

FAMILY ENVIRONMENT AND ADOLESCENT DELINQUENCY

Abstract

We examined the association between perceived family environment and delinquent behaviours among Chinese adolescents. A sample of 176 middle school students ($M = 13.7$, $SD = .86$) completed the Chinese version of the Youth Self-Report and the Chinese version of the Family Environment Scale during their school time. Multiple regression was performed to assess the association between family environment and adolescent delinquency. Results demonstrated that a stronger family relationship was conducive to positive adolescent development. Exploratory analysis revealed that the expressiveness, conflict, independence, and control subscales were positively, and the cohesion and organization subscales were negatively associated with adolescent delinquency. Results underscore the significance of positive relationships in adolescents' delinquent trajectory. Findings have important implications for addressing adolescent delinquency, supporting the need for a family-centred approach that includes parents, schools, and social workers.

Keywords: adolescence, adolescent delinquency, family environment, positive development, family relationships

Highlights:

1. Poor family relationships were strongly associated with higher levels of self-reported delinquency among adolescents.
2. Neither the personal growth nor the system maintenance dimensions of family environment were associated with adolescent self-reported delinquency.
3. Family organization was negatively yet parental control was positively related to self-reported delinquency engagement.

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Examining the Association between Family Environment and Adolescent Delinquent Behaviours in China

Adolescence is a period of critical physical, biological (puberty) and cognitive changes (Simmons & Blyth, 2017) that come at a particularly challenging time as adolescents transition to middle school (Oberle, 2018). Adolescents are especially vulnerable during this time and such vulnerability has been found to be associated with delinquency, defined as the engagement in antisocial and/or criminal behaviours (Shoemaker, 2017). Evidence demonstrates that adolescents, above and beyond other age ranges, are more likely to be involved in delinquent behaviours (Li et al., 2011). Results from longitudinal studies have shown that adolescent delinquency often involves a series of health-compromising behaviours, such as smoking, drinking, and substance use (Shoemaker, 2017) which are associated with low school engagement and even school drop-out (Fernández-Suárez et al., 2016). Moreover, the repetition and continuation of adolescent delinquency predict a long-term and negative pathway (Li et al., 2011) with evidence suggesting that under certain circumstances (e.g., living with criminal adoptive parents, having limited coping skills, living in a violent neighbourhood, and being involved in gang activities) delinquency engagement could eventually lead to young adult crime (Thornberry, 2018).

Although some countries, like the U.S., have observed decreases in adolescent delinquency in recent years (Office of Juvenile Justice and Delinquency Prevention, 2021), there is little doubt that adolescent delinquency is still a global concern (Young et al., 2017) and remains at high or in some cases increased levels. For example, China has witnessed a significant rise in adolescent delinquency (Lu et al., 2020) with the number of adolescent offenders under the age of 18 increasing rapidly from about 42,000 in 1990 to about 67,000 in 2011, while the population of this age group dropped from 433 million to 321 million (Chinese Academy of Social Sciences, 2011; Zhao et al., 2015). There is also evidence that adolescents are engaging in delinquent behaviours at a younger age with 62.63% of adolescent offenders in China being middle school students (aged 13-16; China Justice Big Data Research Institute, 2017).

Efforts have been devoted to studying the predictors of adolescent delinquency, yet little research has focused on the role of perceived family environment in the development of delinquency among Chinese adolescents. This is an important omission because understanding the predictors of adolescent delinquency, which in turn can inform intervention, is vital. The present study, therefore, makes a new contribution by quantitatively examining the relationship between family environment and adolescent delinquency amongst middle school students using the

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Chinese versions of the Youth Self-Report (YSR; Achenbach, 1991) and the Family Environment Scale (FES-CV; Phillips, 1999).

Predicting Adolescent Delinquency

Numerous studies have been conducted in the U.S. and other Western contexts to determine the predictors of adolescent delinquent behaviours (Emmert et al., 2018; Jackson et al., 2019). Although there are several predictive factors, such as peer relationships (McGloin & Thomas, 2019), neighbourhood contexts (Binik et al., 2019), and religious beliefs (Martinez, 2017), evidence suggests that the family environment plays a particularly crucial role in determining whether an adolescent will engage in delinquent behaviours (Vashisht & Tanwar, 2018). In a review of the role of family in adolescent delinquency interventions, Smith and Stern (1997) concluded that adolescents whose families are caring and cohesive and whose parents are supportive with good parenting skills are more likely to thrive even in an adverse and detrimental external environment whilst adolescents whose families lack warmth and support are more likely to engage in delinquency.

In contexts such as China, the role of the family is hugely important because of the traditional value of Confucianism (Yiu et al., 2020) which, for more than 2000 years, has shaped the social, moral, and political facets of Chinese culture (Huang & Gove, 2015). Confucianism is rooted in values that prize caring for family members, maintaining family harmony and assets, and bearing a strong sense of obligation and responsibility to one's family (Yao & Yao, 2000). Growing up in such a family environment, Chinese adolescents generally tend to obey their parents' instructions and try their best to meet their parents' expectations, no matter how high or low (Shek & Lai, 2000). Given the powerful influence of Confucianism on Chinese society and adolescents, it is likely that family might play a stronger role in adolescent behaviours than in Western contexts (Shek & Lai, 2000). We do not test this assertion here, rather we focus on the relationship between perceived family environment and delinquency amongst Chinese adolescents. We situate this research within Moos' (1976) family environment framework.

Moos' Family Environment Framework

Moos' family environment framework has been extensively supported in family and parenting studies (e.g., Cerezo et al., 2018; Ibabe, 2019) and serves as an important theoretical foundation for the potential linkage between family environment and adolescent delinquency. It conceptualizes the abstract construct of "family environment" and rigorously operationalises it. Moos draws on Bowen's Family Systems Theory (Bowen, 1978; Erdem & Safi, 2018; Kerr et al., 1988) and argues that family environments, just like people, have unique personalities and exert significant influence on the behaviour (good and bad) of family members. Some family environments are positive, making people feel at ease and comfortable, while some are full of stresses and strains. Theoretically, if an

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adolescent lives in a positive family environment, the possibility of that young person becoming a delinquent is low. Conversely, if they are exposed to a negative family environment, where there may be domestic violence, harsh parenting, or a lack of love from family members, the possibility of delinquent behaviour is high.

Moos' framework (1974) highlights three major dimensions of family environment: *relationship*, *personal growth*, and *system maintenance*, each of which includes further sub-components. The *relationship* dimension measures whether family members get involved with and show support to each other. The *personal growth* dimension evaluates whether family members are independent and self-sufficient, as well as how much social, intellectual, cultural, recreational, and religious family activities are achievement-driven. And finally, the *system maintenance* dimension assesses the family's orderliness, control, the clarity of expectations, and responsiveness. The three dimensions of Moos' framework have been investigated respectively and been consistently found to be associated with adolescent delinquency, primarily in Western-based samples (e.g., Cassidy, 2011; Sharma, 2012). Definitions of each of the subscales within these dimensions are presented in Table 1.

INSERT TABLE 1 ABOUT HERE

Adolescent Delinquency and the Relationship Dimension

Within the relationship dimension, the connection between cohesion and adolescent delinquency has been argued to be particularly important. Evidence demonstrates, for example, that non-delinquents report having higher levels of family cohesion than their delinquent counterparts in the U.S. (LeFlore, 1988) and in China (Cheng et al., 2016; Jin et al., 2016). The connection between expressiveness and delinquency, however, is less clear cut with evidence showing that the impact of expressiveness varies depending on the type of expressiveness (Kyeong et al., 2021). Specifically, children whose family encourages the expression of love and care tend to develop prosocial behaviours, whilst a family characterized with frequent negative expressions could lead to a lack of ability to regulate negative emotions which in turn results in higher possibilities of aggression in children (Ramsden & Hubbard, 2002). The conflict domain of the relationship dimension has also been extensively studied (Weymouth et al., 2016) with evidence that frequent and intense parent-adolescent conflict is related to problem behaviours amongst Chinese adolescents (Deng et al., 2018; Zhou & Liu, 2019) and that parental conflict is a crucial contributor to adolescents' internalizing (Brock & Kochanska, 2016) and externalizing problems (Cummings et al., 2016).

There is also evidence that the negative impacts of family conflict could extend into late adolescence and beyond in early adulthood (Heinze et al., 2020).

Adolescent Delinquency and the Personal Growth Dimension

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Within the dimension of personal growth, the relationship between independence and adolescent delinquency has been studied the most (Bucci & Staff, 2020; Dir et al., 2018). This is perhaps unsurprising given the inherent need amongst adolescents for independence and taking control of their life. For some, seeking independence is associated with delinquency whilst for others, delinquency can be seen as a sign of independence (Thompson & Bynum, 2016) or a desire for independence (Chen, 2010). The relationship between perceived independence and delinquency, however, is dynamic (Keijsers et al., 2012) such that if the desire for independence and the level of independence granted fail to reach a congruence, negative results may occur (Thompson & Bynum, 2016).

The connection between achievement orientation and delinquency has also been substantially researched and is argued to be curvilinear (Ma et al., 2018). That is, when perceived family expectations and adolescents' competence reaches a balance, achievement-oriented values contribute to adolescents' concurrent and long-term educational performance (Danişman, 2017) whilst either low levels of or excessive levels of parental expectations may lead to adverse consequences, including delinquency (Agnew, 2015). Given that Asian families tend to have high expectations when it comes to their children's academic and career achievement (Kim et al., 2016; Li et al., 2020), considering schooling of foremost importance (Sheng, 2019), it could be argued that high expectation and delinquency could be partly attributed to Confucianism culture; Chinese adolescents are argued to be more obedient to their parents and willing to strive hard to meet parental expectations (Xu, 2016). However, if adolescents are unable or may be unable to achieve parental goals, such overwhelmingly high expectations may become a stressor leading to negative consequences, including delinquency (Mahler et al., 2017; Wang et al., 2015).

In relation to the intellectual-cultural component of the personal growth dimension, research demonstrates that adolescents whose families engage in activities such as going to the museum and library, and spending time joining in cultural, social, or political activities, are less likely to engage in delinquent behaviours (Jin et al., 2016; Yu et al., 2006) and that having more intellectual-cultural activities is conducive to adolescents' academic and social-emotional development (Williams et al., 2015) which in turn, predicts better adolescent social functioning, and lower aggressive and delinquent behaviours (Denham et al., 2008).

In comparison to other components of the personal growth dimension, the link between leisure activity and adolescent delinquency is less explored in China. In Western contexts, however, it has been found that participating in more recreational activities diminishes exposure to and lowers the desire for delinquency, which in turn, decreases the likelihood of delinquency engagement (Roman et al., 2012) and in the Chinese context, studies have

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demonstrated that adolescents whose families are involved in more moral and religious activities are less likely to become delinquents (Jin et al., 2016; Zhang et al., 2010). Whilst this suggests a potential link between religious activities and adolescent delinquency, it could be argued that compared with some more religiously centred countries and regions, the influence of religion upon Chinese adolescents may be trivial because of the Cultural Revolution (1966-1976) during which all kinds of religious practice were banned, and all religious institutions were closed or destroyed (Kao, 2020) and as a result, only 14% of the population claimed to be religious believers (Information Office of the State Council of the People's Republic of China, 2018).

Adolescent Delinquency and the System Maintenance Dimension

Within the system maintenance dimension, the relationship between the organization subscale and adolescent delinquency is underexplored. There is some evidence, however, using the Chinese version of the Family Environment Scale (FES-CV), of the conducive effects of well-organized family activities on adolescent behaviours (Chang et al., 2013; Jin et al., 2016) and mental health (Sun et al., 2020). These findings seem to suggest that adolescents value organization in family activities as well as clarity rules and responsibilities. In contrast to the organisation subscale, the parent control subscale is more widely researched but findings on the connection between parental control and adolescent delinquency are divergent (Harris-McKoy, 2016). Some studies have found that overpowering parental control triggers adolescents' rebellion to get independence and autonomy which in turn increases delinquent behaviours (Brauer, 2017) whereas others have found that lower levels of parental control are associated with higher possibilities of delinquency concurrently and beyond adolescence (Harris-McKoy & Cui, 2013). Recognising this, Harris-McKoy (2016) argues that the relationship between parental control and delinquency is curvilinear; suggesting that neither excessively high nor extremely low parental control helps prevent adolescent delinquency, it is a moderate level of parental control that is associated with lower levels of delinquency.

The Present Study

Empirically and theoretically, it has been determined that the family environment plays a critical role in understanding adolescent delinquency development. To date, however, studies on family environment have been disproportionately undertaken in Western contexts. Because of cultural differences, results from other countries may not be fully applicable to understand delinquency amongst Chinese adolescents. The present research, therefore, extends current understanding to examine the relationship between family environment and adolescent delinquency in mainland China. A Chinese-context sensitive account is needed to determine the associated factors of adolescent delinquency and inform approaches to curb adolescent delinquency, for example, school-family cooperation programmes, social-emotional learning courses, and mentoring programmes.

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Whilst some research on family environment and delinquency has been conducted with Hong Kong adolescents (Ho et al., 2019; Shek & Lin, 2016; Shek & Zhu, 2019), whether these research findings can be applied to mainland China is questionable. This is because younger generations in Hong Kong are said to have a Western-Chinese hybrid cultural value (Chan & Chui, 2017) that differs from mainland Chinese adolescents. Further, China has recently undergone a transition period where the traditional family-centred Confucianism culture has been weakened by rapid modernization and social changes (Unger et al., 2002) with adolescents being exposed to a global “youth culture” which emphasizes independence and autonomy. The combination of changes and the rise in youth delinquency in mainland China makes this a particularly interesting place to conduct research.

The present study, therefore, aimed to examine the associations between the three dimensions of family environment and delinquent behaviours among Chinese adolescents. Based on previous research, it is predicted that a positive family environment will be associated with lower levels of adolescent delinquency. Specifically, it is hypothesized that (1) the relationship dimension is negatively associated with adolescents’ self-reported delinquent behaviours; (2) the personal growth dimension is negatively associated with adolescents’ self-reported delinquent behaviours; (3) and the system maintenance dimension is negatively associated with adolescents’ self-reported delinquent behaviours.

Method

Sample and Recruitment

An overview of the project and a copy of the questionnaire were sent to headmasters of government-funded and private middle schools in Guangzhou, Southern China. Guangzhou city is the third largest city in mainland China (Li & Liu, 2019) and was chosen because the first author had connections with several school leaders. One private middle school agreed to participate in the research. An information sheet and a consent form were sent to students and their parents to get approval to take part in the study from June to July 2015. To ease user accessibility, the survey was set up using online software host Wenjuan Star (a local Chinese online survey service).

A total of 182 out of 329 students responded to the survey with a response rate of 55.32%. Because outliers can significantly affect the estimated regression coefficients, leading to biased results and potentially flawed implications (Field, 2013), the dataset was scrutinized for outliers. Six outliers (delinquency scores were: 38, 38, 39, 39, 48, and 48) with z-scores beyond ± 3 (Tabachnick & Fidell, 2007) in the delinquency measure were identified and excluded from subsequent analyses to prevent biased results. The final sample contained 176 participants (66 girls, 110 boys) from 12 to 16 years old ($M = 13.7$, $SD = .86$) with most coming from intact families ($n = 167$;

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94.89%), meaning they lived with both of their biological parents, seven (3.97%) lived with one of their biological parents, and two (1.14%) lived with neither of their biological parents.

Measures and Procedure

Following ethical approval, participants were asked to complete the online questionnaire during computer classes in school, only participants who had parental consent were allowed to take part in the research. In addition to reporting on their age, gender, and family structure, participants were asked to complete the Chinese versions of the Family Environment Scale (FES-CV; Phillips, 1999) and the Youth Self-Report scale (YSR; Achenbach, 1991). As the latter scale was developed in English, it was translated into Chinese and back to English by two language experts to ensure congruence with the original, for the purposes of the present study. Participants were fully debriefed following completion of the survey. No incentives were offered.

Family Environment. Adolescents' perception of family environment was measured by the third version of the FES-CV (Phillips, 1999) which is adapted from the FES (Moos & Moos, 1981) to capture the Chinese family environment. The FES-CV is comprised of 90 closed-ended questions, nine for each of the ten subscales of family environment (See Table 1). Participants answered items on a yes/no basis, coded as 1 for each *yes* response and 0 for each *no* response, except for negatively phrased items which were reverse coded (Phillips, 1999). The nine questions representing each subscale were summated to produce a subscale score, with a higher subscale score indicating a higher level of the subscale trait (see Table 1).

To calculate the relationship dimension, the conflict subscale was first reverse coded to ensure that a higher relationship dimension score equated with family relationships being perceived as supportive and then, the cohesion, expressiveness, and reverse-coded conflict subscale scores were combined into a single score ($\alpha = .78$). A high score representing stronger family relationships. The independence, achievement orientation, intellectual-cultural orientation, active-recreation orientation, and moral-religious orientation subscale scores were summed to reflect the personal growth dimension with a higher personal growth dimension score indicating higher levels of perceived personal growth ($\alpha = .70$). The organization and control subscale scores were summed to create the system maintenance dimension score with a higher system maintenance dimension score reflecting higher perceived system maintenance (Wang, 2011). The system maintenance dimension displayed weaker internal consistency ($\alpha = .55$) which may be problematic as it may weaken the reliability of the research findings (Santos, 1999).

Adolescent Delinquent Behaviour. Originally designed by Achenbach (1991), the YSR is a widely-used instrument with 112 items to assess emotional and behavioural problems among youth aged 11 to 18. The 16 items related to delinquent behaviours (e.g., "I drink alcohol without my parents' approval", "I fight a lot", and "I smoke")

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were adopted for this study (Achenbach & Rescorla, 2001; Zhao et al., 2017). All responses were anchored by a 3point Likert scale to represent the frequency of delinquent behaviour, from *Not true* (1), *Somewhat or sometimes true* (2) to *Very true or often true* (3). The higher the points a respondent scores, the more likely they engage in delinquent behaviours ($\alpha = .83$).

Results

Survey responses collected from participants were downloaded from the survey platform and input into SPSS for analysis. Descriptive results of the three dimensions of family environment and adolescent delinquent behaviours are reported in Table 2. Adolescent self-reported delinquency was found negatively associated with the three family environment dimensions; yet only the associations between delinquency and the relationship and system maintenance dimensions were significant at the .05 level. Multiple regression was performed to test the relationships between family environment and adolescent delinquent behaviour in relation to the specified hypotheses. Since empirical studies have demonstrated the role of age in delinquency and parental control, age was included as a control variable in the analyses.

INSERT TABLE 2 ABOUT HERE

The Relationships between The Three Dimensions of Family Environment and Adolescent Delinquent Behaviour

To test the predictive role of each of the family environment dimensions on adolescent delinquency, age was introduced into the hierarchical regression model in the first block, the relationship, personal growth, and system maintenance dimensions were entered into the hierarchical regression equation as predictor variables in the second block. As seen in Table 3, participants' age accounted for a trivial amount of the variance in delinquency ($R^2 = .002$, $F(1,175) = .43$, $p = .512$; Cohen's $f^2 = .002$). After the three family environment dimensions were added into the second block, the overall model produced was statistically significant, with a small effect size explaining 11.3% of the variance in adolescent delinquency ($F(4, 172) = 5.65$, $p < .001$; Cohen's $f^2 = .127$). In support of hypothesis 1, the relationship dimension was found to be significantly negatively associated with adolescent delinquency. In contrast to hypotheses 2 and 3, however, no significant relationships were observed between the system maintenance dimension or the personal growth dimension and adolescent delinquency.

Exploratory Analyses

To more closely examine the relationship between each of the family environment subscales and adolescent delinquency in the Chinese context, exploratory analyses were conducted. Specific hypotheses regarding the directions of the effects were not formulated, however, it was expected that each of the subscales would predict

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adolescent delinquency in line with the broader three dimensions. Correlation analysis followed by multiple regression analysis was conducted (see Table 4 for descriptive statistics).

As can be seen in Table 5, similar to the previous hierarchical regression model with three family environment dimensions, age was not a significant factor in delinquency engagement ($R^2 = .007$, $F(1,175) = 1.28$, $p = .260$; Cohen's $f^2 = .007$). When the ten subscales were added into the second block, regression analysis revealed a statistically significant model with a large effect size explaining 34.3% of the variance in adolescent delinquency ($F(11, 165) = 7.69$, $p < .001$; Cohen's $f^2 = .522$). The expressiveness, conflict, independence, and control subscales were positively associated with adolescent delinquency whilst the cohesion and organization subscales were negatively associated with adolescent delinquency (See Table 5).

INSERT TABLE 5 ABOUT HERE

Discussion

Adopting a family environment perspective, the present research investigated the association between Chinese adolescents' perspectives of family environment and their self-reported involvement in delinquent behaviour. Primary analysis demonstrated the importance of the relationship dimension, compared with the personal growth and system maintenance dimensions, in understanding adolescent delinquency engagement. Exploratory analysis revealed that adolescents who perceived their family environment as cohesive and well-organized with appropriate parental guidance were less likely to report engaging in delinquent behaviours; whilst adolescents who perceived their family environment as controlling with intense conflict and negative expression were likely to report being involved in higher levels of adolescent delinquency.

The finding that perceiving a stronger family relationship was associated with less engagement in delinquent behaviours aligns with research conducted in China as well as Western countries which has shown that when the relationship within a family is perceived to be supportive, warm, and cohesive, adolescents are less likely to engage in delinquent acts (Walters, 2019). It is argued that this may be because a healthy parent-adolescent relationship nurtures adolescents with a solid emotional foundation which may encourage them to develop prosocial behaviours (Kochanska et al., 2000) whilst toxic parent-adolescent relationships are often associated with adolescent problem behaviours (Kapetanovic et al., 2019). There is further evidence of the predictive role of parent-adolescent relationships in delinquency regardless of household structure (e.g., single-parent; Jacobsen and Zaatut (2022). And, the robust relationship between parent-adolescent relationships and delinquency has been reaffirmed by longitudinal (e.g., Yoder et al., 2016) and meta-analysis studies (e.g., Weng et al., 2016). The present finding has important implications for social

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workers in the Chinese context suggesting that in line with their role, more could be done to help parents to improve and maintain positive family relationships for adolescents to thrive. For example, online courses and in-person workshops with basic knowledge about adolescence and the importance of a healthy parent-adolescent relationship could be provided to parents; small group or one-on-one sessions (Ke, 2012; Liu, 2013) could help parents how to effectively communicate and guide their children.

In contrast to predictions, no association was found between either the perceived personal growth dimension or the system maintenance dimension and adolescent delinquency. This seems to suggest that, at least in the Chinese context with the present sample, that perceived family relationship that matters most in understanding adolescent delinquency. To our knowledge, few studies have examined the personal growth dimension and it may be that the FES-CV scale which was developed more than 20 years ago, is less relevant due to changes in China over the years (Chen et al., 2015). Take an item in the moral-religious emphasis subscale claiming divorce as unethical for example, *Chinese people used to view divorce as dishonourable and unacceptable*; views on divorce have altered substantially, with divorce now being perceived as a legitimate and possible solution for marital misfortunes (He, 2021). At the same time, however, it is important to note that divorce often stigmatizes children and to some extent contributes to adolescents' negative outcomes (He, 2021). Moreover, compared with the divorce itself, the couples' relationship after divorce is more likely to correspond to youth's development (Deng et al., 2016). The null findings in the present research for the perceived system maintenance dimension may be due to sampling variation. For example, in Cassidy's (2011) research only 43% of the participants lived with their biological parents, while the percentage is 95% in our study. This is important because family structure is an essential element in influencing adolescents' perceptions of family environment and their delinquency engagement (Boccio & Beave, 2019; Xie et al., 2021). It is also worth noting that in the present study, the system maintenance dimension was found to have lower reliability ($\alpha = .55$) and so, future work should further examine the validity of the FES-CV.

Exploratory analysis suggested that adolescents who reported their perceived family environment as being cohesive and with lower levels of conflict also reported engaging in lower levels of delinquent behaviours. This is in line with empirical research using the FES-CV to study delinquency among Chinese adolescents (Chang et al., 2012; Jin et al., 2016) and longitudinal studies which have found that family cohesiveness helps to reduce the negative impacts of engaging in intergroup antisocial behaviours (Taylor et al., 2016) and witnessing community violence (Barr et al., 2012) on youth aggression. These findings also connect with previous studies across contexts (Meldrum et al., 2016) and amongst different ethnic groups (Estrada-Martínez et al., 2011). It should be noted, however, that the relationship between cohesion, conflict, and adolescent delinquency could be bidirectional such that family

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cohesion and conflict could be key factors of adolescent behaviours, but they are also changed in response to how the adolescent behaves (Jagger et al., 2014; Keijsers, 2016). This is an assertion that should be further tested in future research. For example, longitudinal research design with three waves could help reveal the temporal reciprocal relationships between cohesion, conflict, and delinquency and understand how the interactions change across development.

Results also revealed that higher levels of perceived expressiveness within the home were associated with higher reports of delinquency. In the present research, however, the expressiveness subscale measures how much members are allowed and encouraged to act openly and express their feelings directly. As such, this subscale does not specify whether this expression is positive or negative. Given, however, that the content of the questions (such as, “difficulties and concern”, “expresses dissatisfaction”, and “financial problems”), is more related to negative feeling expression, it could be argued that adolescents perceived expression among family members as a source of negativity (Bariola et al., 2011). As another example, one of the expressiveness items in the FES-CV is “*We are usually careful about what we say to each other so that we don’t hurt each other’s feelings.*” A positive answer to this question indicates lower level of expressiveness whilst a negative answer means higher level of expressiveness (Phillips, 1999). That is, negative expression that upsets family members is regarded as an indicator of expressiveness in the FES-CV. Evidence demonstrates that such negative expression over time can lead to an inability to regulate and express negative emotions and in turn, can result in a higher possibility of delinquency (Bariola et al., 2011; Ramsden & Hubbard, 2002; Turpyn & Chaplin, 2016). Our findings suggest that adolescents, especially those who suffer from anger issue, may benefit from emotional management programmes and socialemotional learning courses offered by schools and local communities.

Consistent with research conducted in China (Jin et al., 2016), participants in the present research who reported their parents as being controlling tended to also report engaging in more delinquent behaviours. It is worth noting, however, that earlier studies have found different outcomes (e.g., Cheung & Cheung, 2010). These discrepant findings may due to the fact that the relationship between parental control and adolescent delinquency is curvilinear (U-shaped) (Harris-McKoy, 2016). As such, excessive perceived parental control may limit adolescents’ desire for independence which triggers delinquency to have their needs for independence met. Moreover, because of modernization and globalization, the traditional Chinese family environment has changed (To et al., 2017) where independence and autonomy are becoming more valued. Indeed, evidence suggests that in today’s China, Chinese adolescents view parental control negatively instead of as a caring gesture (Xu et al. 2019). Engaging in delinquent behaviours may, therefore, be a result of acting out against excessive parental controls (Melotti et al., 2018).

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Relatedly, higher levels of perceived independence were also found to be associated with greater levels of delinquency engagement. This finding might seem counterintuitive due to the observation that greater parental control was found to be associated with higher levels of delinquency but may be explained by the stage-environment fit perspective (Eccles et al., 1993). This perspective posits that it is not the desire for independence nor the level of independence that adolescents are granted that directly associates with delinquency engagement but the congruence between adolescents' independence needs and the level of independence that their parents grant (Gutman et al., 2011; Keijsers, 2012). Supporting this argument, Keijsers and colleagues' (2012) longitudinal study found that the mismatch between parental control over friendship choices and adolescents' desire to choose their own friends contributed to more contacts with deviant peers, which in turn predicted adolescent delinquency. Future research, therefore, should aim to better understand the ways in which perceived parental control and independence are associated with the reality of both in relation to adolescent desires. Our results suggest that it would be beneficial to both parents and adolescents if more parenting courses and services are available to help adjust the level of parent control to the adolescents' need.

Exploratory analysis also revealed that a higher level of perceived organization (housekeeping and family activities planning) was associated with lower levels of adolescent delinquency. This finding is consistent with previous research conducted in mainland China on delinquency across different age ranges (Jia et al., 2016; Zhang et al., 2010). It is interesting, however, that although both the organization and control subscales are within the system maintenance dimension, their associations to adolescent delinquency are in the opposite direction. A possible explanation could be that adolescents interpret these two constructs differently, which in turn, links to their delinquency engagement differently. Evidence for this assertion comes from Chen-Bouck and Patterson (2017) who argued that parental control comprises a wider range of facets. They found that participants interpreted parental control in the facets of school and clothing as an expression of care and love whilst parental control in the facets of friendship and physical discipline were interpreted as representing rejection and punishment. Within the FES-CV the control subscale is more related to discipline and punishment while the organization subscale is more related to housekeeping and family activity arrangement. It could be that adolescents perceived clear organization and family arrangements of family activities and responsibilities as more positive than family rules and regulations. Given that parental control is a multi-faceted construct, future research that aims to examine the relationship between parental control and adolescent delinquency engagement should distinguish the between different facets of parental control.

Implications

The collective findings of the present research emphasize the importance of positive relationships in

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promoting normative behaviours amongst adolescents. This has implications for practice. For example, it suggests that stakeholders such as social workers, family therapists, and family study educators aiming to promote positive adolescent development could work towards supporting parents to maintain a positive family environment through family-centred interventions. This could include, for example, Brief Strategic Family Therapy, an evidence-based intervention aiming at addressing internalizing and externalizing problems among adolescents (Szapocznik & Hervis, 2020), to repair family cohesion, reduce conflicts among family members (e.g., adolescent-parent conflict, inter-parental conflict), and encourage expression of negative feelings in constructive ways. Further, to benefit a broader population, online courses could be designed to teach guardians the developmental nature of adolescence and principles of effective communication to build stronger family relationships.

The present findings also suggest that there is a need to provide a balance between the desire for autonomy and parental control in adolescent-family relationships. Therefore, instead of implementing coercive parenting with excessive parental control, parents should be encouraged to take on a more age-appropriate parenting style with sufficient guidance to establish a stable adolescent-parent relationship that may buffer at-risk adolescents from impacts of negative stimuli, allowing them to thrive. Our findings also suggested that adolescents value wellorganized family activities. Parents are therefore advised to work together with adolescents to plan family activities to foster the development of some autonomy in adolescent decision-making and increase adolescent-parent communication.

The present findings also speak to other relevant stakeholders, including school administrators and teachers. Since adolescents living in a toxic family environment are more likely to engage in aggressive behaviours, it is often that teachers must deal with adolescents who exhibit delinquent behaviours at school. It is recommended therefore, that teachers and schools collaborate with parents to implement family-school interventions (e.g., the Friendly Schools Friendly Families Program, Lester et al., 2017; the Getting Ready Invention, Marti et al., 2018; the SAFE Children Preventive Intervention, Tolan et al., 2004). An extensive body of research corroborates the advantages of family-school partnership interventions on adolescents' academic, social-emotional, and behavioural development (Smith et al., 2020). Additionally, evidence-informed social-emotional learning programs (e.g., the Promoting Alternative Thinking Strategies; Panayiotou et al., 2020) could be helpful in teaching adolescents how to deal with a negative environment within the home (such as conflicts among family members), regulating their negative emotions, as well as equipping adolescents with effective problem-solving strategies.

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Limitations and Future Research Directions

The present findings offer a new understanding of how adolescents' perceptions of the family environment are associated with their delinquent behaviours in China- offering a new insight into the need to explore these relationships beyond Western contexts. It is important, however, to acknowledge the limitations of this research. First, because our participants were recruited from a private middle school in Guangzhou, China, our findings cannot be generalised to adolescents in China in general. It may be, for example, that our sample demonstrated lower levels of adolescent delinquency than what might be expected in the general adolescent population. Future studies are advised to recruit a more representative sample with adolescents from different educational environments (e.g., government-funded schools, schools in different areas both rural and urban) to increase the reliability and statistical power of the results. Second, due to the cross-sectional nature of our research, we cannot make causal inferences. We advise researchers to undertake studies with a longitudinal design which tracks the same participants over a period of time allowing researchers to detect changes in participants at both the individual and group level (Gayle & Lambert, 2018). Third, our study did not fully consider age differences in delinquency due to our focus on middle school adolescents. Given potential variation within and across age groups, future research should adopt a longitudinal approach to better understand the development of adolescent delinquency by taking a wider range of demographic factors into account, including age, gender, and socio-economic status. Fourth, even though previous studies have used the family environment dimensions for analysis, our results shown that some subscales (e.g., control and organization) exhibited opposite directions with delinquency, which could be that the latent constructs under these subscales measure different aspects of the family environment. Fifth, it could be argued that some of the items in the FES-CV are not fully applicable to current Chinese society (Chen et al., 2015). Although items from the original FES scale were re-developed to integrate the Chinese context, the FES-CV was developed twenty years ago and scale may not be fully applicable to the current Chinese context. Efforts are needed to develop an updated family environment scale. Additionally, the system maintenance dimension was found to have lower reliability in the present study than in previous studies. It may be that these items are not particularly salient to adolescents within the current Chinese context. Further testing of the reliability of the family environment scale outside of Western contexts is needed. Despite these limitations, the present findings offer some important insights into the role of family environment on adolescent delinquency.

Conclusion

The present study confirms that perceived family environment is a critical element in understanding

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delinquency amongst Chinese adolescents. Results demonstrate that healthy relationships among family members, appropriate parental guidance, and less controlling parenting are associated with lower levels of adolescent delinquency. These findings have important implications for future research as they highlight the importance of less explored domains, such as family organization, and different types of expressiveness, and provide insights into the perceptions of adolescents on different aspects of family environment in the current Chinese context.

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Table 1

Moos' Family Environment Scale Dimensions and Description

| Family Environment | Subscales | Description |
|---------------------------|-----------------------------------|---|
| Relationship Dimension | | |
| 1. | Cohesion | The extent to which family members are concerned and committed to the degree to which family members are helpful and supportive of each other. |
| 2. | Expressiveness | The extent to which members are allowed and encouraged to act openly and to express their feelings directly. |
| 3. | Conflict | The extent to which the open expression of anger and aggression and generally conflictual interaction are characteristic of the family. |
| Personal Growth Dimension | | |
| 4. | Independence | The extent to which the family members are encouraged to be assertive, self-sufficient, to make their own decisions and to think things out for themselves. |
| 5. | Achievement Orientation | The extent to which different types of activities (i.e., school and work) are cast into an achievement-oriented or competitive framework. |
| 6. | Intellectual-Cultural Orientation | The extent to which the family is concerned about political, |

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social, intellectual and cultural activities.

7. Active-Recreational Orientation The extent to which the family participates actively in various kinds of recreational and sporting activities.

8. Moral-Religious Emphasis The extent to which family actively discusses and emphasizes ethical and religious issues and values.

System Maintenance Dimension

9. Organization Measures how important order and organization are in the family in terms of structuring the family activities, financial planning, and the explicitness and clarity in regard to family rules and responsibilities.

10. Control Assesses the extent to which the family is organized in a hierarchical manner, the rigidity of family rules and procedures and the extent to which family members are ordered around.

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Table 2

Descriptive Statistics of Variables and Correlations between Family Environment Dimensions and Adolescent Delinquent Behaviour

| Variables | Mean | SD | r |
|--------------------|-------|------|---------|
| Age | 13.70 | 0.86 | .05 |
| Relationship | 17.89 | 4.65 | -.32*** |
| Personal growth | 26.63 | 5.57 | -.13 |
| System maintenance | 9.79 | 2.80 | -.16* |
| Delinquency | 20.60 | 5.62 | — |

* $p < .05$. *** $p < .001$.

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Table 3

Hierarchical Regression of Family Environment Dimensions and Adolescent Delinquent Behaviour

| Predictor Variables | Unstandardised | | | |
|---------------------|----------------|-----------|---------|----------|
| | co-efficients | | | |
| | <i>B</i> | <i>SE</i> | β | <i>t</i> |
| <i>Step 1</i> | | | | |
| Age | .32 | .48 | .05 | 0.66 |
| <i>Step 2</i> | | | | |
| Age | .48 | .46 | .74 | 1.04 |
| Relationship | -.40 | .10 | -.33 | -3.87*** |
| Personal Growth | .04 | .08 | .04 | 0.67 |
| System Maintenance | -.12 | .15 | -.06 | 0.43 |

*** $p < .001$.

Table 4

Correlations between Family Environment Subscales and Adolescent Delinquent Behaviour

| Variables | Delinquency |
|-----------------------------------|-------------|
| Age | -.09 |
| Cohesion | -.36*** |
| Expressiveness | -.14 |
| Conflict | .36*** |
| Independence | .26** |
| Achievement Orientation | .06 |
| Intellectual-Cultural Orientation | -.19* |
| Active-Recreation Orientation | -.15 |
| Moral-Religious Orientation | .01 |
| Organization | -.31*** |
| Control | .06 |

* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 5

Hierarchical Regression of Family Environment Subscales and Adolescent Delinquent Behaviour

| Predictor Variables | Unstandardised | | | |
|-----------------------------------|----------------|-----------|---------|----------|
| | co-efficients | | | |
| | <i>B</i> | <i>SE</i> | β | <i>t</i> |
| <i>Step 1</i> | | | | |
| Age | -.40 | .36 | -.09 | -1.13 |
| <i>Step 2</i> | | | | |
| Age | -.45 | .31 | -.10 | -1.46 |
| Cohesion | -.69 | .22 | -.37 | -3.09** |
| Expressiveness | .57 | .22 | .22 | 2.40* |
| Conflict | .42 | .17 | .19 | 2.44* |
| Independence | .70 | .20 | .25 | 3.50*** |
| Achievement Orientation | .31 | .17 | .15 | 1.80 |
| Intellectual-Cultural Orientation | -.14 | .15 | -.07 | -0.94 |
| Active-Recreational Orientation | -.06 | .17 | -.03 | -0.37 |
| Moral-Religious Orientation | .33 | .19 | .13 | 1.79 |
| Organization | -.54 | .17 | -.24 | -3.24** |
| Control | .35 | .15 | .15 | 2.25* |

* $p < .05$. ** $p < .01$.