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The role of Mindful Parenting in the relationship of parent and child mental health in Taiwan Chinese

Samuel Shih-Chih Wang[a], Herman Hay Ming Lo[b]*

[a] Department of Health and Welfare, University of Taipei, Taipei City, Taiwan

[b] Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, China

*corresponding author

Email: herman.lo@polyu.edu.hk

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Objectives. Parental stress increases child behaviour problems, and mindful parenting is suggested to be a potential moderator. The Interpersonal Mindfulness in Parenting Scale (IM-P) is a self-report measure to assess mindful parenting, and has been revised into Dutch, Portuguese, Hong Kong, and Mainland China versions. The aim of this study was to explore the psychometric properties of the Chinese version of the Interpersonal Mindfulness in Parenting scale in Taiwan Chinese and investigate the relationship of mindful parenting with parent and child mental health. **Methods.** The Chinese version was translated from the original English version. Exploratory factor analysis, construct validity analysis, and moderation analysis were examined in a sample (N = 201) of parents in Taiwan. **Results.** A three-factor structure was found with adequate internal consistency. Significant correlations were found between the IM-P and measures of parent stress, child behaviour problems, and social support from family. Non-judgmental acceptance of child was a significant moderator of the relation between parental stress and child behaviour problems. **Conclusion.** The present research demonstrated that mindful parenting in Taiwan population can be measured through the assessment of three dimensions (Compassion of Child, Interacting with Full Attention, and Nonjudgmental Acceptance of Child) and confirmed that the Chinese version is an adequate measure for the studies of mindful parenting in Taiwan. It further reconfirmed the positive role of mindful parenting in parent and child mental health, as consistent with the western studies

in that research area. Mindful parenting should be further promoted in social work practice and research so that more Chinese families can benefit.

Keywords: Mindful parenting. Interpersonal mindfulness. Mental health. Chinese parents. Chinese children. Taiwan. Reliability and validity.

Introduction

Parental Stress, Child Mental Health and Mindful Parenting

Parental stress as a common indicator of parent mental health is defined as parents' perceived negative emotional experiences, accompanied by physiological, emotional, cognitive and behavioural changes, directed towards altering the stressful event or adapting to its effects (Cronin et al., 2015). The sources of parental stress can be child-rearing, daily life responsibilities or social and environmental circumstances, such as heavy parenting responsibilities, insufficient social support, or financial challenges (Belsky, 1984). Parents often experienced higher levels of stress related to raising children especially when children were in preschool (Crnic et al., 2005). High parental stress can be a risk variable for both parents and children. It was associated with many negative outcomes, including parent depression (Hastings et al., 2006), poorer physical health (Eisenhower et al., 2009) and marital conflicts (Kersh et al., 2006). The accumulated stressful conditions might lead to increase in poor parenting behaviours, which in turn had negative effects on child behaviour problems, including externalizing and internalizing problems, such as attention problem, aggression, social withdrawal and somatic complaint problems (e.g., Baker et al., 2003; Miller-Perrin et al., 2009). Similar patterns between parental stress and child behaviour problems also happened in Chinese regions (e.g., Liu & Wang, 2015; Xing et al., 2011). Moreover, studies found that parental stress and child behaviour problems significantly covaried across time, which suggested a bidirectional causal relationship between them (Neece et al., 2012).

The concept of mindful parenting was first proposed by Kabat-Zinn and Kabat-Zinn (1997) and has been defined as the ability to pay attention to children and parenting intentionally, here and now, and non-judgmentally. Increasing studies have

found that mindful parenting could benefit both parents and children. For parents, mindful parenting was associated with less parenting stress, better mental health, higher levels of positive parenting practices (e.g., warmth and reinforcement) and lower levels of dysfunctional parenting practices (e.g., coercion or hostility), and better collaborative parenting (e.g., Bögels et al., 2014; Corthorn & Milicic, 2016; Gouveia et al., 2016). For children, mindful parenting was associated with better well-being, including physical, emotional, mental, social and behavioural aspects (Medeiros et al., 2016), and less psychopathology, including internalizing and externalizing problems (Geurtzen et al., 2015; Parent et al., 2016).

Moreover, recent studies and meta-analyses suggested that mindful parenting intervention programs could significantly reduce parent stress and psychopathological symptoms, and have a positive influence on children's development, psychological functioning and overall quality of life (e.g., Dehkordian et al., 2017; Lo et al., 2017; Meppelink et al., 2016). A meta-analysis included 25 studies and indicated a small, post-intervention reduction in parenting stress (g=0.34) and a small improvement in child outcomes (g=0.27), and within the six controlled studies, mindful parenting intervention groups reported more significant reduction than control groups (g=0.44) (Burgdorf, Szabo & Abbott, 2019). The potential buffering effects of mindful parenting have also been explored in some studies (e.g. Shaddix, and Duncan, 2016). Two recent studies further suggested mindfulness in regulating parent and child cortisol. A longitudinal study of cortisol levels of 73 mother and infant dyads, maternal mindful parenting moderated the effect of life stress on both mother and infant cortisol stress. In the context of high life stress, maternal mindful parenting predicted lower infant cortisol levels (Laurent et al., 2017). Besides, an outcome study of a family-based mindfulness program reported decreases in diurnal cortisol slopes ($d = 0.50$, $p = 0.04$) and decreases

in evening cortisol for parents (d = 0.50, p =0.04) at the end of intervention, compared with the control group (Ho, Lo, Fong & Choi, 2020).

Mindful Parenting Validated in Different Cultures

The concept of mindful parenting was expanded into a more comprehensive theoretical model by Duncan and colleagues (Duncan, 2007; Duncan et al., 2009), and they designed a corresponding self-reported measure of mindful parenting, the Interpersonal Mindfulness in Parenting Scale (IM-P), which explained the positive effects of mindful parenting in terms of five dimensions, including (1) Listening with Full Attention, (2) Non-judgmental Acceptance of Self and Child, (3) Emotional Awareness of Self and Child, (4) Self-regulation in the Parenting Relationship, and (5) Compassion for Self and Child. This theoretically hypothesized structure was empirically investigated in the Netherlands (de Bruin et al., 2014), Portugal (Moreira & Canavarro, 2017), Hong Kong (Lo et al., 2018) and Mainland China (Pan et al., 2019), and each of them developed their validated versions with different factor structures.

The 29-item Dutch version suggested a six-factor model with subscales: (1) Listening with Full Attention, (2) Compassion for the Child, (3) Non-judgmental Acceptance of Parental Functioning, (4) Emotional Non-reactivity in Parenting, (5) Emotional Awareness of Child, and (6) Emotional Awareness of Self; and its main difference from the original IM-P was that the aspects of compassion and emotional awareness were separated into different factors for the self and the child, instead of being combined into one factor (de Bruin et al. 2014). The 29-item Portuguese version formed a five-factor model with subscales: (1) Listening with Full Attention, (2) Compassion for the Child, (3) Non-judgmental Acceptance of Parental Functioning, (4)

Self-regulation in Parenting, and (5) Emotional Awareness of the Child; and its factor structure was very similar to that of the Dutch version, except that the Emotional Awareness of Self and the Emotional Non-reactivity in Parenting dimensions of the latter were combined to create a single dimension called Self-regulation in Parenting (Moreira & Canavarro, 2017). The 23-item Hong Kong Chinese version was validated in Eastern culture, revealing a four-factor model with subscales: (1) Listening with Full Attention, (2) Emotional Awareness in Parenting, (3) Non-judgmental Acceptance in Parenting, and (4) Compassion for the Child; and its main difference from the previous Western versions of IM-P was that the factors of Emotional Awareness of Child and Emotional Awareness of Parents did not emerge as distinctive factors (Lo et al., 2018). Recently, the 24-item Mainland Chinese version showed a four-factor model with subscales: (1) Interacting with Full Attention, (2) Compassion and Acceptance, (3) Self-regulation in Parenting, and (4) Emotional Awareness of Child (Pan et al., 2019). Its main difference from the previous versions was that most of the deleted items were related to compassion and non-judgmental acceptance of self; its factor structure was more similar to that of the Portuguese version rather than Hong Kong, except that (a) items of Listening with Full Attention were combined with those of Self-regulation in Parenting to form a subscale called Interacting with Full Attention, and (b) items related to compassion and non-judgmental acceptance were combined to form a subscale called Compassion and Acceptance.

Parenting in Chinese Cultures

Hofstede's (1980) proposed the individualism-collectivism construct to help describe the primary distinctions between cultures, which were widely applied to understand differences of parenting beyond Western cultures. For example, China, as a

collectivistic society, would emphasize interdependence and group harmony, thus encouraging parenting practices (e.g., training) which promote children's obedience to group rules (Han et al., 2019). In addition, Confucianism provides a philosophical basis for traditional Chinese parenting practice, including principles of Zhi (knowledge), Li (social norms), Qian (modesty), Chi (shame), Yue (self-restraint), Xiao (filial piety), He (harmonious relationships) and a unique belief about parents' role in children's development, Guan (training) (Luo et al., 2013).

Although Chinese families are still largely influenced by the collectivistic culture and traditional parenting practices, they were also influenced by social transformation in contemporary China, and some parents did not follow traditional parenting prescriptions (Chang et al., 2011). For example, some studies reported that Chinese families do not endorse harsh parenting, and show high levels of warmth and engagement in training their children, which includes using mixed means of control, support, care and concern (e.g., Shek & Sun 2014; Xu et al., 2005). This indicated that a Western, child-centered approach has gradually been infused in contemporary child rearing, particularly among more highly educated Chinese populations (Xu et al., 2014).

Mainland China, Hong Kong and Taiwan share the long tradition of Chinese culture, but they differ greatly in their political-cultural contexts, especially differences in ideological objectives and socialization goals (Ho, 1989), which have significant effects on family functioning and parenting practices. However, few studies of parenting have compared within-ethnic groups of Chinese culture, and to date, only Lai et al.'s (2000) study was found to investigate maternal child-rearing practices in Beijing and Hong Kong, which showed that Hong Kong mothers were more domineering, showed more negative affect to their children, were more anxious, and were more protective than were Beijing mothers. These differences were believed to reflect the

differences in levels of economic stress and competitive natures of society. For Taiwan, studies found that parents in Taiwan described themselves as equally affectionate (Lin & Fu, 1990) and Taiwanese mothers had higher scores on the factor of democratic attitudes in parenting (Chiu, 1987), compared with U.S. counterparts. These earlier unexpected findings challenged that the collectivism and Confucianism could not sufficiently explain the characteristics of parenting practices in Chinese. Such results imply that there may not be a single pattern of parenting in Chinese families of different regions, and suggest that parents in Taiwan may behave differently than parents in Mainland China and Hong Kong. More studies of parenting and mindful parenting should be conducted in different Chinese population to improve our understanding of Chinese parenting and potential value of mindful parenting.

Current Study

Mindful parenting is a concept developed from the west during the last few decades. The relevance to mindful parenting and Chinese families in different Chinese populations are uncertain. The first objective of this study is to assess the psychometric properties of the Chinese translation of the IM-P self-report scale among Taiwan parents. The overall reliability and validity of the scale, and factor structure were investigated using exploratory factor analysis (EFA) and validated in relation to a variety of relevant constructs. The second objective is to investigate the relationship of mindful parenting with parenting stress and child behaviour problems. We hypothesized that the mindful parenting has a moderating effect on the relationship between parenting stress and child behaviour problems. Previous studies suggested that parents' and children's gender might influence the effects of mindful parenting (e.g., Moreira & Canavarro, 2015), so they were included to be control variables in the moderation

analyses.

Methods

Participants and procedures

This study was based on convenient sampling of 201 parent participants, and all participants were recruited with the help of kindergartens and primary schools in Taipei City. A cover letter, a consent form, and the questionnaire were distributed to 250 parents in paper form. An inclusion criterion for this study was that all participants were required to have at least one child who was living with them at the time of questionnaire completion. Parents participated on a voluntary basis without incentive payment. The completion of questionnaire took about 20 minutes. They were asked to return the completed questionnaires and consent form in two separate envelopes to assure anonymity. Parents were requested to fill the full 31-item version of the IM-P (Duncan, 2007), the Eyberg Child Behaviour Inventory (ECBI; Eyberg & Ross, 1978), the Parenting Stress Index Short Form (PSI-SF; Abidin, 1990), the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988), the Kansas Marital Satisfaction Scale (KMSS; Schumm et al., 1983), the Intrinsic Religious Orientation subscale of the Religious Orientation Scale Revised (ROS-R; Gorsuch & McPherson, 1989), and the Brief Measure of Religious Coping (PRCOPE; Pargament et al., 1998). All measures in the questionnaire had been used in the previous study of Hong Kong Chinese population (Lo et al., 2018), and this Taiwan Chinese version of the IM-P Scale was based on the first Hong Kong Chinese version developed by the second author and the original author of the IM-P Dr. L. Duncan (Lo et al., 2018).

This study was approved by the university research office ethics committee of the first author.

Measures

Eyberg Child Behaviour Inventory (ECBI)

This is a widely used 36-item scale used to assess parent perception of disruptive behaviour of their children, which took five to seven minutes to complete. The ECBI has two sub-scores: a Problem Score measuring the extent to which parents are troubled by their children's disruptive behaviours (scored dichotomously as 0 or 1), and an Intensity Score assessing parents' ratings of the intensity of various problem behaviours on a seven-point scale. In this present study, the Cronbach's alphas were 0.92 for Problem Score and 0.77 for Intensity Score.

Parenting Stress Index Short Form (PSI-SF)

This 36-item inventory was developed by Abidin (1990) to assess the perceived sources of difficulties and levels of parenting stress experienced by parents using a five-point response scale, which took five minutes to complete. It has three sub-scales: parental distress, parental-child dysfunctional interaction, and difficult child. The Cronbach's alphas were 0.78 for the total score, and 0.86, 0.76 and 0.73 for three subscales respectively in this study.

Multidimensional Scale of Perceived Social Support (MSPSS)

This 12-item inventory was developed by Zimet et al. (1988) to assess the perceived social support from significant others, family and friends using a seven-point response scale, which took one minute to complete. The Cronbach's alphas were 0.95, 0.95 and 0.88 for three subscales respectively in this study.

Kansas Marital Satisfaction Scale (KMSS)

This 3-item inventory was developed by Schumm et al. (1983) to assess the perceived marital satisfaction using a seven-point response scale, which took less than one minute to complete. The Cronbach's alpha was 1.00.

Intrinsic Religious Orientation subscale of the Religious Orientation Scale Revised (ROS-R) and Brief Measure of Religious Coping (PRCOPE)

Both ROS-R and PRCOPE were selected to explore whether these variables of parental religious involvement overlaps with Mindful Parenting. POS-R consisted of eight items and measured participant's intrinsic religiosity (Gorsuch and McPherson 1989). The seven item PRCOPE investigated participant's positive religious coping (Pargament et al. 1998). They took five minutes to complete. The Cronbach's alpha of the ROS-R and PRCOPE were 0.99 and 0.98 in this study

Demographics

Participants were invited to provide their demographical information including their gender, age, marital status, education level, occupational status, child gender and child age.

Data Analyses

An exploratory factor analysis approach was adopted to examine the factor structure of the Chinese version of IM-P. First, a parallel analysis (PA) was conducted to determine the number of factors. SPSS syntax developed by O'Connor (2000) was used to calculate the mean and the 95th percentile for each of the eigenvalues of 100 randomly generated data sets. The number that real-data eigenvalues from a principal component analysis (PCA) exceeded random data eigenvalues was the criterion to determine the

number of factors to be extracted. Second, EFA by maximum likelihood was then performed, in which Promax rotation was applied to let the extracted factors be correlated with each other, as theoretically, factors of a latent construct should ideally be interrelated. The use of maximum likelihood for factor extraction is preferable to principal components analysis, as the former can estimate weights for the variable items on factors to maximize the probability of having sampled the correlation matrix from a multivariate normally distributed population than the latter approach. All data analyses were performed by SPSS 25.0. Kaiser-Meyer-Olkin value was calculated, and Bartlett's test was conducted, in order to determine the sampling and correlation adequacy for the factoring procedure. Cronbach's alphas were computed to determine the internal consistency of the Chinese version of IM-P. Third, the convergent and divergent validity were further examined by calculating the inter-correlations of mindfulness, parental stress, social support, marital satisfaction, child behaviour problem, and parental religious involvement.

Finally, the moderation analyses were conducted to test the moderating effect of mindful parenting on the relationship between parenting stress and child behaviour problems, using the PROCESS macro that can be operated in the SPSS environment (Hayes, 2013). A macro is a plug-in program for SPSS, which automatically performs a series of operations for specific calculations, and the PROCESS macro was developed by Hayes (2013) for performing moderation analyses. For moderation analyses, a priori power analysis was conducted using G* Power (Faul et al., 2007). Since no similar studies were found, the effect size f^2 was set to be the average between small (0.02) to medium (0.15), which was 0.085. For *F* tests, linear multiple regression: Fixed model, R^2 deviation from zero, according to conventions, α was set to be 0.05, power was 0.80,

the number of predictors was three (including the independent variable, moderator, and their interaction), and the required sample size was calculated to be 133.

The rate of data missing was low (0.02%), and missing data were imputed using a linear interpolation method to allow data analysis for all respondents in the sample.

Results

Among the sample of 201 parent participants, the majority (83.6%) were mothers. Most of them were married (94.5%), had a full time job (76.6%), and attained an education level of tertiary school or above (96.5%). The mean age of their children was 5.99 (SD = 1.69). 62.6% of the participants had an age range of 31 to 40.

Factor Structure of the Taiwan Version of the IM-P

To decide on the number of factors, a PA was conducted. The results were shown in Table 2 and a three factor model was suggested. Three eigenvalues of the real dataset exceeded random values, so a three-factor EFA was followed. EFA by maximum likelihood was then performed, in which Promax rotation was applied. Table 3 showed the three factor-solution of the scale. Items 6, 10, 15, 17 and 23 were excluded due to low factor loadings (< 0.40). Results of this 26-item, 3-factor EFA explained 37.12% of the variance. In addition, both a high Kaiser-Meyer-Olkin value, $KMO = 0.85$, and significant Bartlett's test, $X^2 = 1956.34$, $p < 0.001$, suggested sampling and correlation adequacy for the factoring procedure.

First, nine items loaded significantly on the first factor, majority of which involved items of the Compassion for Child subscale in the Hong Kong validation study (Lo et al., 2018), so our first factor was named Compassion for Child (CC). Second, ten

items loaded on the second factor, majority of which involved items of Interacting with Full Attention in the Mainland China study (Pan et al., 2019), so our second factor was named Interacting with Full Attention (IFA). Third, seven items loaded on the third factor, which significantly overlapped with items of Nonjudgmental Acceptance of Self and Child in the original study (Duncan, 2007), and all items were related to children except one to parents, so our third factor was named Nonjudgmental Acceptance of Child (NJAC).

Construct Validity of the Chinese Version of the IM-P

Table 4 shows the correlation coefficients of the total score and three factors of the Taiwan version of the IM-P with other variables. As expected, the IM-P total score and the three factors were negatively correlated with PSI Total Score (total score: $r = -0.49$, $p < 0.001$; CC: $r = -0.39$, $p < 0.001$; IFA: $r = -0.44$, $p < 0.001$; NJAC: $r = -0.32$, $p < 0.001$), PSI Parental Distress (total score: $r = -0.38$, $p < 0.001$; CC: $r = -0.27$, $p < 0.001$; IFA: $r = -0.41$, $p < 0.001$; NJAC: $r = -0.21$, $p < 0.01$), PSI Parent-Child Dysfunctional Interaction (total score: $r = -0.54$, $p < 0.001$; CC: $r = -0.45$, $p < 0.001$; IFA: $r = -0.38$, $p < 0.001$; NJAC: $r = -0.45$, $p < 0.01$), PSI Difficult Child (total score: $r = -0.29$, $p < 0.001$; CC: $r = -0.25$, $p < 0.001$; IFA: $r = -0.25$, $p < 0.001$; NJAC: $r = -0.18$, $p < 0.05$), ECBI Problem Score (total score: $r = -0.26$, $p < 0.001$; CC: $r = -0.17$, $p < 0.05$; IFA: $r = -0.30$, $p < 0.001$), and ECBI Intensity Score (total score: $r = -0.33$, $p < 0.001$; CC: $r = -0.23$, $p < 0.01$; IFA: $r = -0.39$, $p < 0.001$; NJAC: $r = -0.12$, $p < 0.05$). The IM-P total score and the three factors were positively correlated with MSPSS Social Support from Significant Others (total score: $r = 0.25$, $p < 0.001$; CC: $r = 0.24$, $p < 0.01$), and MSPSS Social Support from Family (total score: $r = 0.34$, $p < 0.001$; CC: $r = 0.33$, $p < 0.001$; IFA: $r = 0.19$, $p < 0.01$; NJAP: $r = 0.29$, $p < 0.001$). The NJAP was significantly associated with MSPSS Social Support from Friends ($r = 0.19$, $p < 0.01$). The IM-P

total score and the three factors were not significantly associated with KMSS Marital Satisfaction, ROS-R Intrinsic Religious Orientation, or PRCOPE Positive Religious Coping ($p > 0.05$).

Reliability of the 26 Item Taiwan Version of the IM-P

Table 5 included the mean scores of the Taiwan version of the IM-P items, and their total scores. Overall, internal consistency based on 26 items was 0.86 and those of three subscales were 0.79 to 0.84. Item level tests were conducted to assess the scale mean and variance, corrected item-total correlations and Cronbach's alphas if an item was deleted. These results suggested that all items performed well, with no significant improvements in reliability associated with deleting any single individual item.

Moderating effect of mindful parenting in the relationship of parenting stress and child behaviour problem

We explored whether IM-P or its subscales were a significant moderator of the relations between parent PSI Total Score and child ECBI Problem Score or Intensity Score. Table 6 showed that, after controlling parents' and children's gender, and MSPSS Social Support from Significant Others, Family and Friends (which showed significant correlations with IM-P), parent PSI Total Score was positively related to child ECBI Intensity Score ($\beta = 0.78$, $p < 0.05$). The interaction between PSI Total Score × NJAC was significant ($\beta = 0.03$, $p < 0.05$) and yielded a 2% increase in the total R^2. Figure 1 illustrated that the slope of child ECBI Intensity Score on parent PSI Total Score was significantly different from zero at low ($t = 2.97$, $p < .01$), medium ($t = 6.48$, $p < .001$) and high ($t = 6.70$, $p < .001$) levels of IM-P NJAC. For parents who had a low level of IM-P NJAC, each point of PSI Total Score increased 0.50 of child ECBI Intensity

Score; for parents who had a medium level of IM-P NJAC, each point of PSI Total Score increased 0.75 of child ECBI Intensity Score; and for parents who had a high level of IM-P NJAC, each point of PSI Total Score increased 1.00 of child ECBI Intensity Score.

Discussion

The objectives of this study was to explore the factor structure of the Taiwan version of the IM-P, and test the moderating effects of IM-P on the relationship between parental stress and child behaviour problems. First, the exploratory factor analysis resulted in a three-factor structure. As a whole, the model was slightly different from previously validated versions. However, the first factor Compassion of Child in the current study was highly similar to the factor Compassion of Child in the Hong Kong study (Lo et al., 2018). The second factor of Interacting with Full Attention in the this study was highly similar to the factor Interacting with Full Attention in the Mainland China study (Pan et al., 2019). This indicated that differences and similarities coexisted in understanding of mindful parenting between parents in different regions of Chinese cultures. Parents in three regions might have similar understanding of compassion for children, and shared similar concepts that it would be good to pay full attention when interacting with children.

Second, for all three factors, Compassion of Child, Interacting with Full Attention and Nonjudgmental Acceptance of Child, the main components were child-centred items, and those child-centred items contributed higher factor loadings than parent-related items. Also, among the five excluded items, three were related to nonjudgmental acceptance of self while one was related to emotional awareness of self. These findings were consistent with the observations of Mainland China study (Pan et

al., 2019) that parents did not treat compassion and acceptance of self as necessary components of mindful parenting. This might suggest Chinese parents pay relatively little attention to the conditions of themselves, and they need more guidance and education in the role of self-care in parenting relationships, probably through participation in a mindfulness-based intervention programme.

Third, emotional awareness items in this study did not form a distinctive factor, which was consistent with the findings of Hong Kong study (Lo et al., 2018), and this might reflect the unique emotional coping style specific to Chinese parents themselves, such as using suppression and rumination to cope with emotional ambivalence (Chen et al., 2005)., or the way that parents might teach children emotional management with suppression, especially under role obligations or facing higher authority (Ho et al., 2004).

Fourth, both the Hong Kong Chinese version and Mainland Chinese version showed a four-factor model, but the current Taiwan Chinese version showed a three-factor model. The results showed that compassion and attention were the common features of mindful parenting between three Chinese regions. While the Hong Kong Chinese version contained Emotional Awareness in Parenting and Nonjudgmental Acceptance in Parenting, and the Mainland Chinese version contained Emotional Awareness of Child and Self-regulation in Parenting, the Taiwan Chinese version included a factor of Nonjudgmental Acceptance of Child. The difference in the factor number could be explained by the fact that the items related to emotional awareness and nonjudgmental acceptance formed two distinctive factors in Hong Kong and Mainland Chinese versions but such factors emerged as a single factor of nonjudgmental acceptance.

Finally, the findings supported that Nonjudgmental Acceptance of Child would be a significant moderator between parental stress and child behaviour problems, which was partially consistent with the previous findings in mindful parenting and mindfulness-based intervention. It is interesting to notice that in this study, the qualities of nonjudgmental acceptance plays a very significant role compared with the overall characteristics of mindful parenting. Such qualities may be an antinode to Chinese families who overemphasize on training and obedience of children. Moreover, such finding is consistent with another study of mindful parenting and adolescent internalizing problems (Geurtzen et al., 2015). Further studies should explore the role of nonjudgmental acceptance in parenting in parent and child outcomes and the effects in mindful parenting programmes.

There has been a growing attention in mindfulness-based interventions in social work practice, and mindfulness skills has been considered as integral components of some contemporary psychotherapeutic approaches (Paulson, 2018). Mindfulness can be applied to services and programmes for promoting the well-being of parents and families (Bogels and Restifo, 2014). Based on the evidence in Chinese families, mindful parenting programmes can be promoted in social work profession (e.g. Lo et al., 2017). It may also be integrated with child mindfulness programmes that can be delivered as a parallel intervention for both parents and children based on the identified needs of the families, such as families of children with Attention Deficit/Hyperactivity Disorder (Lo et al., 2020).

Limitations and Future Research

This study provided evidence for the model of mindful parenting for Taiwan parents, but there were some limitations. First, the research findings were based on a small

convenience sample, and participants in this study had a relatively higher education level than the general population and proportion of mothers. Future studies should apply more rigorous sampling method. Second, all data were collected using self-reported measures and thus social desirability or self-presentation bias may occur. Further studies should combine or compare ratings from multiple informants, such as children and spouse for cross validation. Third, the child problem behaviour measurement in this study was applicable to age range from two to 16, while our sample contained young children and seven infants at one year old. Future studies could be conducted for parents of infants aged from zero to two, and adolescents aged over ten.

Besides, we identify a few more areas for future studies. The present study found that Taiwan parents put little attention to self-compassion, acceptance and emotional awareness of the self. Future studies should investigate the relationship of these variables with mindfulness, parent and child outcomes. For examples, previous studies suggested that a higher level of self-compassion in parents was associated with higher levels of mindful parenting that was in turn associated with lower levels of parenting stress and more adaptive parenting style (Gouveia et al., 2016); parents' nonjudgmental acceptance of parental functioning would be the only dimension among different factors of mindful parenting that associated with adolescents' internalizing problems (Geurtzen et al., 2015); and parents' own emotional awareness would directly influenced their children's development of emotional self-regulation (Meyer et al., 2014). In future studies, relationships between self-compassion, nonjudgmental acceptance, emotional awareness of parents could be examined in Taiwan and other Chinese populations. Second, qualities of mindful parenting among Chinese fathers and other clinical populations, such as parents of children with developmental challenges, or mental health issues could be studied. Studies suggested that the levels of fathers'

mindfulness in parenting were lower than that of mothers (e.g., Moreira & Canavarro, 2015; Medeiros et al., 2016). Further studies of mindful parenting in Chinese populations would be encouraged so that the roles and beneficial effects of mindful parenting in Chinese populations can be unfolded.

Despite limitations, this research contributed to the measurement of mindful parenting in Taiwan Chinese. With growing interest in mindful parenting in Eastern cultures, this reliable measurement tool can benefit research in this field.

Conclusion

In this study, the study offers the validation of the Interpersonal Mindfulness in Parenting Scale in Taiwan Chinese. The scale has good psychometric properties and has been demonstrated as a valid measure. Moreover, the positive role of mindful parenting in parent and child mental health was confirmed. Nonjudgmental acceptance of child as one of the factor in mindful parenting was found to have a moderating effect in the relationship between parental stress and child behaviour problems. We recommend mindful parenting to be further promoted in social work practice and research.

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Compliance with Ethical Standards

Conflict of Interest

The authors declare that they have no conflict of interest.

Ethical Approval

All procedures performed in this study were in accordance with the ethical standards of the Research Ethics Board of the first author's university which align with the research ethics and integrity set by the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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Parallel analysis (N = 201).

Eigenvalues	Random means	Random 95 percentile	Real data
1	1.82	1.93	7.28
2	1.70	1.78	3.63
3	1.61	1.68	1.73
4	1.54	1.60	1.53
5	1.47	1.53	1.41
6	1.41	1.46	1.29

Table 2

Factor loadings of EFA by maximum likelihood (N = 201).

		Previous studies					Current study		
		Original	Dutch	Portuguese	Hong Kong	Mainland China	Factor 1 CC	Factor 2 IFA	Factor 3 NJAC
27	Caring for child when struggling.	CSC	CC	CC	CC	CA	**0.78**	0.36	0.41
31	Patient with child when struggling.	CSC	CC	CC	CC	CA	**0.74**	0.38	0.52
25	Kind to child when upset.	CSC	CC	CC	CC	CA	**0.69**	0.32	0.32
24	Pay attention to child when together.	LFA	LFA	LFA	CC	IFA	**0.63**	0.44	0.32
22	Aware of child's worries.	EASC	EAC	EAC	CC	EAC	**0.61**	0.20	0.38
16	Effort to keep emotional balance when upset with child.	SRP	EAS	SRP	EAP	CA	**0.56**	0.32	0.49
30	Aware of child's unspoken feelings.	EASC	EAC	EAC	CC	EAC	**0.52**	0.09	0.49
21	Non-reactivity in difficult moments with child	NJASC	EAS	SRP	Excluded	SRP	**0.49**	0.37	0.45
20	Forgiving of self when regret parenting actions.	CSC	NJAPF	NJAPF	EAP	Excluded	**0.40**	0.21	0.40
1	Listening to child with full attention.	LFA	LFA	LFA	LFA	IFA	0.26	**0.63**	0.18

14	Not regretting parenting actions when upset.	SRP	ENRP	SRP	NJAP	IFA	0.21	**0.61**	0.12
13	Pay attention while engaged with child.	LFA	LFA	LFA	LFA	IFA	0.26	**0.60**	0.22
19	Listening to child, not busy thinking.	LFA	LFA	LFA	LFA	IFA	0.28	**0.57**	0.21
5	Not react too quickly to child.	SRP	ENRP	SRP	Excluded	Excluded	0.19	**0.55**	0.05
12	Aware of child's feelings.	EASC	EAC	EAC	Excluded	EAC	0.44	**0.51**	0.48
9	Patient through activities with child.	LFA	LFA	LFA	LFA	IFA	0.33	**0.50**	0.19
11	Emotions not affect parenting.	EASC	ENRP	SRP	NJAP	IFA	0.23	**0.46**	0.33
26	Self-critical comparison with other parents.	CSC	NJAPF	NJAPF	NJAP	Excluded	0.23	**0.45**	0.09
29	Emotional non-reactivity in response to child behaviour.	SRP	ENRP	SRP	NJAP	Excluded	0.23	**0.41**	0.11
4	Nonjudgmental listening to child.	NJASC	CC	CC	Excluded	CA	0.57	0.39	**0.73**
28	Openness to child's point of view.	NJASC	CC	CC	CC	CA	0.66	0.31	**0.72**
7	Nonjudgmental receptivity to child emotion.	NJASC	CC	CC	Excluded	CA	0.49	0.21	**0.72**
18	Acceptance of parenting challenges.	NJASC	NJAPF	NJAPF	EAP	CA	0.48	0.12	**0.57**
8	Calmly tell child how feeling when upset.	SRP	EAS	SRP	EAP	SRP	0.41	0.32	**0.53**

2	When upset with child, notice feelings before acting.	SRP	EAS	SRP	EAP	SRP	0.13	0.10	**0.47**
3	Aware of impact of child mood on own mood.	EASC	Excluded	EAS	Excluded	SRP	0.16	-0.19	**0.44**
6	Aware of link between own mood and parenting behaviour.	EASC	Excluded	EAS	Excluded	SRP	–	–	–
10	Accepting child individuation.	NJASC	ENRP	NJAPF	Excluded	CA	–	–	–
15	Self-critical of parenting mistakes.	CSC	NJAPF	NJAPF	Excluded	Excluded	–	–	–
17	Self-blame during challenges with child.	CSC	NJAPF	NJAPF	NJAP	Excluded	–	–	–
23	Self-criticism of self as parent.	NJASC	NJAPF	NJAPF	NJAP	Excluded	–	–	–

Note. Kaiser-Meyer-Olkin value (KMO) = 0.85; Bartlett's test, $X^2 = 1956.34$, $df = 325$, $p < 0.001$.

CA Compassion and Acceptance; CC Compassion for Child; CSC Compassion of Self and Child; EAC Emotional Awareness of Child; EAP Emotional Awareness in Parenting; EAS Emotional Awareness of Self; EASC Emotional Awareness of Self and Child; ENPR Emotional Non-reactivity in Parenting; IFA Interacting with Full Attention; LFA Listening with Full Attention; NJAC Nonjudgmental Acceptance of Child; NJAP Nonjudgmental Acceptance in Parenting; NJAPF Nonjudgmental Acceptance in Parenting Functioning; NJASC Nonjudgmental Acceptance of Self and Child; SRP Self-regulation in Parenting.

Table 3

Correlations between factors of Chinese versions of IM-P and other variables (N = 201).

	IM-P Total	CC	IFA	NJAC
IM-P Total Score	1	–	–	–
IM-P CC	0.87**	1	–	–
IM-P IFA	0.72***	0.41***	1	–
IM-P NJAC	0.76***	0.62***	0.24**	1
PSI Total Score	-0.49***	-0.39***	-0.44***	-0.32***
PSI Parental Distress	-0.38***	-0.27***	-0.41***	-0.21**
PSI Parent-Child Dysfunctional Interaction	-0.54***	-0.45***	-0.38***	-0.45**
PSI Difficult Child	-0.29***	-0.25***	-0.25***	-0.18*
ECBI Problem Score	-0.26***	-0.17*	-0.30***	-0.12
ECBI Intensity Score	-0.33***	-0.23**	-0.39***	-0.15*
MSPSS Social Support from Significant Others	0.25***	0.24**	0.09	0.26***
MSPSS Social Support from Family	0.34***	0.33***	0.19**	0.29***
MSPSS Social Support from Friends	0.12	0.13	-0.03	0.19**
KMSS Marital Satisfaction	0.01	-0.03	0.08	-0.02
ROS-R Intrinsic Religious Orientation	-0.08	-0.10	-0.04	-0.04
PRCOPE Positive Religious Coping	-0.10	-0.13	0.01	-0.12

Note. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

CC Compassion for Child; IFA Interacting with Full Attention; NJAC: Nonjudgmental Acceptance of Child.

Table 4

Summarized the average scores of Taiwan version of IM-P-26 items (N = 201).

Items	Mean	SD	Range	Corrected item-total correlation	Cronbach's alpha if item deleted
Compassion for Child					
Item 16	3.32	0.76	1-5	0.54	0.82
Item 20	3.47	0.75	1-5	0.44	0.83
Item 21	3.30	0.78	1-5	0.52	0.83
Item 22	3.83	0.74	1-5	0.60	0.82
Item 24	3.94	0.82	1-5	0.56	0.82
Item 25	3.75	0.79	1-5	0.58	0.82
Item 27	4.19	0.71	1-5	0.66	0.81
Item 30	3.67	0.74	1-5	0.44	0.83
Item 31	3.96	0.69	1-5	0.63	0.81
Cronbach’s alpha = 0.84					
Interacting with Full Attention					
Item 1	3.13	0.74	1-5	0.55	0.76
Item 5	2.98	0.82	1-5	0.44	0.77
Item 9	3.65	0.83	1-5	0.41	0.78
Item 11	3.35	0.83	1-5	0.44	0.77
Item 12	3.78	0.76	1-5	0.49	0.77
Item 13	3.60	0.75	1-5	0.52	0.77
Item 14	3.36	0.77	1-5	0.55	0.76
Item 19	3.55	0.74	1-5	0.50	0.77
Item 26	3.42	0.99	1-5	0.38	0.79

Item 29	2.92	0.77	1-5	0.37	0.78
Cronbach's alpha = 0.79					
Nonjudgmental Acceptance of Child					
Item 16	3.16	0.78	1-5	0.39	0.78
Item 20	3.51	0.79	1-5	0.38	0.79
Item 21	3.83	0.79	1-5	0.64	0.74
Item 22	3.92	0.76	1-5	0.67	0.73
Item 24	3.45	0.85	1-5	0.46	0.77
Item 25	3.64	0.81	1-5	0.48	0.77
Item 27	3.95	0.75	1-5	0.61	0.74
Cronbach's alpha = 0.79					

Table 5

IM-P NJAC as a moderator in the relation between PSI Total Scores and ECBI Intensity Score, controlling for parents' and children's gender and MSPSS.

	β	*t*	*CI*	*ΔR²*	*F*
Step 1: Control variables	–	–	–	0.03	1.11
Step 2: IV and M	–	–	–	0.22	7.64***
PSI Total	0.78	-2.21*	–	–	–
IM-P NJAC	0.72	-2.17*	–	–	–
Step 3: Interaction terms	–	–	–	0.02	5.04*
PSI Total × IM-P NJAC	0.03	2.24*	[0.01, 0.13]	–	–

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; IV = independent variable; M = moderator; β = standardized coefficient; R^2 = coefficient of determination of the corresponding model.

Figure 1

IM-P NJAC as a moderator in the relation between PSI Total Scores and ECBI Intensity Score, controlling for parents' and children's gender and MSPSS.