A Study on the Relationships among Psychological Control, Adolescent Depression and Antisocial Behavior in Taiwan

Yi-Chan Tu a,*, Hung-Chang Lee b, Ho-Yuan Chen c, Tsai-Feng Kao d

Abstract

We extended prior research by examining the effects of parental psychological control and adolescent depression on antisocial behavior, as well as the possible mediation effect of adolescent depression in those processes. To do so, we examined 377 senior high school students (mean age=15.30 years) from four major cities in Taiwan. Adolescent reported on perceived parental psychological control and depression on antisocial behavior. The results of hierarchical regression analyses are concluded as follows. (1) Gender and parents education level can significant predict antisocial behavior. (2) Maternal psychological control can significant predict antisocial behavior. (3) Adolescent depression directly influenced the antisocial behavior and the mediation effect of adolescent depression between psychological control and antisocial behavior was statistically significant. These results suggested that adolescent depression plays a more significant role vis-a-vis adolescent depression than the parental psychological control on Taiwan adolescent antisocial behavior. These results were discussed in terms of their implications for research and practice.

Introduction

Adolescence is characterized by many changes that are related to adolescents’ perceptions of themselves and their family life (White & Renk, 2012). An overview of adolescence reveals that during this stage of development young people are “in an active, purposeful ‘flight’ away from attachment relationships with parents” (Allen & Land, 1999, p. 319). If parental control is not diminished it results in increased conflict between adolescents and parents, such as the breaking of rules and antisocial behavior (Allen & Land, 1999). Developmental psychologists have examined antisocial behavior from many perspectives, including the academic experience, and peer relation and socio economic status (Gaik, Abdullah, Elias, & Uli, 2010). Parenting is generally known as an important risk factor linked with antisocial behavior. As children move into adolescence, monitoring becomes an important aspect of parenting. Patterson (1985) found that an inadequate parents monitoring seems to be important in the emergence and maintenance of antisocial behavior in children from middle childhood through adolescence.

There are two broad dimensions of behavior disorders; internalizing and externalizing behavior. Internalizing behavior is directed inward and involves behavioral deficits, such as isolation, withdrawal and depression. On the
other part, externalizing behaviors are in the form such as disturbing others, verbal and physical aggression, and acts of violence. In fact, psychologists have been studying many different aspects of child development and how they relate to the formation of externalizing behavior problems (Gaik, Abdullah, Elias, & Uli, 2010). Many adolescents experience adjustment problems including externalizing and internalizing problems. Antisocial behavior is an externalizing behavior that refers to persistent violations of behavior patterns that are deemed socially appropriate, it is disruptive to individuals, family and friends, and society (Lue, Wu, & Yen, 2010).

Although the association between antisocial behavior and depression has been widely supported, the direction and temporal order of this relationship are not fully understood in adolescence. (Boots, Wareham, & Weir, 2011). Despite widespread recognition of the occurrence of depression and antisocial behavior in adolescents, the specifics of the relationship between them have not been clarified (Lue, Wu, & Yen, 2010). Specifically, Wiesner and Kim (2006) have argued that the need for further inquiry into the developmental origins of affective problems and delinquency, as few studies to date have sought to explore this relationship over time with gender sensitivity.

Most research to date on antisocial behavior and depression either has been retrospective, concentrated exclusively on boys, or has used referred, at-risk, incarcerated samples (Capaldi, 1992). The present study addresses a significant gap in the literature by using a school-based, no forensic sample of adolescent boys and girls. Thus, this paper focuses on the role of family relations, especially parental psychological control and adolescent depression, as determining factors in the development of antisocial behavior among adolescents.

1. Literature review

1.1. Psychological control

Parental control has been regarded as an important dimension of parenting. In the early work on parenting, control versus autonomy was commonly used to describe parenting attributes (Becker, 1964; Schaefer, 1965). Psychological control is described as the excessive enforcement of power used to control thinking and feeling processes which, in turn, impedes the person’s emotional and psychological development (Barber, 1996). High levels of psychological control have typically been linked to internalization and expression of anxiety, depression, loneliness, emotional dysfunction, and confusion (Barber, 1996). Psychological control has been linked to externalization of problems such as antisocial behavior (Barber, Stolz, & Olsen, 2005).

The role of parenting in children’s relationship is very important in predicting antisocial behavior (Gaik, Abdullah, Elias, & Uli, 2010). Roman, Human and Hiss (2012) found that a positive relationship between parental psychological control and the antisocial behavior of young adults, maternal psychological control, compared to paternal psychological control, was a stronger predictor of antisocial behavior. In addition, Mothers are more likely than are fathers to control their children psychologically (Dobkin, Tremblay, & Sacchitelle, 1997), resulting in the children having higher levels of depression (Bendikas, 2010). A Taiwanese study has found that inept parenting, including strict discipline, poor supervision, and non-directive parenting practices, were all associated positively with depressive symptoms and antisocial behavior (Wu, Kao, Yen, & Lee, 2007). Tu, Lee and Chan (2012) reported that parental psychological control (paternal and maternal) directly influenced the adolescent depression in Taiwan.

A review of the literature shows that the number of studies examining parental control in the Western context is comparatively much higher than that conducted in the Chinese culture (Shek, 2007b). Although in previous studies psychologically controlling parenting has been linked to various externalized behaviors in children (Latouf, 2008), in the present study we examined the nature of the relationship between psychologically controlling parenting and the antisocial behavior of adolescents.

2.2. Adolescent depression

According to the 2001 WHO World Health Report, the worldwide prevalence of depression is 3%, which equates to a total of 120,000,000 sufferers of depression (World Health Organization, 2001). Depression is the most
prevalent internalizing problem among adolescents (Lewinsohn, Hops, & Roberts, 1993). It is estimated that by 2020, depression will be the second cause of the Disability-Adjusted Life-Year (DALY) behind heart disease (Eisenberg, 1997). A national survey of physical and mental health in Taiwan conducted in 1999 found that 30.5% of 3487 adolescents aged 12-18 years old had experienced depressive symptoms as their most frequent response to stressful life events (Department of Statistics, Ministry of Interior, Taiwan, 1999). Some research findings have also shown associations between psychological control and adolescent internalizing and mood problems (Shek, 2007a).

The youth who internalize distress often report problems that may discourage social interaction or intimacy with others, decreasing the vulnerability for risky behavior in the context of depression (Kincaid, Jones, Cuellar, Gonzalez, 2011); these include the desire to be alone, unwillingness to get involved with others, fearfulness and worthlessness (e.g., Achenbach, 1991). However, some research finding paternal psychological control was not correlated with depression (Bean, Barber & Crane, 2006).

2.3. Antisocial behavior

Antisocial behavior is defined as external behavioral traits with regard to not obeying rules and laws (Baumrind, 2005). These behaviors include assault, vandalism, setting fires, theft, crime and other delinquent acts which conform to social norms (Gaik, Abdullah, Elias, & Uli, 2010). Studies showed that antisocial behavior in adolescence is associated with poor parenting (Wilson, 1987). More recent investigations have confirmed these results, showing that low levels of monitoring are associated more frequent involvement in externalizing and criminal behavior (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006); and internalizing problems (Barber, Olsen, & Shagle, 1994). Parental monitoring of women and negotiation over the use of free time is generally stronger than for men and acts as a strong deterrent against antisocial behavior even in the long term (Borawski, Iervers-Landis, Lovegreen, & Trapol, 2003). The results show that male, and low level of parental monitoring predict a higher involvement in antisocial behavior (Bacchini, Miranda, & Affuso, 2011).

In a Taiwanese study of 1109 seventh-grade students, 47.2% reported that they had engaged in deviant behavior in the past year (Kao, Wu, & Lue, 1998). Although there is substantial evidence that boys are significantly more likely to display antisocial behaviors than girls (Zoccolillo, 1993). Wiesner and Kim (2006) reported that girls were more likely to exhibit comorbid depressive symptoms and delinquent behaviors than were boys (49.5% vs. 25.3%, respectively). Not all the literature supports this theory, however. Maughan, Rowe, Messer, Goodman, and Meltzer (2004) reported that the relationship between conduct problems and depression remained significant for boys but not for girls after controlling for other disorders.

Furthermore, Ingoldsby, Kohl, McMahon, and Lengua (2006) discovered that roughly twice as many boys as girls exhibited co-occurring deviant behaviors and depressive symptoms in the fifth and seventh grades. Ritakallio et al. (2008) found that depression was more predictive of future antisocial behavior than vice versa, this was true only among a sample of girls. In addition, other scholars have argued that there is no predictive relationship between depressive symptoms and behavioral problems for either gender (Ingoldsby et al., 2006).

This study investigates the factors associated with antisocial behavior in a society in transition-Taiwan. The primary aim is to examine how parental psychological control and adolescent depression contributes to the development of antisocial behavior. Furthermore, the current study examines whether depression mediate the relation between parental psychological control and antisocial behavior in adolescent. Thus, the hypotheses were as following, Hypothesis 1: There would be a significant gender and parental education level differences in antisocial behavior are reported in this paper. Hypothesis 2: Psychological control and depression each made independent contributions to antisocial behavior in adolescent. Hypothesis 3: Adolescent depression could be a moderating variable between psychological control and antisocial behavior

2. Method

3.1. Participants

A total of 377 adolescents (i.e., 134 boys, 239 girls, and 4 adolescents who did not endorse their sex) were participants in this study. An examination of the gender of the sample indicated that boys made up 35.9% of the sample. This sample of adolescents was recruited through five senior high school students from major cities in
Taiwan (one city in the northern, two in the southern, one in the western and one in the eastern part of Taiwan) to increase representativeness in social class and in a broad range of attitudes. Participants were not compensated in any way. The demographic characteristics of the participants were as follows (see Table 1). Students who participated in this study ranged from age 15 to 17 years old (M = 15.30, SD = 0.92) and from grade ten through twelve (M = 10.40, SD = 0.65). Data was collected from 395 of those adolescents who were present during data collection times. The final sample consisted of 377 participants who provided valid data for the three questionnaires used in the mediation analyses.

3.2. Measures

3.2.1. Demographics

A demographics sheet requested basic demographic information about participants (e.g., sex, age, grade) and their parents (e.g., education level).

3.2.2. Psychological control

Parental psychological control was measured using The Chinese Paternal Psychological Control Scale (CPPCS) and Chinese Maternal Psychological Control Scale (CMPCS; Shek, 2007a). This measure consists of 10 questions. Participants were asked to respond to questions about their mothers and fathers on separate questionnaires (e.g., “My mother/father will avoid looking at me when I have disappointed her/him”) using a five-point Likert-type scale to indicate the degree to which each statement describes that parent. These items assess the basic features of psychological control, including invalidating personal feelings and experiences (Items 1 and 2), constraining verbal expression, personal attack, love withdrawal, and excessive control. The items in the scales were rated on a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree). To reflect the correspondence between the item score and the intensity of psychological control (i.e., 1: lowest psychological control and 5: highest psychological control), the items were recorded. In a previous report that the CPPCS and CMPCS were internally consistent in different samples (Shek, 2006). In short, there are research findings supporting the reliability and validity of the CPPCS and CMPCS based on Chinese adolescents.

3.2.3. Adolescent depression

The Children's Depression Inventory (CDI; Kovacs, 1992) is the most widely used child and adolescent 7 to 17 years of age self-report measure of depression. The psychometric properties (i.e., reliability, validity, and normative data) of the CDI have been the most extensively studied of instruments used to study depression in children and adolescents. The CDI is a 27-item self-report questionnaire that is used extensively for distinguishing children and adolescents with and without depressive disorders. These items were averaged to construct a scale. Responses are scored on a 3-point scale, with 2 representing the severe form of a depressive symptom and 0 representing the absence of that symptom. For the current sample, the coefficient alpha values of the scores of the full scale were .92 for participants.

3.2.4. Antisocial Behavior

The Antisocial Behavioral Scale (ABS) from the Delinquent subscale of the Child Behavior Checklist-Youth Self-Report (Achenbach & Edelbrock, 1987) was chosen to measure participants’ self-reported levels of antisocial behavioral. The ABS is a six-item scale (e.g., “I hang around with kids who get in trouble”) often used in antisocial behavioral research with adolescents. Response categories ranged from 0 = not true to 2 = very true or often true. Higher scores indicated higher levels of antisocial behavior. The ABS has adequate reliability and high concurrent validity in previous studies (Barber, Stolz & Olsen, 2005). Most important is its common use in previous work that we hoped to validate and refine here.

3.3. Procedure

Participants were recruited from the middle school in Taiwan. The first author went to the classes and provided instruction for the purpose of the survey. They agreed and completed the three inventories in groups. Each participant was asked to review and sign an assent form that briefly described the study. Student participants were given 15-min to complete the questionnaire packet. Members of the research team were available to answer questions during this time. No personally identifying information was solicited on the survey answer sheet. Following completion of their questionnaire packets, student participants received a debriefing form providing more
information concerning the purpose of the study. No special incentive was offered to participants. It is common for instructors in Taiwan to agree to such requests and for students to agree to complete surveys without special incentives.

4. Results

4.1. T-test statistics

Independent samples t-test were used to determine if any significant differences existed between male and female participants for the measures used in this study, to examine the first hypothesis. Means and standard deviations, and results of t-test with gender as the independent variable are provided in Table 1 so that participants’ responses could be put into context. Gender differences were found to be significant in antisocial behavior, $t_{(371)}=4.60$, $p<.001$. For the differences in specific scales of antisocial behavioral scale, male participants in this sample were significantly higher in antisocial behavior. Mean score for men in antisocial behavioral scale were 8.88 and 7.25 for women. Gender effect was found in the antisocial behavior. In general, these scores suggested that female participants in Taiwan have generally positive perceptions of their antisocial behavior. Male and female participants did not differ significantly on any of the other measures in this study, however. As a result, data for male and female participants were examined collectively for the remainder of the analyses.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Overall Sample</th>
<th>Males</th>
<th>Females</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Age</td>
<td>15.30</td>
<td>1.25</td>
<td>15.28</td>
<td>1.45</td>
</tr>
<tr>
<td>Grade Level</td>
<td>1.40</td>
<td>0.65</td>
<td>1.39</td>
<td>0.60</td>
</tr>
<tr>
<td>Paternal Education Level</td>
<td>3.93</td>
<td>1.03</td>
<td>3.98</td>
<td>1.09</td>
</tr>
<tr>
<td>Maternal Education Level</td>
<td>3.93</td>
<td>0.93</td>
<td>3.92</td>
<td>1.02</td>
</tr>
<tr>
<td>Paternal Psychological Control</td>
<td>21.86</td>
<td>8.87</td>
<td>22.75</td>
<td>8.65</td>
</tr>
<tr>
<td>Maternal Psychological Control</td>
<td>23.06</td>
<td>8.95</td>
<td>23.55</td>
<td>8.39</td>
</tr>
<tr>
<td>Adolescent Depression</td>
<td>16.34</td>
<td>6.90</td>
<td>15.85</td>
<td>7.53</td>
</tr>
<tr>
<td>Antisocial Behavioral</td>
<td>7.85</td>
<td>3.06</td>
<td>8.88</td>
<td>3.62</td>
</tr>
</tbody>
</table>

The t tests listed here compare the scores of male and female participants. ***$p<.001$

4.2. Correlation analyses

Correlation analyses examined the relationships among participants’ self-reported antisocial behavior, their perceptions of their parents’ psychological control and depression to examine the second hypothesis. Based on the Table 2, participants’ perceptions of paternal psychological control and maternal psychological control were revealed strong positive correlation to their depression and antisocial behavior ($p=.000 < .01$). These findings suggested that adolescents who perceive their parents to be psychological control report higher levels of depression and antisocial behavior.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>PPC</th>
<th>MPC</th>
<th>AD</th>
<th>AB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal Psychological Control (PPC)</td>
<td>.52***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Psychological Control (MPC)</td>
<td></td>
<td>.52***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adolescent Depression (AD)</td>
<td>.28***</td>
<td>.28***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antisocial Behavioral (AB)</td>
<td>.22***</td>
<td>.24***</td>
<td>.40***</td>
<td></td>
</tr>
</tbody>
</table>

*** $p<.001$, n=356. The square roots of average variance extracted (AVE) are given on the diagonal. The correlation coefficients of constructs are given under the diagonal.

4.3. Results of hierarchical regression analyses

Hierarchical regression analyses were conducted to examine the third hypothesis, which predicted a significant relation among psychological control, depression and antisocial behavior (see Table 3). Consistent with the proposed model, variables were entered in the following order: sociodemographic variables associated with the...
outcome variable were entered in Block 1; Paternal psychological control and maternal psychological control were entered in Block 2 primarily to examine the role of psychological control over and above the established role of psychological control strategies; To examine the main effect of adolescent depression, the primary variable of interest, adolescent depression was entered in the final block. Hierarchical regression models were conducted for antisocial behavior.

From Table 3, sociodemographic variables could explain 9.0% variance of antisocial behavior before inputting psychological control. The overall test of multiple linear regression $F=8.720 \ (p<.001)$ achieved the significance, showing the outstanding effects of sociodemographic variables on antisocial behavior. The regression coefficient of gender ($\beta=-.25, \ p<.001$) and maternal education level ($\beta=-.17; \ p<.01$) achieved the significance and were negative; Gender and maternal education level therefore appeared notably negative effects on antisocial behavior.

After inputting psychological control into the regression model, the overall variance explained increased 5.5% and $F=9.836 \ (p<.001)$ reached the significance. Overall speaking, both sociodemographic variables and psychological control revealed remarkably positive effects on antisocial behavior. The variance explained was 14.5%, increasing obviously. Before inputting psychological control, paternal education level did not present significantly positive effects on sociodemographic variables. However, gender, paternal education level, and maternal education level appeared remarkably effects on antisocial behavior ($\beta=-.23, \ p<.001; \ \beta=.13, \ p<.05; \ \beta=-.16, \ p<.01$) with the moderating effect of psychological control, and the effect strength increased. After inputting the adolescent depression between sociodemographic variables and psychological control, the overall variance explained was increased and $F=13.112 \ (p<.001)$ reached the significance, showing the outstanding effects on antisocial behavior. With the moderating effects between sociodemographic variables and psychological control, gender, paternal education level, maternal education level, maternal psychological control, and adolescent depression($\beta=-.27, \ p<.001; \ \beta=.12, \ p<.05; \ \beta=-.14, \ p<.01; \ \beta=.11, \ p<.05; \ \beta=.26, \ p<.001$) revealed notably effects on Instructional antisocial behavior. H3 therefore was agreed.

### Table 3. Moderating effects of sociodemographic variables, psychological control and adolescent depression on antisocial behavior

<table>
<thead>
<tr>
<th>Hierarchical variables</th>
<th>Model 1 $\beta$</th>
<th>Model 2 $\beta$</th>
<th>Model 3 $\beta$</th>
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<tr>
<td>Grade level</td>
<td>.03</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>Gender</td>
<td>-.25***</td>
<td>-.23***</td>
<td>-.27***</td>
</tr>
<tr>
<td>Paternal education level</td>
<td>.14</td>
<td>.13*</td>
<td>.12*</td>
</tr>
<tr>
<td>Maternal education level</td>
<td>-.17**</td>
<td>-.16**</td>
<td>-.14*</td>
</tr>
<tr>
<td>Psychological Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paternal psychological control</td>
<td>.10</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Maternal psychological control</td>
<td>.16**</td>
<td>.11*</td>
<td>.26***</td>
</tr>
<tr>
<td>Adolescent Depression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F$</td>
<td>8.720***</td>
<td>9.836***</td>
<td>13.112***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.090</td>
<td>.145</td>
<td>.209</td>
</tr>
<tr>
<td>Change in $R^2$</td>
<td>.090</td>
<td>.055</td>
<td>.064</td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>8.720***</td>
<td>11.067***</td>
<td>28.175***</td>
</tr>
</tbody>
</table>

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

5. Discussion

We examined the interrelationship of parental psychological control, adolescent depression and antisocial behavior in Taiwan. Understanding the relationships between these variables is important, as adolescents who exhibit antisocial behavior are at heightened risk for a number of negative outcomes (e.g., assault, vandalism, setting fires, theft, crime; Gaik, Abdullah, Elias, & Uli, 2010). Therefore, prevention and interventions targeting adolescents who are at high risk for the development of such behaviors is of the utmost importance for the well being of both the adolescents themselves, their families, and the community at large.
The first hypothesis of our research was that there would be a significant gender and parental education level differences in antisocial behavior are reported in this paper. This hypothesis was largely confirmed. Our findings are consistent with a large literature showing that men are more likely than women to be involved in antisocial behavior. Several studies have found that males perform more aggressive behaviors than females (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003; Zoccolillo, 1993). We had similar findings, male participants in this study were significantly higher in antisocial behavior. Family variables are important and consistent for early forms of antisocial behavior and for later delinquency. Although many studies prove that poor monitoring, poor supervision, and harsh discipline are the cause of the child’s antisocial behavior; family demographic variables such parental education also related to the antisocial behavior (Elliott et al., 1985). When comparing paternal and maternal educational level, the results of this study suggest that mother’s educational level in this sample were significantly higher in antisocial behavior. Overall, gender and maternal education level therefore appeared notably negative effects on antisocial behavior.

The second hypothesis, that psychological control and depression each made independent contributions to antisocial behavior in adolescent, was partially confirmed. When comparing mothers and fathers the results of this study suggest that mothers are perceived as significantly more psychologically controlling than fathers. Furthermore, maternal psychological control was the stronger predictor of antisocial behavior. This result extends previous research (Barber, 1996, 2001; Bendikas, 2010) and provides a starting point for re-examining and improving parenting adolescents in Taiwan. A possible explanation for this finding could be that mothers are often care for, provide for, and protect their children. In this situation, mothers could be perceived as controlling (Roman, Human, & Hiss, 2012). Results gained in this study support previous findings that psychologically controlling parenting and antisocial behavior are significantly and positively correlated. These results corroborate previous reports that psychological control may be a significant predictor of youth problem behavior (Barber, 1996; Barber et al., 2005).

The third hypothesis, that adolescent depression could be a moderating variable between psychological control and antisocial behavior, has been also confirmed. Adolescent depression moderates the relationship between psychological control and antisocial behavior. Our study shows that adolescent depression was uniquely associated with antisocial behavior. The link between psychological control and antisocial behavior was mediated by adolescent depression. In response to antisocial behavior, adolescents may be more likely to respond with decreases in depression symptoms. Several studies have revealed that depression and antisocial behavior associate in adolescence (Ritakallio, et al., 2010). The prevalence of co-occurring depressive disorders and problem behavior among adolescents is well established in the literature (Pliszka, Sherman, Barrow, & Irick, 2000). Depression disorders have been identified as significant correlates of antisocial behavior among youth (Pliszka, et al., 2000). Nebbitt and Lombe (2008) indicated that gender and depression were significant correlates of antisocial behavior of African American adolescents. Similarly, antisocial behavior was associated with depression in both sexes (Ritakallio, et al., 2010).

6. Conclusion

We examined the interrelationship of parental psychological control, adolescent depression and antisocial behavior in Taiwan. Understanding the relationships among these variables is important, as adolescents who exhibit antisocial behavior are at heightened risk for a number of negative outcomes. Therefore, prevention and interventions targeting adolescents who are at high risk for the development of such behaviors is of the utmost importance for the well being of both the adolescents themselves, their families, and the community at large.

Adolescence is a critical period for the development of externalizing disorders, even for persons who have never displayed problem behavior during childhood (Moffitt, 1993). In this study, we sought to establish the relationship among parental psychologically controlling practice, depression and the antisocial behavior of adolescents in a sample of Taiwan senior high school students. Our results contribute to the very limited literature regarding parenting in the phase of adolescents in Taiwan. Furthermore, comprehensive clinical assessment and treatment of antisocial adolescents should be considered. The convergence of traditional Chinese culture and modern western values in the 20th century in Taiwan had a significant effect on family structures and processes (Shen, 2005). The
results of this study could provide important information for therapists and counselors. Specifically for this sample of adolescents, if they are engaging in antisocial behavior, both adolescents and their parents should receive assistance through intervention.

7. Limitations and Implications

Research about adolescents with antisocial behavior is an important means of developing strategies to prevent the problem of adolescent tendency to commit crime, delinquency, or criminal behavior (Lue, Wu, & Yen, 2010). A major limitation of the current study is the lack of diagnostic interviews and lack of additional information (e.g. parents, teachers) as psychological control, depression and antisocial behavior were measured by self-report scales. Some limitations emerged in this study. Participants were restricted to a sample of senior high school students in Taiwan, which means that the results may not be generalizable to other populations. The cross-sectional design of this study provides a certain perspective of the relationships between parental psychological control, depression and the antisocial behavior of adolescents, limits its ability to establish causal inference. Further research could be focused on longitudinal designs or repeated measures of these variables. Furthermore, the accuracy of the data is limited by the accuracy to which respondents recall and self-reported their feelings and behaviors. It should be noted that other predictors (not included in this analysis) such as social support and daily hassles may also influence antisocial behavior.

Despite these limitations this study may make important contributions to understanding relations between parental psychological control, depression, and antisocial behavior of adolescents in a culture different from the mainstream research held in America. Although a certain discrepancy with the existing literature was uncovered, these findings are important because they help focus more specific attention on the parental psychological control, depression, and antisocial behavior of adolescents in Taiwanese families.

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