Botha & Booyesen, 2014; Tsai & Sun, 2013; Chao, Zyzanski, & Flocke, 1998).

The highly valued family lineage continues to share among East Asia based on the value of Confucianism. Such orientation in filial piety includes the primacy of father-son axis over all family relationships, the hierarchical power structure of children's submission to parental authority, the intergenerational dependence, and the dominance of social interactions and favour exchanges with family members over unrelated individuals (Chen and Li, 2014; Choi, Kim, Kim, and Park, 2013; Lim, Huang, and Wang, 2015; Yang, 1988). Families in East Asian are also under the influence of cultural heritage, such as Daoism, Buddhism, and other values of collectivism. The culture can play an important role in shaping the relationship between family functioning and individual well-being (Hofstede, Hofstede, and Minkov, 2010). People

in East Asia are more likely to develop an interdependent view of self, and eastern self-concept is bound to others, and is connected, fluid and flexible within a social network (Markus and Kitayama, 1991).

However, the impact of these cultural values on the actual functioning of East Asian families has not been adequately investigated in rigorous studies. As only children in China they were likely to live near parents and felt responsible for the happiness of their parents (Deutsch, 2006). A study in Korea reported that values including love and affection, repayment, family harmony, respect, responsibility, and sacrifice were still highly appraised (Sung, 1995). Since filial piety and the quality of parent-children relationship in Asian involves duty, obligation, obedience, devotion, and self-sacrifice, such values may serve as a justification of exploitation and burden (Canda, 2013; Park and Kang, 2007). Some adult caregivers even heavily loaded in offering care in elderly parents and fulfilling the responsibilities of own nuclear families at the same time, and creating regrets and emotional distance among family members (Chan et al., 2012).

People living in these modern Asian metropolitan cities have been influenced by western lifestyles, to different extent. It was not surprised that expressions of family support and filial piety were rated lower in modernized cities and younger generations among East Asians (Cheung and Kwan, 2009; Yamato, 2006). Subjective well-being and life satisfaction are gained from achievements within social norms, fulfilling obligations of social roles and avoiding failures in these aspects have been valued (Kim et al., 1994; Liao, Fu, and Yi, 2005). On the other hand, families across East Asian countries experience challenges and transitions (Quah, 2015). Singlehood and low fertility have increased (Cheung, 2015; Osteria, 2015). After giving birth to children, wives reported lower perceived marital closeness and less equity in marital relationships, and husbands tended to feel a loss of love and attention from partners (Pimentel, 2000). Conflicts between partners in Asian families were frequent (Chan, 2015) and

a prevalence of physical and psychological abuse in family was 34.8 and 52.4 percent respectively among Chinese major cities (Cui, Hong, Su, & Liu, 2012). There were sharp increases in divorce rates in Japan, South Korea and Taiwan from 1995, and divorce rates in China and Hong Kong continued to rise in recent years (Jones, 2015).

A few cross-cultural studies comparing the family functioning showed inspiring but contrasting results. A study found that Korean university students reported a lower level of perceived family functioning and intimacy than the American counterparts were (Chung and Gale, 2008). Unfortunately, measures of subjective happiness and mental health were not included in their study. Since the family functioning scale adopted in this study was based on the family-of-origin model which included subscales such as clarity of expression, respects for others, acceptance of separation and loss, such definition of family functioning are contrary to the value and practice of collectivistic culture. Another study adopted a mixed-method observational method provided insights on the differences and inconsistencies in Asian couples in negotiation across five countries (Lee et al., 2013). The results was interesting to highlight subtle and indirect conflict styles in the relationships particularly in Korean and Japanese couples, while participants from Shanghai, Hong Kong and Taiwan were more inclined to raise conflictual issues and show negativity. More studies on family functioning in East Asia are required.

### **Family Functioning and Demographics**

Some studies had investigated the level of family functioning across demographic subgroups. Firstly, family income was found to influence family functioning. Studies found that low-income families faced financial strain and material hardship (Mistry et al., 2002). Chronic stressors had a damaging effect to mental health and reduced the capacity to be a sensitive, accepting and supportive member (Mistry et al., 2002). Low family income was also related

with household chaos, which interfered with the establishment and maintenance of functional family routines (Hardaway et al., 2012). More conflicts were reported in low-income families, and family members from such families were more likely to feel being rejected, less likable and lovable, lonely and self-inadequate (McLeod, Kruttschnitt, and Dornfeld, 1994; Mandara and Murray, 2000). They tended to lack interpersonal management skills, have inconsistent personal style (Lempers, Clark-Lempers, and Simons, 1989), and lack resources to involve family leisure activities (Hornberger, Zabriskie, and Freeman, 2010; Mandara and Murray, 2000), that makes family members more difficult to solve the conflicts. Overall, studies supported that low family income was associated with low family functioning (Mandara and Murray, 2000; Ma et al., 2009).

Secondly, family functioning is related to education level. Parental education attainments influence parental cognitions, mental health and material resources (Feinstein, Duckworth, and Sabates, 2008), which in turn influence quality of family interaction and home environment (Dubow, Boxer, and Huesmann, 2009). Studies found that parents' higher education levels were associated with warmth and play behaviors with children in family (Davis-Kean, 2005). Mothers with higher education were associated with warm, responsive parenting styles (Klebanov, Brooks-Gunn, and Duncan, 1994). In short, parental education could influence family functioning (Hsiao, 2014; Murphy et al., 1998; Shek, 2001).

Finally, family functioning is also related to marital status. Positive affect towards one's spouse was positively correlated with family functioning (Hilbert, 1994). Comparing with normal families, adults in divorced families may feel distress for sole parenting responsibility or loss of children custody (Bauserman, 2012), loss emotional support or continue to conflict with the ex-spouse (Masheter, 1991). All these could damage family functioning and studies supported that single parent status was significantly associated with low family functioning (Murphy et al., 1998; Ma et al., 2009).

### **Family Functioning and Individuals' Well-Being**

The relationship between family functioning and individual well-being are crucial, as individuals' happiness is often grounded on sufficient emotional support from family (North et al. 2008). A national study found that people in poorer countries with stronger family ties were happier than those in richer countries with weaker family ties (Alesina and Giuliano, 2010). People receiving more emotional support from family (Adams, King, and King, 1996) and having family members truly caring or being able to be relied on (Martin and Westerhof, 2003) had higher life satisfaction. Well-functioning families can ensure individuals to perform in optimal productivity, which can improve individuals' happiness (Botha and Booysen, 2014; Nan et al., 2014).

Family functioning is also a robust predictor of general mental health, and a negative predictor of depression. Studies found that family conflicts (Aseltine, 1996), critical environment (Keitner et al., 1995), over-involvement or emotional detachment (Turner, Irwin, and Millstein, 1991) were associated with mental health. Dysfunctional family processes might impair a family member's affect regulation which could lead to mental health issues such as depression (Sheeber, Hops, and Davis, 2001). It is not surprised that lower family functioning is consistently correlated with poor mental health and more depressive symptoms (Bluestein and Rutledge, 1993; Tsai and Sun, 2013).

The relationship between family functioning and physical health of individual family member is often underestimated. Umberson (1987) suggested that family relationships involved a sense of meaning, obligations and constraints, and a functional family could cultivate members' healthier lifestyle, such as regular eating, sleeping or exercise, that would lead to better health outcomes. One study reported that higher family functioning was

associated with better physical health, and fewer clinic visits (Chao, Zyzanski, and Flocke, 1998).

### **Present Study**

Many studies of family functioning are based on Western samples. It is not clear whether the same pattern applies in Eastern families. In this study, the family functioning across seven East Asian cities, including Hong Kong, Guangzhou, Kuala Lumpur, Shanghai, Seoul, Singapore, and Taipei were investigated. The hypothesis was that families with lower income, lower education, and divorced status have lower level of functioning. Moreover, family functioning level could predict better subjective happiness, mental health, and physical health, and less depressive symptoms.

## **Methodology**

### **Sample**

The study was a collaborative effort of ten researchers from seven East Asian cities. It was an initiative of a regional organization in Asia that seek for advancing knowledge in family practice. Each researcher was the representative of the organization and contributed to this study on voluntary basis. Since no financial sponsorship was involved, and the exploratory nature of the study, convenience sampling was used in view of its easy accessibility and affordability. Such country selection was determined by the organization membership and only one country from the organization did not have members to participate in the study due to the changes of representative and their unavailability within the project period. Data was collected between March and July 2016.



Each researcher liaised with local social service organization in their city through networks between organizations. In total 3834 families were recruited for this study. All participants were living in the urban areas of seven metropolitan cities in Asia. The first and second authors designed the questionnaire and manual guide, after consultation with all research team members. Each researcher applied for approval from local university and/or the social service organization that was responsible for the data collection at the city. Inclusion criteria of the study was that all participants should be a parent and currently living with at least one child. They participated in the survey on voluntary basis.

## Measures

The following measures were adopted in the study.

*Family Adaptation, Partnership, Growth, Affection, Resolve (APGAR) Scale.* APGAR was measured with the 5-item self-report scale developed by Smilkstein, Ashworth and Montano (1982). The participants were asked to report their satisfaction of family functions across five domains using 3-point response scale where 0 = hardly ever and 2 = almost always. A sample item is: “*I am satisfied that I can turn to my family for help when something is troubling me.*” Cronbach’s alpha for this scale in our study was 0.89. The range of scores is from 0 to 10. A cutoff score of 6 had been proposed (Mengel, 1987; Yen, 2008) but an alternative interpretation that using a score of 0 to 3 indicating severe family dysfunction, 4 to 7 as moderate family function, and 8 to 10 as positive family function is also possible (Cao, 2013).

*Subjective Happiness Scale (SHS).* SHS was measured with the 4-item self-report scale developed by Lyubomirsky and Lepper (1999). The participants were asked to report their subjective happiness using 7-point response scale. A sample item is: “*In general, I consider myself: not a very happy person / a very happy person.*” Cronbach’s alpha for this scale in our study was 0.70.

*Patient Health Questionnaire (PHQ-9).* PHQ-9 was measured with 9-item self-report scale developed by Kroenke, Spitzer and Williams (2001), based directly on the nine diagnostic criteria for major depressive disorder in the DSM-IV (Diagnostic and Statistical Manual Fourth Edition). The participants were asked to report their severity of depression symptoms using 4-point response scale where 0 = not at all and 3 = nearly every day. A sample item is: “*Little interest or pleasure in doing things.*” Cronback’s alpha for this scale in our study was 0.93.

*Short Form-12 Health Survey (SF-12).* SF-12 was measured with 12-item self-report scale developed by Ware, Kosinski and Keller (1995). The participants were asked to report their self-perceived physical and mental health. Sample items are: “*Did you have a lot of energy?*” and “*Have you felt down-hearted and blue?*” Cronback’s alpha for this subscales in physical health and mental health in our study were 0.73.

*Demographic variables.* Participants were invited to provide their background information including sex, age, marital status, education levels, employment status, and family income. A cutoff of relative poverty was developed for the seven cities in this study, using 60% of the median income of people in the local country, as suggested by the United Nations (United Nations Development Program, 2008). As reported in the official statistics, the median of monthly household income of the seven cities were: HKD\$25300 for Hong Kong (Census and Statistics Department, 2006), RMB\$6703 for China (National Bureau of Statics of China, 2015), NT\$96493 for Taiwan (Directorate General of Budget, Accounting and Statistics, 2014), MYR\$4585 for Malaysia (Department of Statistics, 2014), SGD\$8666 for Singapore (Singapore Department of Statistics, 2015), and KRW\$4306412 for Korea (Statistics Korea, 2016). Participants who reported their family income level below 60% of the median would be categorized as low income families.

The selection of these scales were based on their availability in English, Chinese and Korean versions so that the questionnaire could be available in the language that all participants

could understand. The English and Chinese versions of the original questionnaire was prepared by the first and the second authors, and the third author identified Korean versions of the four scales for the study. All participants completed the questionnaire by paper and pencil.

This study was approved by the university research office ethics committee of the first author. A template of written consent form was prepared by the first author for the all other researchers' follow-up of ethical clearance in their own countries.

### **Statistical Analysis**

Analyses were conducted using IBM SPSS, version 20. Descriptive statistics were used to describe characteristics of samples. T-test, ANOVA, and hierarchical multiple regression were conducted to examine the effects of family income, marital status, and education on family functioning. Finally, hierarchical regression analyses were conducted to examine the effects of family functioning on individual variables including subjective happiness, depression, mental health and physical health. We also referred to the literature about management of missing values and it was argued that a missing rate of 5% to 10% or below would not cause significant bias to statistical analysis (Bennett, 2001; Schafer, 1999). In our dataset, the rate of missing data was 1.91% (73.3 per variable), which was acceptable according to the above standard. Missing data was handled by pairwise deletion, also known as available case analysis, which is to analyze with all cases in which the variables of interest are present (Graham, 2012).

## **Results**

### **Demographics and statistics of all variables**

Table 1a summarized the demographic characteristics of the participants. The mean age was 42.2 years old. 68.7 percent of them were female, and 85.6% of them were married. In average,

the participants had 4.05 family members and 38.8 percent were classified as low income families. The demographic figures of the participants from seven cities were also included in the same table.

In Table 1b, a summary of the statistics of five variables, including family APGAR, subjective happiness, depression, mental health, and physical health was included.

### **Family Functioning in East Asia**

Table 2a showed the results of family functioning of the whole sample and in the seven participating cities, with mean scores of APGAR. We further classify the families into dysfunctional and normal using a cutoff score of 6, and categories of low (0 to 3), moderate (4 to 7) and high (8 to 10). We found overall 31.1%, with a range from 21.2% to 40.6% across seven cities scored as dysfunctional. We further adopted the groupings of 0 to 3 (low), 4 to 7 (moderate), and 8 to 10 (high) for assessing the level of family functioning. We found overall only an overall 11.3% of the families, and 6.5% to 16.6% of the families across seven cities were diagnosed as low functioning, and overall 50.7% and in respective cities 33.2% to 68.0% of the families were classified as high functioning.

Among the seven cities, Hong Kong families scored 6.22 ( $SD = 2.54$ ), which was the lowest score in family functioning among seven cities. Dummy variable regression analyses were conducted to examine whether significant differences existed in family functioning by comparing the Family APGAR of Hong Kong with other six cities. As shown in Table 2b, after controlling six demographic variables (age, sex, employment, income per head, education, and marital status), it was found that Hong Kong's level of family functioning was significantly lower than the APGAR of Guangzhou ( $t_{(3083)} = 1.97, p < .05$ ), Shanghai ( $t_{(3083)} = 6.16, p < .001$ ), Seoul ( $t_{(3083)} = 6.59, p < .001$ ), Singapore ( $t_{(3083)} = 5.41, p < .001$ ) and Kuala Lumpur ( $t_{(3083)} = 4.36, p < .001$ ).

### **Roles of Income per head, Education, and Marital Status in predicting Family Functioning**

Using hierarchical regression analyses, the roles of income per head, education, and marital status in predicting family functioning, after control demographic variables, including age, sex, and employment were examined. In Table 3, it showed that income per head significantly predicted family functioning and it explained an additional 12% of the variance ( $F$  for  $\Delta R^2 = 40.03$ ,  $p < .001$ ). Marital status also significantly predicted family functioning and it explained 15% of the variance ( $F$  for  $\Delta R^2 = 63.48$ ,  $p < .001$ ), based on the whole sample.

The effect of income per head was also significant in samples from Taipei ( $F$  for  $\Delta R^2 = 26.47$ ,  $p < .001$ ), and Singapore ( $F$  for  $\Delta R^2 = 15.10$ ,  $p < .001$ ). The effect of marital status was significant in samples from Hong Kong ( $F$  for  $\Delta R^2 = 4.63$ ,  $p < .05$ ), Shanghai ( $F$  for  $\Delta R^2 = 12.00$ ,  $p < .01$ ), Taipei ( $F$  for  $\Delta R^2 = 27.91$ ,  $p < .001$ ), Seoul ( $F$  for  $\Delta R^2 = 13.55$ ,  $p < .001$ ), and Singapore ( $F$  for  $\Delta R^2 = 15.00$ ,  $p < .001$ ). However, such effect of education was insignificant in analyses based on the whole sample and samples of seven cities.

### **Family Functioning Predicting Individual Variables**

Using hierarchical regression analyses, Table 4 showed that after controlling sex, income per head, marital status, and education, family functioning explained an additional 18% of variation in subjective happiness ( $F$  for  $\Delta R^2 = 792.35$ ,  $p < .001$ ). Such patterns consistently appeared in the analyses of all seven cities. In Hong Kong, family functioning explained an additional 27% of variance in subjective happiness ( $F$  for  $\Delta R^2 = 183.55$ ,  $p < .001$ ). In Guangzhou, family functioning explained an additional 4% of variance in subjective happiness ( $F$  for  $\Delta R^2 = 12.67$ ,  $p < .001$ ). In Shanghai, family functioning explained an additional 9% of variance ( $F$  for  $\Delta R^2 = 65.98$ ,  $p < .001$ ). In Taipei, family functioning explained an additional 12% of variance ( $F$

for  $\Delta R^2 = 165.06$ ,  $p < .001$ ). In Seoul, family functioning explained an additional 27% of variance ( $F$  for  $\Delta R^2 = 266.44$ ,  $p < .001$ ). In Singapore, family functioning explained an additional 19% of variance ( $F$  for  $\Delta R^2 = 57.94$ ,  $p < .001$ ). Finally in Kuala Lumpur, family functioning explained an additional 22% of variance ( $F$  for  $\Delta R^2 = 52.64$ ,  $p < .001$ ).

Table 5 showed that after controlling sex, family income, marital status and education, family functioning explained an additional 6% of variance in mental health ( $F$  for  $\Delta R^2 = 199.96$ ,  $p < .001$ ). Such patterns consistently appeared in the analyses of all seven cities. In Hong Kong, family functioning explained an additional 19% of variance in mental health ( $F$  for  $\Delta R^2 = 103.99$ ,  $p < .001$ ). In Guangzhou, family functioning explained an additional 5% of variance in mental health ( $F$  for  $\Delta R^2 = 14.12$ ,  $p < .001$ ). In Shanghai, family functioning explained an additional 7% of variance ( $F$  for  $\Delta R^2 = 40.10$ ,  $p < .001$ ). In Taipei, family functioning explained an additional 15% of variance ( $F$  for  $\Delta R^2 = 195.13$ ,  $p < .001$ ). In Seoul, family functioning explained an additional 11% of variance ( $F$  for  $\Delta R^2 = 99.38$ ,  $p < .001$ ). In Singapore, family functioning explained an additional 11% of variance ( $F$  for  $\Delta R^2 = 30.43$ ,  $p < .001$ ). Finally in Kuala Lumpur, family functioning explained an additional 5% of variance ( $F$  for  $\Delta R^2 = 8.52$ ,  $p < .001$ ).

Table 6 showed that after controlling sex, family income, marital status and education, family functioning explained an additional 11% of variance in depression ( $F$  for  $\Delta R^2 = 437.06$ ,  $p < .001$ ). Such patterns consistently appeared in the analyses of all seven cities. In Hong Kong, family functioning explained an additional 14% of variance in depression ( $F$  for  $\Delta R^2 = 81.69$ ,  $p < .001$ ). In Guangzhou, family functioning explained an additional 8% of variance in depression ( $F$  for  $\Delta R^2 = 25.14$ ,  $p < .001$ ). In Shanghai, family functioning explained an additional 8% of variance ( $F$  for  $\Delta R^2 = 46.11$ ,  $p < .001$ ). In Taipei, family functioning explained an additional 13% of variance ( $F$  for  $\Delta R^2 = 172.18$ ,  $p < .001$ ). In Seoul, family functioning explained an additional 5% of variance ( $F$  for  $\Delta R^2 = 37.12$ ,  $p < .001$ ). In Singapore, family

functioning explained an additional 13% of variance ( $F$  for  $\Delta R^2 = 35.50$ ,  $p < .001$ ). Finally in Kuala Lumpur, family functioning explained an additional 6% of variance ( $F$  for  $\Delta R^2 = 12.37$ ,  $p < .001$ ).

Table 7 showed that after controlling sex, family income, marital status and education, family functioning explained an additional 2% of variance in physical health and this change in  $R^2$  was significant ( $F$  for  $\Delta R^2 = 74.51$ ,  $p < .001$ ). Such patterns appeared in the analyses of four cities. In Hong Kong, family functioning explained an additional 3% of variance in physical health ( $F$  for  $\Delta R^2 = 13.14$ ,  $p < .001$ ). In Shanghai, family functioning explained an additional 1% of variance in physical health ( $F$  for  $\Delta R^2 = 5.23$ ,  $p < .05$ ). In Taipei, family functioning explained an additional 3% of variance ( $F$  for  $\Delta R^2 = 25.11$ ,  $p < .001$ ). Finally, in Seoul family functioning explained an additional 7% of variance ( $F$  for  $\Delta R^2 = 55.81$ ,  $p < .001$ ).

## Discussion

In the last decades, East Asia experiences rapid changes that have exerted challenges to the families. The conceptions of commitment, loyalty, respect for seniors and parents in Asian traditional cultures have faced challenges. To the knowledge of the authors, this is the first study of family functioning across seven East Asian regions. It contributes to our understanding about Asian families, particularly in the relationship between family functioning and individual well-being across nations.

In this study, first, we found overall 31.1% of East Asia families in our samples were diagnosed as dysfunctional, 11.3% were scored as low functioning, and 50.7% were classified as high functioning. In various regions, 21.2% to 40.6% of the families were diagnosed as dysfunctional, 6.5% to 16.6% were scored as low functioning, and 33.2% to 68% were classified as high functioning. Second, we confirmed that families in East Asian regions who experienced divorce or separation, and lower income were more likely to experience lower

level of family functioning. Third, the role of family functioning on maintaining and promoting individuals' well-being in East Asian countries were confirmed. Family functioning explained 18% of people's happiness, 11% of their depression, 6% of their mental health, and 2% of their physical health. Such patterns were consistently revealed in the analyses of individual participating cities for predicting subjective happiness, depression and mental health. This suggested that healthy family functioning was important to mental health and physical health of individual members. Overall, these results are consistent with the findings of western studies on family functioning and studies based on individual Asian region (e.g., Botha and Booysen, 2014; Chao, Zyzanski, and Flocke, 1998; Ma et al., 2009; Mandara and Murray, 2000; Murphy, 1998; Tsai and Sun, 2013).

Among the seven cities, Hong Kong participants showed the lowest score in family functioning. The scores of Guangzhou and Taipei were also below average. As shown in Table 2, more participants from Hong Kong and Taipei were categorized as low functioning and less participants from both cities were categorized as high functioning. Shanghai and Seoul had the highest family functioning scores, and it was very interesting to notice that in both cities there were more male participants than female compared, although sex was not the predictor of family functioning in our follow-up analyses. Interpretation should be given with cautions as the sample sizes from these three cities were relatively small, when compared with other participating cities.

Convenient sampling method was used in this study and all participants were living in seven Asian cities. The authors were fully aware of the limitation of such a nonprobability sampling method, as results from this study was likely to be biased (Battaglia, 2008). Although we included dummies and adjusted the covariates in the statistical analysis, our preliminary findings in comparison of the patterns between family functioning and other variables in these Asian cities should be interpreted with cautions. However, a recent study of different



recruitment methods suggested that the word of mouth was the most effective method to recruit monolingual participants in Asia, as many commonly used method for representative sampling such as online promotion in the western countries could not reach the lower educated participants in these countries (Park & Sha, 2015). Future studies may apply different recruitment methods and more rigorous designs and to investigate the family across regions using matched samples.

Different strategies can be used to improve our knowledge about families in East Asia. The selection of a suitable family functioning measure is a tough decision for a cross-cultural study in Asia and the language issue may become a barrier for many researchers from Asia. Further studies may apply different family functioning scales, and the inclusion of some measures developed by Asian researchers based on our family culture should be considered. Moreover, the impact of culture on family members should be better understood when separate measures of value, such as individualism-collectivism, and filial piety, can be included for investigating the individual and regional differences. More effort should be made to explore the landscape of Asian families, so that the effect of culture and values in family functioning and subjective well-being can be examined in greater detailed.

This study focused on the well-being and perceptions of parents from East Asia but we noticed there may be significant differences in the views in how ideal and actual family function among family members. For example, a parent may view the use of control and discipline as a compassionate effort in offering proper guidance but a younger family member may consider such behavior as excessive use of authority and denial to their needs of independence. Further studies may investigate the changing perceptions of adolescent and young adults and discrepancies between generations in Asia.

Lastly, concerning the alarming and significant proportion of low functioning families across East Asian cities, more evidence-based family-based intervention and family support

programmes should be developed to relieve the stress of family members and reduce the negative impact to the children living in these families (Shek and Sun, 2014). Special concerns should be placed on developing culturally adapted intervention. As many family-based intervention and parenting programmes originated from the western countries should be adapted and validated before it fully implemented in Asian families (Fraser and Galinsky, 2010). Intervention programmes with theoretical foundation that integrates with Asian culture and values should be promoted. For example, many eastern parents express their difficulties in applying western behavioural management principles such as rewards and praises (Lau, 2006). These parents may find mindful parenting based on eastern traditions that promotes the qualities of being non-judgmental and parental self-regulation more consistent with own culture and values (Lo, Yeung et al, in press). Parents can benefit from mindfulness training that can regulate their stress arising from strong parenting expectation and difficulties encountering in managing challenging child behaviours and intergenerational conflicts (Lo, Wong et al., in press).

## **Conclusion**

This study was an exploratory study of family functioning across seven East Asian regions. It has confirmed the importance of family to individual's well-being. In order to enhance our knowledge about families in transitions, more collaboration among official and unofficial organizations in Asian countries should be strengthened. More empirical studies in this topic can enhance our knowledge of Asian families and improve our evidence-based family practice.

## **Acknowledgements**

The authors would like to express our appreciation to the Research and Training Committee of the Consortium of Institutes on Family in the Asian Region (CIFA) for the support in the coordinating this study.

## References

- Adams, G. A., King, L. A., & King, D. W. (1996). Relationships of job and family involvement, family social support, and work-family conflict with job and life satisfaction. *Journal of Applied Psychology, 81*, 411–420.
- Alesina, A., & Giuliano, P. (2010). The power of the family. *Journal of Economic Growth, 15*, 93–125.
- Amato, P. R. (2000). The consequences of divorce for adults and children. *Journal of Marriage and Family, 62*, 1269-1287.
- Aseltine, R. H. (1996). Pathways linking parental divorce with adolescent depression. *Journal of Health and Social Behavior, 37*, 133-148.
- Battaglia, M. (2008). Convenience sampling. In Lavrakas, P.J. (ed.) *Encyclopedia of survey research methods (p.149)*. Thousand Oaks, CA: SAGE.
- Bauserman, R. (2012). A meta-analysis of parental satisfaction, adjustment, and conflict in joint custody and sole custody following divorce. *Journal of Divorce and Remarriage, 53*, 464-488.
- Bennett, D. A. (2001). How can I deal with missing data in my study?. *Australian and New Zealand Journal of Public Health, 25*, 464-469.
- Bluestein, D., & Rutledge, C. M. (1993). Family relationships and depressive symptoms preceding induced abortion. *Family Practice Research Journal, 13*, 149-156.
- Botha, F., & Booysen, F. (2014). Family functioning and life satisfaction and happiness in South African households. *Social Indicators Research, 119*, 163-182.
- Canda, E.R. (2013). Filial piety and care for elders: A contested Confucian virtue reexamined. *Journal of Ethnic & Cultural Diversity in Social Work, 22*, 213-234.
- Cao, X., Jiang, X., Li, X., Hui Lo M., and Li, R. (2013). Family Functioning and Its Predictors among Disaster Bereaved Individuals in China: Eighteen Months after the Wenchuan Earthquake. *PLOS One*, doi: 10.1371/journal.pone.0060738.
- Census and Statistics Department. (2006). *Quarterly report on general household survey*. Hong Kong: General Household Survey Section, Census and Statistics Department.
- Chan, C.L.W., Ho, A.H.Y., Leung, P.P.Y., Chochinov, H.M., Neimeyer, R.A., Pang, S.M.C., and Tse, D.M.W. (2012). The blessings and the curses of filial piety on dignity at the end of life: Lived experience of Hong Kong Chinese adult children caregivers. *Journal of Ethnic and Cultural Diversity in Social Work, 21*, 277-296.
- Chan, Y. C. (2015). Preventing and managing conflict in the family. In S. R. Quah (Eds.), *Routledge Handbook of Families in Asia* (pp. 303-317). London: Routledge.
- Chao, J., Zyzanski, S., & Flocke, S. (1998). Choosing a family level indicator of family function. *Families, Systems, and Health, 16*, 367-373.
- Chen, Y.C., & Li, J.A. (2014). Family change in East Asia. in Treas, J., Scott, J. & Richards, M. (eds.) *The Wiley Blackwell Companion to the Sociology of Families (pp.61-82)*. West Sussex, UK: John Wiley.
- Cheung, C. & Kwan, A.Y.H. (2009). The erison of filial piety by modernization in Chinese cities. *Ageing & Society, 29*, 179-198.
- Cheung, P. P. (2015). Fertility trends in Asia. In S. R. Quah (Eds.), *Routledge Handbook of Families in Asia* (pp. 138-149). London: Routledge.
- Choi, Y., Kim, Y.S., Kim, S.Y., and Park, I.J.K. (2013). Is Asian American parenting controlling and harsh? Empirical testing of relationships between Korean American and Western parenting measures. *Asian American Journal of Psychology, 4*, 19-29.

- Chung, H., and Gale, J. (2009). Family functioning and self-differentiation: A cross-cultural examination. *Contemporary Family Therapy*, 31, 19-33.
- Cui, Y., Hong, W., Su, Y., and Liu, X. (2012). A current situation survey and influential factors of domestic violence in seven provinces and cities of China. *Chinese Journal of Clinical Psychology*, 20, 360-362.
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: the indirect role of parental expectations and the home environment. *Journal of Family Psychology*, 19, 294-304.
- Department of Statistics. (2014). *Household Income and Basic Amenities Survey Report 2014*. Putrajaya, Malaysia: author.
- Deutsch, F.M. (2006). Filial piety, patrilineality, and China's one-child policy. *Journal of Family Issues*, 27, 366-389.
- Directorate General of Budget, Accounting and Statistics. (2014). Survey of family income and expenditure. Taipei, Taiwan, Republic of China: Author.
- Dubow, E. F., Boxer, P., & Huesmann, L. R. (2009). Long-term effects of parents' education on children's educational and occupational success: Mediation by family interactions, child aggression, and teenage aspirations. *Merrill-Palmer Quarterly*, 55, 224-249.
- Feinstein, L., Duckworth, K., & Sabates, R. (2008). *Education and the Family: Passing Success across the Generations*. London: Routledge.
- Fraser, M.W., and Galinsky, M.J. (2010). Steps in intervention research: Designing and developing social programs. *Research on Social Work Practice*, 20, 459-466.
- Graham J.W. (2012). *Analysis of missing data*. In Graham, J.W. (ed.) *Missing data: Analysis and design (pp.47-69)*. New York: Springer.
- Hardaway, C. R., Wilson, M. N., Shaw, D. S., & Dishion, T. J. (2012). Family functioning and externalizing behaviour among low-income children: Self-regulation as a mediator. *Infant and Child Development*, 21, 67-84.
- Hilbert, G. A. (1994). Cardiac patients and spouses family functioning and emotions. *Clinical Nursing Research*, 3, 243-252.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Culture and Organization: Software of the mind: Intercultural cooperation and its importance for survival (3rd ed.)*. New York: McGraw Hill.
- Hornberger, L. B., Zabriskie, R. B., & Freeman, P. (2010). Contributions of family leisure to family functioning among single-parent families. *Leisure Sciences*, 32, 143-161.
- Hsiao, C. Y. (2014). Family demands, social support and family functioning in Taiwanese families rearing children with Down syndrome. *Journal of Intellectual Disability Research*, 58, 549-559.
- Jones, G. W. (2015). Divorce trends and patterns in Asia. In S. R. Quah (Eds.), *Routledge Handbook of Families in Asia* (pp. 332-344). London: Routledge.
- Keitner, G. I., Ryan, C. E., Miller, I. W., Kohn, R., Bishop, D. S., & Epstein, N. B. (1995). Role of the family in recovery and major depression. *American Journal of Psychiatry*, 152, 1002-1008.
- Kim, U., Triandis, H.C., Kagitcibasi, C., Choi, S. C., & Yoon, G. (1994). *Individualism and Collectivism: Theory, Method, and Application*. London: Sage.
- Klebanov, P. K., Brooks-Gunn, J., & Duncan, G. J. (1994). Does neighborhood and family poverty affect mothers' parenting, mental health, and social support? *Journal of Marriage and the Family*, 56, 441-455.

- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*, 606-613.
- Lau, A.S. (2006). Making the case for selective and directed cultural adaptations of evidence-based treatments: Examples from parent training. *Clinical Psychology: Science and Practice*, *13*, 295-310.
- Lee, W., Nakamura, S., Chung, M.J., Chun, Y.J., Fu, M., Liang, S., and Liu, C. (2013). Asian Couples in negotiation: A mixed-method observational study of cultural variations across five Asian regions. *Family Process*, *52*, 499-518.
- Lempers, J. D., Clark-Lempers, D., & Simons R. L. (1989). Economic hardship, parenting, and distress in adolescence. *Child Development*, *60*, 25-39.
- Liao, P. S., Fu, Y. C., & Yi, C. C. (2005). Perceived quality of life in Taiwan and Hong Kong: An intra-culture comparison. *Journal of Happiness Studies*, *6*, 43-67.
- Lin, L., Huang, C., & Wang, W. (2015). Parenting in Contemporary China: The dynamics of interdependence and independence. Nicolas, G., Bejarano, A., & Lee, D.L. (eds.) *Contemporary parenting: A Global Perspective* (pp.82-104). New York: Taylor and Francis.
- Lo, H. H. M., Yeung, J.W.K., Duncan, L.G., Chan, S.K.C., Szeto, M.P., Ma, Y., Siu, A.F.Y., Choi, C.W., Chow, K.W., & Ng, S.M. (in press). Validation of the Interpersonal Mindfulness in Parenting questionnaire in Hong Kong Chinese. *Mindfulness*. DOI: 10.1007/s12671-017-0879-7.
- Lo, H. H. M., Wong, S.W. L., Wong, J.Y. H., Yeung, J.W. K., Snel, E., & Wong, S. Y. S. (in press). The effect of family-based mindfulness intervention on ADHD symptomology in young children and their parents: a randomized controlled trial. *Journal of Attention Disorders*. DOI: 10.1177/1087054717743330.
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, *46*, 137-155.
- Ma, J. L., Wong, T. K., Lau, L. K., & Pun, S. H. (2009). Perceived family functioning and family resources of Hong Kong families: Implications for social work practice. *Journal of Family Social Work*, *12*, 244-263.
- Mandara, J., & Murray, C. B. (2000). Effects of parental marital status, income, and family functioning on African American adolescent self-esteem. *Journal of Family Psychology*, *14*, 475-490.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implication for cognition, emotion, and motivation. *Psychological Review*, *98*, 224– 253.
- Martin, M., & Westerhof, G. J. (2003). Do you need to have them or should you believe you have them? Resources, their appraisal, and well-being in adulthood. *Journal of Adult Development*, *10*, 99–112.
- Masheter, C. (1991). Postdivorce relationships between ex-spouses: The roles of attachment and interpersonal conflict. *Journal of Marriage and Family*, *53*, 103-110.
- McLeod, J., Kruttschnitt, C, & Dornfeld, M. (1994). Does parenting explain the effects of structural conditions on children's antisocial behavior? A comparison of blacks and whites. *Social Forces*, *73*, 575-604.
- Mengel, M. (1987). The use of the family APGAR in screening for family dysfunction in a family practice center. *Journal of Family Practice*, *24*, 394-398.

- Mistry, R. S., Vandewater, E. A., Huston, A. C., & McLoyd, V. C. (2002). Economic well-being and children's social adjustment: The role of family process in an ethnically diverse low-income sample. *Child Development, 73*, 935-951.
- Murphy, J. M., Kelleher, K., Pagano, M. E., Stulp, C., Nutting, P. A., Jellinek, M. S., ... & Childs, G. E. (1998). The family APGAR and psychosocial problems in children: a report from ASPN and PROS. *Journal of Family Practice, 46*, 54-64.
- Nan, H., Ni, M. Y., Lee, P. H., Tam, W. W., Lam, T. H., Leung, G. M., & McDowell, I. (2014). Psychometric evaluation of the Chinese version of the subjective happiness scale: Evidence from the Hong Kong FAMILY Cohort. *International Journal of Behavioral Medicine, 21*, 646-652.
- National Bureau of Statistics of China (2015). *China Statistical Yearbook 2015*. Retrieved from <http://www.stats.gov.cn/tjsj/ndsj/2015/indexeh.htm>.
- North, R. J., Holahan, C. J., Moos, R. H., & Cronkite, R. C. (2008). Family support, family income, and happiness: A 10-year perspective. *Journal of Family Psychology, 22*, 475-483.
- Osteria, T. S. (2015). Singlehood as a lifestyle in Asia. In S. R. Quah (Eds.), *Routledge Handbook of Families in Asia* (pp. 93-110). London: Routledge.
- Pardeck, J. T., Yuen, F. K., Daley, J. G., & Hawkins, C. L. (1998). Social work assessment and intervention through family health practice. *Family Therapy, 25*, 25-39.
- Park, H., & Sha, M. (2015). Do different recruitment methods reach different Asian demographics? *Survey Practice, 8* (3), 1-7.
- Park, S., & Kang, S. (2007). Korean American elders. In P. J. Kolb (Ed.), *Social work practice with ethnically and racially diverse nursing home residents and their families*, pp. 162-190. New York, NY: Columbia University Press.
- Pimentel, E. E. (2000). Just how do I live thee: marital relationships in Urban China. *Journal of Marriage and Family, 62*, 32 - 47.
- Quah, S. R. (2015). *Routledge Handbook of Families in Asia*. Abingdon, Oxon; New York: Routledge.
- Schafer, J. L. (1999). Multiple imputation: a primer. *Statistical Methods in Medical Research, 8*, 3-15.
- Sheeber, L., Hops, H., & Davis, B. (2001). Family processes in adolescent depression. *Clinical Child and Family Psychology Review, 4*, 19-35.
- Shek, D. T. (2001). Paternal and maternal influences on family functioning among Hong Kong Chinese families. *The Journal of Genetic Psychology, 162*, 56-74.
- Shek, D. T. L., & Sun, R. C. F. (2014). Parenting in Hong Kong: traditional Chinese cultural roots and contemporary phenomena. In H. Selin (Ed.), *Parenting across cultures: childrearing, motherland and fatherhood in non-western cultures. Science across cultures: the history of non-western science* (pp. 25-38). New York: Springer. [https://doi.org/10.1007/978-94-007-7503-9\\_3](https://doi.org/10.1007/978-94-007-7503-9_3).
- Singapore Department of Statistics. (2015). *Key household income trends, 2015*. Singapore: Department of Statistics.
- Smilkstein, G., Ashworth, C., & Montano, D. (1982). Validity and reliability of the Family APGAR as a test of family function. *Journal of Family Practice, 15*, 303-311.
- Statistics Korea. (2016). Average monthly income & expenditure (whole excl.1 person and farm). Retrieved from [http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT\\_1L9H002&conn\\_path=I2&language=en](http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1L9H002&conn_path=I2&language=en)

- Sung, K.T. (1995). Measures and dimensions of filial piety in Korea. *Gerontologist, 35*, 240-247.
- Tsai, S. Y., & Sun, W. J. (2013). Evaluating the satisfaction of immigrant women from a rural community regarding family functioning and health-related quality of life. *Women and Health, 53*, 135-153.
- Turner, R. A., Irwin, C. E., & Millstein, S. G. (1991). Family structure, family processes, and experimenting with substances during adolescence. *Journal of Research on Adolescence, 1*, 93-106.
- Umberson, D. (1987). Family status and health behaviors: Social control as a dimension of social integration. *Journal of Health and Social Behavior, 28*, 306-319.
- United Nations Development Program. (2008). *Human development report: Capacity development: Empowering people and institutions*. Geneva: United Nations Development Program.
- Ware, J. E., Kosinski, M., Keller, S. D. (1995). *SF-12: How to Score the SF-12 Physical and Mental Health Summary Scales*. Boston, MA: The Health Institute, New England Medical Center.
- Yamato, R. (2006). Changing attitudes towards elderly dependence in postwar Japan. *Current Sociology, 54*, 273-291.
- Yang, C. F. (1988). Familism and development: an examination of the role of family in contemporary China, in Sinha, D. and Kao, H.S.R. (eds.) *Social Values and Development: Asian Perspectives (pp.93-123)*. London: Sage Publications.
- Yen, C.-F., Yang, M.-S., Yang, M.-J., Su, Y.-C., Wang, M.-H., and Lan, C.-M. (2008). Childhood physical and sexual abuse: Prevalence and correlates among adolescents living in rural Taiwan. *Child Abuse & Neglect, 32*, 429-438.



Exploratory Study on Relationships between Family Functioning, 25  
Demographics and Individual Well-Being in East Asia

**Table 1a** Demographics of samples ( $N = 3834$ )

	Age (M)	Sex (F)	Marital Status (Married)	Primary or below	Education Secondary	Tertiary or above	Employed currently	No. of family members (mean)	Income (Low) <sup>#</sup>
Total ( $N = 3834$ )	42.20	68.67%	85.62%	4.78%	39.83%	55.40%	77.25%	4.05	38.81%
Hong Kong ( $n = 589$ )	43.84	77.95%	87.70%	8.36%	66.20%	25.44%	69.02%	3.74	30.73%
Guangzhou ( $n = 441$ )	36.31	67.67%	93.65%	8.64%	41.36%	50.00%	91.82%	3.99	45.05%
Shanghai ( $n = 422$ )	50.07	42.65%	72.01%	10.90%	45.97%	43.13%	56.53%	4.22	64.22%
Taipei ( $n = 1220$ )	37.92	88.94%	83.72%	0.99%	30.26%	68.75%	74.18%	4.44	44.88%
Seoul ( $n = 735$ )	48.92	47.62%	94.42%	0.82%	22.86%	76.33%	85.35%	4.82	82.99%
Singapore ( $n = 220$ )	41.67	62.27%	85.45%	6.36%	45.45%	48.18%	89.55%	4.28	47.73%
Kuala Lumpur ( $n = 207$ )	40.08	60.29%	78.92%	9.00%	61.50%	29.50%	90.63%	4.46	29.21%

<sup>#</sup>Follow the European Union which set the poverty threshold as 60% of median household income

**Table 1b** Summary of statistics of variables ( $N = 3834$ )

	Family APGAR		Subjective happiness		Mental health		Depression		Physical health	
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>
Total ( $N = 3834$ )	7.07	2.78	18.99	4.40	43.94	9.97	5.15	4.78	47.58	8.12
Hong Kong ( $n = 589$ )	6.22	2.54	18.47	4.27	44.87	10.64	5.47	5.22	46.51	8.24
Guangzhou ( $n = 441$ )	6.88	2.27	19.26	3.60	45.60	8.65	5.29	4.51	46.55	8.06
Shanghai ( $n = 422$ )	8.00	2.81	19.12	4.80	47.13	10.03	4.76	5.23	45.17	9.45
Taipei ( $n = 1220$ )	6.51	2.98	18.36	4.86	45.05	10.31	5.49	4.51	47.97	7.52
Seoul ( $n = 735$ )	7.99	2.59	19.73	3.89	37.18	6.50	4.37	4.48	49.65	7.55
Singapore ( $n = 220$ )	7.76	2.48	19.98	4.21	47.29	9.10	5.10	4.86	47.84	8.53
Kuala Lumpur ( $n = 207$ )	7.22	2.46	19.63	3.66	45.86	8.77	5.83	5.08	47.35	7.94

Exploratory Study on Relationships between Family Functioning, 27  
Demographics and Individual Well-Being in East Asia

**Table 2a** Family APGAR scores using cutoff point of 6 and in low, moderate and high groups

	Mean (SD)	APGAR	Using cutoff point of 6		In low, moderate and high groups		
			Dysfunction (score 0-5)	Normal (score 6-10)	Low (score 0-3)	Moderate (score 4-7)	High (score 8-10)
Total ( <i>N</i> = 3798)	7.07 (2.78)	N	1182	2616	428	1446	1924
		%	31.1	68.9	11.3	38.1	50.7
Hong Kong ( <i>n</i> = 589)	6.22 (2.54)	N	239	349	81	309	198
		%	40.6	59.3	13.8	52.5	33.6
Guangdon g ( <i>n</i> = 421)	6.88 (2.27)	N	119	302	30	212	179
		%	28.3	71.7	7.1	50.4	42.5
Shanghai ( <i>n</i> = 422)	8.00 (2.81)	N	99	323	32	107	283
		%	23.5	76.5	7.6	25.4	67
Taipei ( <i>n</i> = 1209)	6.51 (2.98)	N	464	745	201	486	522
		%	38.4	61.6	16.6	40.2	43.2
Seoul ( <i>n</i> = 735)	7.99 (2.59)	N	156	579	48	187	500
		%	21.2	78.8	6.5	25.4	68
Singapore ( <i>n</i> = 220)	7.76 (2.48)	N	52	168	17	67	136
		%	23.6	76.4	7.7	30.5	61.8
Kuala Lumpur ( <i>n</i> = 202)	7.28 (2.41)	N	52	150	17	78	107
		%	25.5	73.5	8.4	38.6	53

**Table 2b** Regression analyses for determining whether significant differences existed in family APGAR (Hong Kong as reference)

DV	Variables of interest	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>
Family APGAR	Control variables:	–	–	–	–
	Age	.00	.01	.01	–
	Sex	-.07	.12	-.01	–
	Employment	-.44	.13	-.07**	–
	Income per head	.25	.06	.09***	–
	Education	.27	.10	.06**	–
	Marital status	-.67	.08	-.17***	–
	Cities compared with HK	–	–	–	–
	Guangzhou	.43	.22	.04	1.97*
	Shanghai	1.65	.27	.15	6.16***
	Taipei	.10	.18	.02	.56
	Seoul	1.19	.18	.18	6.59***
	Singapore	1.23	.23	.11	5.41***
	Kuala Lumpur	1.10	.25	.09	4.36***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*B* = unstandardized coefficient; *SE B* = standard error for unstandardized coefficient;  $\beta$  = standardized coefficient; *t* = *t* value for the size of the difference of the corresponding variable between a city and Hong Kong (as the reference)

Exploratory Study on Relationships between Family Functioning, 29  
Demographics and Individual Well-Being in East Asia

**Table 3** Hierarchical regression analyses for income per head, education and marital status in predicting APGAR

Region(s)	Variables of interest	<i>B</i>	<i>SE B</i>	$\beta$	$\Delta R^2$	<i>F for <math>\Delta R^2</math></i>
All ( <i>N</i> = 3240)	Age	.02	.01	.06**	–	–
	Sex	.33	.11	.05**	–	–
	Employment	-.28	.12	-.04*	–	–
	Income per head	.33	.05	.12***	.01	40.03***
	Education	.18	.09	.04	.00	3.61
	Marital status	-.59	.07	-.15***	.02	63.48***
Hong Kong ( <i>n</i> = 403)	Age	.02	.02	.06	–	–
	Sex	-.48	.32	-.08	–	–
	Employment	-.64	.31	-.11*	–	–
	Income per head	-.01	.13	.00	.00	.00
	Education	.15	.26	.03	.00	.32
	Marital status	-.40	.19	-.11*	.01	4.63*
Guangdong ( <i>n</i> = 297)	Age	.03	.02	.10	–	–
	Sex	-.36	.29	-.07	–	–
	Employment	-.39	.50	-.05	–	–
	Income per head	-.16	.19	-.05	.00	.68
	Education	.33	.24	.09	.01	1.97
	Marital status	-.18	.30	-.03	.00	.35
Shanghai ( <i>n</i> = 364)	Age	-.04	.02	-.11	–	–
	Sex	-.29	.43	-.04	–	–
	Employment	-1.09	.53	-.14*	–	–
	Income per head	-.30	1.21	-.02	.00	.06
	Education	.29	.53	.04	.00	.30
	Marital status	-.69	.20	-.24**	.05	12.00**
Taipei ( <i>n</i> = 1053)	Age	.04	.02	.07*	–	–
	Sex	.94	.34	.08**	–	–
	Employment	-.75	.23	-.10**	–	–
	Income per head	.87	.17	.16***	.02	26.47***
	Education	.27	.20	.04	.00	1.72
	Marital status	-.79	.15	-.16***	.02	27.91***
Seoul ( <i>n</i> = 735)	Age	-.03	.01	-.12**	–	–
	Sex	-.07	.21	-.01	–	–
	Employment	.39	.24	.07	–	–
	Income per head	.15	.10	.06	.00	2.48
	Education	.41	.23	.07	.00	3.25
	Marital status	-.66	.18	-.14***	.02	13.55***
Singapore ( <i>n</i> = 220)	Age	.00	.02	-.01	–	–
	Sex	.38	.33	.07	–	–
	Employment	.33	.56	.04	–	–

	Income per head	.75	.19	.29***	.06	15.10***
	Education	-.36	.32	-.09	.01	1.24
	Marital status	-.95	.24	-.26***	.06	15.00***
Kuala Lumpur (n = 168)	Age	.04	.02	.13	–	–
	Sex	.14	.38	.03	–	–
	Employment	-.04	.62	-.01	–	–
	Income per head	.29	.20	.12	.01	2.16
	Education	.20	.32	.05	.00	.39
	Marital status	.25	.28	.07	.01	.81

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

$B$  = unstandardized coefficient;  $SE B$  = standard error for unstandardized coefficient;  $\beta$  = standardized coefficient;  $\Delta R^2$  = change of coefficient of determination that the corresponding variable (e.g., income per head) was entered in the second step of hierarchical regression after the other 5 variables (i.e., age, sex, employment, education and marital status) were entered in the first step;  $F$  for  $\Delta R^2$  =  $F$  value for change of coefficient of determination

**Table 4** Hierarchical regression analyses for family APGAR in predicting subjective happiness

Region(s)	Variable	<i>B</i>	$\frac{SE}{B}$	$\beta$	<i>R</i> <sup>2</sup>	<i>F</i> for $\Delta R^2$
All ( <i>N</i> = 3563)	Family APGAR without control variables	.72	.02	.46***	.21***	–
	Control variables:	–	–	–	.05***	–
	Sex	.36	.16	.04*	–	–
	Income per head	.52	.07	.12***	–	–
	Marital status	-.82	.11	-.13***	–	–
	Education	.60	.14	.08***	–	–
	Family APGAR with control variables:	.69	.02	.43***	.23***	792.35***
	Sex	-.03	.15	.00	–	–
	Income per head	.37	.07	.09***	–	–
Hong Kong ( <i>n</i> = 514)	Family APGAR without control variables	.87	.06	.52***	.27***	–
	Control variables	–	–	–	.05***	–
	Family APGAR with control variables	.88	.07	.53***	.32***	183.55***
Guangdong ( <i>n</i> = 359)	Family APGAR without control variables	.35	.08	.23***	.05***	–
	Control variables	–	–	–	.03*	–
	Family APGAR with control variables	.31	.09	.20***	.07***	12.67***
Shanghai ( <i>n</i> = 419)	Family APGAR without control variables	.93	.07	.54***	.29***	–
	Control variables	–	–	–	.34***	–
	Family APGAR with control variables	.60	.07	.35***	.43***	65.98***
Taipei ( <i>n</i> = 1121)	Family APGAR without control variables	.65	.04	.40***	.16***	–
	Control variables	–	–	–	.04***	–
	Family APGAR with control variables	.61	.05	.37***	.16***	165.06***
Seoul ( <i>n</i> = 735)	Family APGAR without control variables	.79	.05	.53***	.28***	–
	Control variables	–	–	–	.02**	–
	Family APGAR with control variables	.78	.05	.52***	.29***	266.44***
Singapore ( <i>n</i> = 220)	Family APGAR without control variables	.84	.10	.49***	.24***	–
	Control variables	–	–	–	.10***	–

	Family APGAR with control variables	.82	.11	.48***	.29***	57.94***
Kuala Lumpur ( <i>n</i> = 195)	Family APGAR without control variables	.66	.09	.45***	.20***	–
	Control variables	–	–	–	.08**	–
	Family APGAR with control variables	.69	.10	.46***	.30***	52.64***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

$B$  = unstandardized coefficient;  $SE B$  = standard error for unstandardized coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination of the corresponding model;  $F$  for  $\Delta R^2 = F$  value for change of coefficient of determination that Family APGAR was entered in the second step of hierarchical regression after the other 4 variables (i.e., sex, employment, income per head, marital status and education) were entered in the first step



**Table 5** Hierarchical regression analyses for family APGAR in predicting mental health

Region(s)	Variable	<i>B</i>	$\frac{SE}{B}$	$\beta$	<i>R</i> <sup>2</sup>	<i>F</i> for $\Delta R^2$
All ( <i>N</i> = 3500)	Family APGAR without control variables	.79	.06	.22***	.05***	–
	Control variables:	–	–	–	.03***	–
	Sex	-.45	.37	-.02	–	–
	Income per head	– 1.49	.17	-.16***	–	–
	Marital status	– 1.53	.26	-.10***	–	–
	Education	.19	.31	.01	–	–
	Family APGAR with control variables:	.85	.06	.24***	.09***	199.96***
	Sex	-.98	.36	-.05**	–	–
	Income per head	– 1.68	.16	-.18***	–	–
	Marital status	-.99	.26	-.07***	–	–
Education	-.14	.31	-.01	–	–	
Hong Kong ( <i>n</i> = 489)	Family APGAR without control variables	1.71	.16	.41***	.17***	–
	Control variables	–	–	–	.03*	–
	Family APGAR with control variables	1.80	0.18	0.44***	.22***	103.99***
Guangdong ( <i>n</i> = 326)	Family APGAR without control variables	.89	.19	.23***	.06***	–
	Control variables	–	–	–	.05**	–
	Family APGAR with control variables	.81	.22	.21***	.10***	14.12***
Shanghai ( <i>n</i> = 421)	Family APGAR without control variables	1.62	.16	.46***	.21***	–
	Control variables	–	–	–	.22***	–
	Family APGAR with control variables	1.08	.17	.30***	.29***	40.10***
Taipei ( <i>n</i> = 1120)	Family APGAR without control variables	1.41	.09	.41***	.17***	–
	Control variables	–	–	–	.04***	–
	Family APGAR with control variables	1.37	.10	.40***	.19***	195.13***
Seoul ( <i>n</i> = 735)	Family APGAR without control variables	-.88	.09	-.35***	.12***	–
	Control variables	–	–	–	.04***	–
	Family APGAR with control variables	-.87	.09	-.35***	.15***	99.38***
Singapore ( <i>n</i> = 220)	Family APGAR without control variables	1.50	.23	.41***	.17***	–

	Control variables	–	–	–	.08**	–
	Family APGAR with control variables	1.36	.25	.37***	.19***	30.43***
Kuala Lumpur ( <i>n</i> = 189)	Family APGAR without control variables	.70	.25	.19**	.04**	–
	Control variables	–	–	–	.02	–
	Family APGAR with control variables	.83	.28	.22**	.07*	8.52**

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*B* = unstandardized coefficient; *SE B* = standard error for unstandardized coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination of the corresponding model; *F for  $\Delta R^2$*  = *F* value for change of coefficient of determination that Family APGAR was entered in the second step of hierarchical regression after the other 4 variables (i.e., sex, employment, income per head, marital status and education) were entered in the first step

**Table 6** Hierarchical regression analyses for family APGAR in predicting depression

Region(s)	Variable	<i>B</i>	$\frac{SE}{B}$	$\beta$	<i>R</i> <sup>2</sup>	<i>F</i> for $\Delta R^2$
All ( <i>N</i> = 3460)	Family APGAR without control variables	-.63	.03	-.36***	.13***	–
	Control variables:	–	–	–	.05***	–
	Sex	-.69	.17	-.07***	–	–
	Income per head	-.42	.08	-.09***	–	–
	Marital status	.96	.12	.14***	–	–
	Education	-.56	.15	-.07***	–	–
	Family APGAR with control variables:	-.58	.03	-.34***	.16***	437.06***
	Sex	-.36	.16	-.04*	–	–
	Income per head	-.32	.07	-.07***	–	–
Hong Kong ( <i>n</i> = 500)	Family APGAR without control variables	-.76	.08	-.37***	.14***	–
	Control variables	–	–	–	.08***	–
	Family APGAR with control variables	-.75	.08	-.38	.22***	81.69***
Guangdong ( <i>n</i> = 342)	Family APGAR without control variables	-.51	.10	-.26***	.07***	–
	Control variables	–	–	–	.00	–
	Family APGAR with control variables	-.50	.10	-.28***	.08***	25.14***
Shanghai ( <i>n</i> = 422)	Family APGAR without control variables	-.85	.08	-.46***	.21***	–
	Control variables	–	–	–	.19***	–
	Family APGAR with control variables	-.61	.09	-.33***	.27***	46.11***
Taipei ( <i>n</i> = 1056)	Family APGAR without control variables	-.62	.04	-.41***	.17***	–
	Control variables	–	–	–	.06***	–
	Family APGAR with control variables	-.58	.04	-.39***	.19***	172.18***
Seoul ( <i>n</i> = 735)	Family APGAR without control variables	-.40	.06	-.23***	.05***	–
	Control variables	–	–	–	.02**	–
	Family APGAR with control variables	-.38	.06	-.22***	.07***	37.12***
Singapore ( <i>n</i> = 220)	Family APGAR without control variables	-.89	.12	-.45***	.21***	–
	Control variables	–	–	–	.13***	–

	Family APGAR with control variables	-.76	.13	-.38***	.26***	35.50***
Kuala Lumpur ( <i>n</i> = 185)	Family APGAR without control variables	-.50	.15	-.24**	.06**	–
	Control variables	–	–	–	.04	–
	Family APGAR with control variables	-.55	.16	-.26**	.10**	12.37**

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

$B$  = unstandardized coefficient;  $SE B$  = standard error for unstandardized coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination of the corresponding model;  $F$  for  $\Delta R^2 = F$  value for change of coefficient of determination that Family APGAR was entered in the second step of hierarchical regression after the other 4 variables (i.e., sex, employment, income per head, marital status and education) were entered in the first step

**Table 7** Hierarchical regression analyses for family APGAR in predicting physical health

Region(s)	Variable	<i>B</i>	<i>SE</i> <i>B</i>	$\beta$	<i>R</i> <sup>2</sup>	<i>F</i> for $\Delta R^2$
All ( <i>N</i> = 3500)	Family APGAR without control variables	.55	.05	.19***	.04***	–
	Control variables:	–	–	–	.06***	–
	Sex	.67	.29	.04*	–	–
	Income per head	.89	.13	.12***	–	–
	Marital status	–	.21	-.09***	–	–
	Education	1.10	.25	.14***	–	–
	Family APGAR with control variables:	.42	.05	.15***	.08***	74.51***
	Sex	.39	.29	.02	–	–
	Family income	.80	.13	.10***	–	–
	Marital status	-.83	.21	-.07***	–	–
Education	1.81	.25	.13***	–	–	
Hong Kong ( <i>n</i> = 489)	Family APGAR without control variables	.60	.14	.18***	.03***	–
	Control variables	–	–	–	.04**	–
	Family APGAR with control variables	.52	.14	.17***	.07***	13.14***
Guangdong ( <i>n</i> = 326)	Family APGAR without control variables	.23	.18	.07	.00	–
	Control variables	–	–	–	.04*	–
	Family APGAR with control variables	.14	.19	.04	.04	.51
Shanghai ( <i>n</i> = 421)	Family APGAR without control variables	.98	.16	.29***	.09***	–
	Control variables	–	–	–	.19***	–
	Family APGAR with control variables	.39	.17	.12*	.20***	5.23*
Taipei ( <i>n</i> = 1120)	Family APGAR without control variables	.41	.07	.17***	.03***	–
	Control variables	–	–	–	.01**	–
	Family APGAR with control variables	.39	.08	.16***	.04***	25.11***
Seoul ( <i>n</i> = 735)	Family APGAR without control variables	.80	.10	.28***	.08**	–
	Control variables	–	–	–	.03***	–
	Family APGAR with control variables	.78	.10	.27***	.10***	55.81***
Singapore ( <i>n</i> = 220)	Family APGAR without control variables	.42	.23	.12	.02	–
	Control variables	–	–	–	.17***	–

	Family APGAR with control variables	.18	.23	.05	.17***	.61
Kuala Lumpur ( <i>n</i> = 189)	Family APGAR without control variables	.25	.23	.08	.01	–
	Control variables	–	–	–	.06*	–
	Family APGAR with control variables	.12	.26	.04	.06	.21

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*B* = unstandardized coefficient; *SE B* = standard error for unstandardized coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination of the corresponding model; *F for  $\Delta R^2$*  = *F* value for change of coefficient of determination that Family APGAR was entered in the second step of hierarchical regression after the other 4 variables (i.e., sex, employment, income per head, marital status and education) were entered in the first step