Parental Behavioral and Psychological Control and Problematic Internet Use Among Chinese Adolescents: The Mediating Role of Self-Control

Xian Li, MS1, Dongping Li, PhD2, and Joan Newman, PhD3

Abstract

Previous research has reported contradictory effects of parental control on adolescents’ problematic Internet use (PIU). To reconcile the discrepant findings, the current study examined the differential effects of parental behavioral control (solicitation and restriction) and psychological control (guilt induction, love withdrawal, and authority assertion) on adolescents’ PIU. The mediating effect of self-control on the relationships between parental control and PIU was also examined. A total of 694 Chinese adolescents (M=13.67 years) completed questionnaire measures of parental behavioral control, psychological control, self-control, and PIU. After adjusting for age, gender, and family financial status, it was found that parental restriction (a form of behavioral control) was negatively associated with PIU, whereas love withdrawal (a form of psychological control) was positively associated with PIU. Increased self-control was associated with decreased PIU, and changes in self-control at least partially mediated the differential effects of parental behavioral and psychological control on PIU. Theoretical and practical implications of these findings are discussed.

Introduction

Despite offering multiple advantages, the Internet has produced difficulties for some individuals. Problematic Internet use (PIU) refers to “use of the Internet that creates psychological, social, school and/or work difficulties in a person’s life.”1 It is distinguished from, but related to, Internet addiction, which is a clinical category.2 PIU is common, and can have serious immediate and long-term ramifications.3 China is among the countries reporting serious problems associated with Internet usage,4,5 but studies show widespread prevalence of PIU in many countries.6-8 Because of this, identification of the contributing factors and mechanisms of PIU is essential for the development of empirically based prevention and intervention programs.

Among the many factors influencing adolescent PIU, the role of parental control has received theoretical and empirical attention. Research conducted in several countries has, however, yielded contradictory evidence regarding this important topic. For example, Lin et al.9 found that parental control had a significant negative effect on PIU. Similarly, Sun et al.10 found that parental control was negatively related to use of e-mail, chatrooms, and the Internet. However, Giles and Price11 found maternal control to be positively associated with PIU.

One possible reason for such inconsistent findings is that the concept of parental control has been operationalized differently in different studies. Parental control comprises both behavioral and psychological control.12,13 Behavioral control refers to the rules, regulations, and restrictions that parents impose on their children, as well as the active monitoring of children’s activities and whereabouts. In contrast, psychological control includes parenting behaviors such as guilt induction, love withdrawal, and authority assertion, which interfere with the children’s establishment of a sense of identity and autonomy.12,14 A considerable volume of research has demonstrated that behavioral control benefits adolescents by increasing positive functioning and lessening deviant behaviors, whereas psychological control compromises adolescents’ feelings of autonomy and competence, which leads to psychosocial dysfunction such as emotional distress and internalizing problems.12,15,16

Among existing studies of the association between parental control and PIU, Lin et al.9 and Sun et al.10 primarily focused on behavioral control. A typical question from their instruments is “My parents set rules about how I spend my leisure time.” In contrast, Giles and Price11 primarily focused on psychological control, for example “My parents tried to make me feel dependent on them.”12

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Behavioral control and psychological control may have distinct effects on PIU. Behavioral control is composed of the actions parents take to manage children’s behaviors. If parents consistently regulate adolescents' frequency of using the Internet, or constantly monitor adolescents’ online activities, it is less likely that adolescents will develop PIU. 

In contrast, parental psychological control frustrates the satisfaction of three basic psychological needs—competence, relatedness, and autonomy—and may trigger adolescents’ efforts to satisfy these needs through the Internet. Several studies have supported this argument. Yu et al., for example, found that unsatisfied psychological needs are important risk factors for adolescents’ PIU. Similarly, Xiuqin et al. revealed that overintrusive parenting (similar to psychological control) was positively associated with PIU.

To our knowledge, no research to date has simultaneously examined both forms of parental control and compared whether they have differential effects on PIU. Based on the results of previous research, we expect that behavioral control will be negatively associated with PIU, but psychological control will be positively associated with PIU. However, little is known about how these differential effects occur. In the present study, we constructed a mediation model (Fig. 1) to examine whether the two forms of parental control have different impacts on adolescents’ development of self-control, which in turn allows them to regulate Internet usage and so reduce their PIU. Self-control is defined as “the ability to monitor, inhibit, persevere and adapt behavior, emotions, thoughts and desires in order to achieve a certain goal.” There is extensive evidence supporting self-control as a protective factor against PIU. In addition, there are theoretical and empirical grounds for the impact of parental control on adolescents’ self-control. Self-control requires both selection of desirable behaviors and inhibition of those that are inappropriate. Parents have an important role in the extent to which children develop each of these aspects of self-control. Parental modeling and selective reinforcement of behaviors (behavioral control) are significant in the development of adolescents’ self-control. However, psychological control may undermine the development of adolescents’ autonomy and self-control. Because types of parental control appear to influence self-control, which in turn impacts PIU, we hypothesize that self-control mediates the associations between parental control and PIU.

In summary, we have two hypotheses, both illustrated in Figure 1.

H1. Behavioral control (solicitation and restriction) will be negatively associated with PIU, whereas psychological control (guilt induction, love withdrawal, and authority assertion) will be positively associated with PIU.

H2. Self-control will mediate the association between parental control and PIU.

Method

Participants

After obtaining IRB approval, participants were recruited from two regular junior high schools in eastern China by random cluster sampling. Very few participants declined to participate. A total of 694 students (382 girls and 312 boys) completed the survey. Most of the participants reported that they were from families of average income. The average age of the participants was 13.67 years (SD = 1.23), with a range from 12 to 17 years.

Measures

Parental control. Participants reported on their parents’ behavioral and psychological control by responding to a 34-item questionnaire developed by Wang et al. for use with Chinese as well as American adolescents.

(a) Behavioral control was measured with 16 items. Eight of these items reflected the solicitation dimension (e.g., “How often do your parents initiate a conversation with you about what happens during your free time?”), and eight items reflected the restriction dimension (e.g., “How often do your parents require you to ask for their permission before you go out after school?”). Participants indicated for each item the frequency with which their parents engaged in the practice described (1 = “never”; 5 = “very often”). The mean of the eight items of each dimension was calculated, with higher scores representing greater behavioral control. The Cronbach’s alpha coefficients of the dimensions of solicitation and restriction were 0.72 and 0.75 respectively for our data.

(b) Psychological control was measured with 18 items. Ten items reflected the guilt induction dimension (e.g., “My parents tell me that I should feel guilty when I do not meet their expectations.”), five reflected the love withdrawal dimension (e.g., “My parents act cold and unfriendly if I do something they do not like.”), and three reflected the authority assertion dimension (e.g., “My parents tell me that what they want me to do is the best for me and I should not question it.”).

FIG. 1. Conceptual model of parental control, self-control, and problematic Internet use.
Participants indicated how true each item was of their parents (1 = “not at all true”; 5 = “very true”). The mean of each dimension was calculated, with higher scores indicating greater psychological control. The Cronbach’s alpha coefficients of the three dimensions were 0.74, 0.77, and 0.62 respectively.

Self-control. We adapted five items from a self-control scale for which validity was established by prior researchers. A representative item was “Even if I know that I shouldn’t do those things, I still do them anyway.” Participants rated how true each statement was for themselves on a 6-point scale ranging from 1 = “not at all true” to 6 = “always true.” The mean was calculated, with higher scores representing higher levels of self-control. The Cronbach’s alpha coefficient was 0.74.

PIU. Adolescent PIU was assessed with ten items adapted from Young’s groundbreaking and widely used diagnostic questionnaire for screening of Internet dependency in a variety of countries. This scale has also demonstrated good reliability and validity in Chinese samples, and similar items have been used in the National Children’s Study of China project. A representative item was: “Do you use the Internet as a way of escaping from problems or of relieving an unhappy mood?” For each item, adolescents indicated how true it was on a 6-point scale ranging from 1 = “not at all true” to 6 = “always true.” The mean was calculated, with higher scores representing higher levels of PIU. The Cronbach’s alpha coefficient was 0.92 for the present sample.

Results

Descriptive analyses

Table 1 contains bivariate correlations for major variables involved in the study. Greater age was associated with less parental behavioral control as well as less self-control. Self-control was moderately associated with PIU. Within the parental control dimension, correlations ranged from 0.37 to 0.61. These results are consistent with previous literature and Chinese national data. It can be seen that the two subscales of behavioral control have medium to large and significant correlations with each other, as do the three subscales of psychological control. By contrast, the subscales of each parenting dimension (behavioral control and psychological control) have a small or no correlation with the subscales of the other parenting dimension. This pattern of correlations supports our consideration of the two parenting control dimensions as separate.

Regression analyses

Multiple regression was performed (see equation 1 in Table 2) and adjusted for age, gender, and family financial status. This enabled us to test the distinct effects of parental behavioral and psychological control. As can be seen, the behavioral control dimension of parental restriction was negatively associated with PIU ($B = -0.13, SE = 0.05, p < 0.05$), and solicitation was not significantly associated with PIU. By contrast, the psychological control technique of love withdrawal was positively associated with PIU ($B = 0.23, SE = 0.05, p < 0.001$), and neither guilt induction nor authority assertion was significantly associated with PIU. Therefore, hypothesis 1 was partially supported.

To test the mediating effect of self-control on the relationship between parental control and PIU, a set of multiple regression analyses was performed. According to Baron and Kenny, the following should be present to establish mediation: (a) a significant effect of parental control on PIU; (b) a significant effect of parental control on self-control; (c) a noteworthy relationship between self-control and PIU when parental control is controlled for; and (d) a noteworthy reduction of the effect of parental control on PIU when self-control was entered into the model. A Sobel test determines whether the last condition is satisfied.

After adjusting for age, gender, and family financial status, self-control was found to mediate the associations between the two forms of parental control and PIU with the following patterns:

For behavioral control, parental restriction was negatively associated with PIU (see equation 1 of Table 2) and positively associated with self-control (see equation 2 in Table 2, $B = 0.14, SE = 0.05, p < 0.01$). After controlling for parental control, self-control still significantly predicted PIU (see equation 3 in Table 2; $B = -0.24, SE = 0.04, p < 0.001$). The Sobel test indicated that the effect of parental restriction on PIU was

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**Table 1. Univariate and Bivariate Statistics for All Variables (N=694)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tbody>
<tr>
<td>1. Gender</td>
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<tr>
<td>2. Age</td>
<td>-0.02</td>
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<tr>
<td>3. Financial status</td>
<td>0.16***</td>
<td>0.04</td>
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<tr>
<td>4. Solicitation</td>
<td>0.11**</td>
<td>-0.17***</td>
<td>0.05</td>
<td>—</td>
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<tr>
<td>5. Restriction</td>
<td>-0.02</td>
<td>-0.10**</td>
<td>-0.01</td>
<td>0.47***</td>
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<tr>
<td>6. Guilt induction</td>
<td>0.07</td>
<td>-0.01</td>
<td>0.00</td>
<td>0.08*</td>
<td>0.28***</td>
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<tr>
<td>7. Love withdrawal</td>
<td>0.10*</td>
<td>0.04</td>
<td>-0.06</td>
<td>-0.04</td>
<td>0.09*</td>
<td>0.53***</td>
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<td>8. Authority assertion</td>
<td>0.03</td>
<td>-0.02</td>
<td>0.05</td>
<td>0.02</td>
<td>0.21***</td>
<td>0.61***</td>
<td>0.37***</td>
<td>—</td>
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<tr>
<td>9. Self-control</td>
<td>-0.03</td>
<td>-0.28***</td>
<td>-0.05</td>
<td>0.24***</td>
<td>0.16***</td>
<td>-0.13**</td>
<td>-0.24***</td>
<td>-0.15***</td>
<td>—</td>
<td>—</td>
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<tr>
<td>10. PIU</td>
<td>0.25***</td>
<td>0.12**</td>
<td>0.21***</td>
<td>0.03</td>
<td>-0.06</td>
<td>0.12**</td>
<td>0.20***</td>
<td>0.09*</td>
<td>-0.29***</td>
<td>—</td>
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</tbody>
</table>

**Note.** Gender was dummy coded such that 0 = “female” and 1 = “male.” Financial status: higher score indicated better family income. Behavioral control comprises both solicitation and restriction. Psychological control comprises guilt induction, love withdrawal, and authority assertion. PIU = problematic Internet use. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. 
fully mediated by self-control (Z = −2.54, p < 0.05). Since the effect of solicitation on PIU was not significant in equation 1, we did not examine its mediation effect.

For psychological control, love withdrawal was positively associated with PIU (see equation 1 of Table 2) and negatively associated with self-control (see equation 2 of Table 2, B = −0.23, SE = 0.05, p < 0.001). After controlling for parental control, self-control still significantly predicted PIU (see equation 3 in Table 2; B = −0.24, SE = 0.04, p < 0.001). The Sobel test indicated that the effect of love withdrawal on PIU was partially mediated by self-control (Z = 3.65, p < 0.001). Since the effects of guilt induction and authority assertion on PIU were not significant in equation 1, we did not examine their mediation effects.

Hypothesis 2 was partially supported because components of both behavioral control (restriction) and psychological control (love withdrawal) impacted PIU through the mediating effect of self-control. However, they had opposite effects in that behavioral control (restriction) decreased PIU through promoting self-control, whereas psychological control (love withdrawal) increased PIU through decreasing self-control. The remaining subscales of parental control did not relate to PIU and self-control in a manner that was a fit with our model.

Discussion

The role of parental control on adolescents’ PIU has garnered considerable attention, but previous studies have indicated seemingly conflicting conclusions and thus caused difficulties for practical intervention. The current research was designed to resolve the contradictory findings and shed light on the questions of how parental control affects PIU by investigating whether different types of parental control have different effects on adolescents’ PIU, as well as how these differential effects occur.

We proposed that parental behavioral control would be negatively associated with PIU, whereas psychological control would be positively associated with PIU. The pattern of results partially supported our hypotheses, with parental restriction (behavioral control) negatively predicting PIU, and love withdrawal (psychological control) positively predicting PIU. On one hand, the impact of restriction on PIU was consistent with existing literature that reports that parental behavioral control benefits adolescents by facilitating their engagement in socially approved behaviors and inhibiting deviant behaviors. On the other hand, love withdrawal implies that parents’ affection and involvement is conditional on adolescents behaving in a desirable and approved manner. Loss of such important parental resources during adolescence might lead to detrimental outcomes such as PIU. Our results indicate the importance of distinguishing between behavioral and psychological control by parents. In addition, they indicated the need to consider specific parenting characteristics, as the two components of each parenting dimension did not function in the same way.

The second purpose of the present study was to determine whether parental control impacts PIU through the mediating role of self-control. The pattern of results partially supports our hypotheses because self-control fully mediated the impact of restriction and partially mediated the effect of love withdrawal on PIU. Our results are consistent with Engels and Finkenauer’s finding that parental psychological control affects self-control, which in turn affects children’s behavior. Similarly, Meldrum reported that parental monitoring predicted higher levels of self-control. These findings are important because they provide support for the self-control theory; parental control (an external factor) has exerted influence on adolescents’ development through impacting the development of self-control (an internal factor). Our results add to these findings by showing which aspects of parental behavioral and psychological control influence the development of self-control and thence of PIU. Parental restriction of their child’s behavior had a positive effect and parental love withdrawal had a negative effect.

Contrary to our expectation, one dimension of behavioral control (solicitation) and two dimensions of psychological control (guilt induction and authority assertion) were not significantly associated with PIU. This may have occurred

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**Table 2. Testing the Mediating Effects of Self-Control on PIU (N = 694)**

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<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
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<tr>
<td>Gender</td>
<td>0.35</td>
<td>0.07</td>
<td>0.19***</td>
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<tr>
<td>Age</td>
<td>0.09</td>
<td>0.03</td>
<td>0.11**</td>
</tr>
<tr>
<td>Financial status</td>
<td>0.22</td>
<td>0.04</td>
<td>0.15***</td>
</tr>
<tr>
<td>Solicitation</td>
<td>0.10</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td>Restriction</td>
<td>−0.13</td>
<td>0.05</td>
<td>−0.10*</td>
</tr>
<tr>
<td>Guilt induction</td>
<td>0.02</td>
<td>0.07</td>
<td>0.01</td>
</tr>
<tr>
<td>Love withdrawal</td>
<td>0.23</td>
<td>0.05</td>
<td>0.19***</td>
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<tr>
<td>Authority assertion</td>
<td>0.02</td>
<td>0.04</td>
<td>0.02</td>
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<tr>
<td>Self-control</td>
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<td>R²</td>
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<td>F</td>
<td>14.95***</td>
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*Note. Each column set is a regression equation that predicts the criterion at the top of the column. Gender was dummy coded such that 0 = “female” and 1 = “male.” Financial status: higher score indicated higher levels of family income. Behavioral control comprises both solicitation and restriction. Psychological control comprises guilt induction, love withdrawal, and authority assertion. PIU = problematic Internet use. *p < 0.05; **p < 0.01; ***p < 0.001.
because some parental control techniques simultaneously influence self-control and induce negative emotions. Thus these practices might partially counteract each other. Future studies should include mediators other than self-control to examine the possible dual effects of guilt induction and authority assertion on PIU.

**Implications**

Findings from the present study reveal the differential impact of two parenting control techniques (restriction and love withdrawal) on adolescents’ PIU, as well as the mediating role of self-control. These findings suggest that parenting intervention may be effective in reducing adolescent PIU. However, it is worth noting that although behavioral control, such as by restriction, has certain beneficial effects on adolescent development, overly high behavioral control may make adolescents react negatively and thus lead to adjustment difficulties.40 Because of this, parents should be careful to establish appropriate boundaries and use behavioral control in conjunction with parental warmth. Also, parents should be aware of the negative effect of love withdrawal and avoid this strategy in the youth’s PIU intervention. In addition, because the effects of parental control on adolescents’ PIU were mediated by self-control, parents and clinical practitioners may reduce the risk of PIU by improving adolescents’ self-control, and may achieve this by appropriate parental involvement and management of the adolescents. Problematic Internet use has been reported to be particularly serious during the college years.41 Effective parenting at an earlier point in their children’s development will reduce the likelihood of such serious consequences.

Liddle et al.42 developed a multidimensional family therapy model as treatment for addicted adolescents. They emphasized helping adolescents to develop self-regulation skills, as well as helping parents improve behavioral and emotional involvement with adolescents by developing effective parenting skills such as monitoring their adolescents’ behavior and setting limits and consequences. Our results support this PIU intervention model.

**Limitations**

Several limitations must be considered when interpreting the results of the present study. First, our cross-sectional research design does not allow for causal inferences; future research should utilize longitudinal methods to establish the causal order of variables. Second, all measures in this study were based on youths’ self-report. Future research would benefit from using multiple informants and multiple data collection methods simultaneously to collect data. Third, the model was tested on a group of Chinese adolescents. More empirical data are needed on adolescents from other geographic locations and ethnicity to validate and generalize the findings. Also, because self-control only partially mediated the effect of parental psychological control on PIU, it is likely that other mediators, such as adolescents’ coping strategies, are also involved.

**Conclusions**

Our study made two important contributions to the existing literature. First, it distinguished the effects of behavioral and psychological control on PIU. This is critical for developing PIU prevention and intervention programs. Second, the role of self-control as a mediator among these relationships was supported. Taken together, the results suggest that aspects of parental behavioral control reduce adolescents’ PIU whereas aspects of psychological control increase adolescents’ PIU through mediating effects on self-control. The importance of maintaining a distinction between behavioral and psychological control in discussions of adolescents’ PIU is supported by the current study.

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**Author Disclosure Statement**

No competing financial interests exist.

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