Longitudinal associations between adolescent alcohol use and parents’ sources of knowledge

Panayiotis Stavrinides*, Stelios Georgiou and Andreas Demetriou
University of Cyprus, Nicosia, Cyprus

The aim of this study was to test the direction of effect in the relationship between parents’ sources of knowledge (parental monitoring and child disclosure) and adolescent alcohol use. The participants were 215 adolescents and their mothers, randomly selected from urban and rural areas in Cyprus. A 3-month, two-timepoint longitudinal design was used in which adolescents completed the alcohol use disorders identification test while mothers completed a parental knowledge questionnaire. The results of this study showed that parental monitoring did not predict subsequent adolescent alcohol use. However, child disclosure at Time 1 negatively predicted adolescent alcohol use at Time 2. Moreover, adolescents’ alcohol dependence symptoms at Time 1 negatively predicted both sources of parental knowledge at Time 2.

Parents often assume that the more they know about their children, particularly during the adolescent years, the better off their children will be. Some authors, however, especially during the past decade (Crouter & Head, 2002; Laird, Pettit, Bates, & Dodge, 2003; Stattin & Kerr, 2000) have started to emphasize the various facets of this knowledge gaining process. In what ways do parents consciously try to gain knowledge about their children’s whereabouts? How is active parental monitoring different from other sources of knowledge such as child disclosure? And more importantly, what kind of developmental outcomes do these different sources of knowledge produce?

Early adolescence is a period of increased effort for autonomy and this sometimes leads to socially problematic behaviour. One such behaviour is heavy drinking and alcohol abuse (Griffin, Botvin, Scheirer, Diaz, & Miller, 2000). Healthy development requires that adolescents are granted sufficient space to achieve an independent sense of identity, while still maintaining connection to their parents (Dishion, Nelson, & Bullock, 2004). Thus, it is not surprising that adolescent delinquency has been linked to low or ineffective parenting practices. Parents’ knowledge about their children’s behaviour, and especially about what their children do outside of the safe environment of home, may not directly decrease risk taking behaviour on the part of the adolescent.

*Correspondence should be addressed to Dr Panayiotis Stavrinides, Department of Psychology, University of Cyprus, PO Box 20537, 1678 Nicosia, Cyprus (e-mail: stavrini@ucy.ac.cy).
Such knowledge, however, could act as a buffer against behaviours that would escalate into antisocial levels (Mounts, 2001; Sullivan, Kung, & Farrell, 2004).

Parents gain knowledge about their children from two main sources: one is parental monitoring and the other is child disclosure. Parental monitoring is a critical source of parental knowledge and it reflects the parents’ effort to find out directly and through their own observation how their child behaves. It is defined as ‘a set of correlated parenting behaviours involving attention to and tracking of the child’s whereabouts, activities and adaptation’ (Dishion & McMahon, 1998, p. 66). Weintraub and Gold (1991) add that monitoring refers to the extent and the quality of communication, and the surveillance that parents exercise over their children’s life. In general, research suggests that parents who systematically monitor their children’s behaviour, have adolescents who are less likely to engage in substance abuse (Barnes & Farrell, 1992; Fletcher, Steinberg, & Wheeler-Williams, 2004; Reifman, Barnes, Dintcheff, Farrell, & Uhteg, 1998; van der Vorst, Engels, Meeus, Dekovic, & Vermulst, 2006; Waizenhofer, Buchanan, & Newsom-Jackson, 2004; Wood, Read, Mitchell, & Brand, 2004).

Additionally, there is a large body of research in the relevant literature showing consistently that an association exists between parenting style and undesirable behaviour of adolescents. For example, Steinberg, Fletcher, and Darling (1994) found that adolescents that were raised by authoritative parents (i.e., high in both responsiveness and demandingness) are less likely to engage in substance abuse.

Even though both parental monitoring and parenting style appear to be closely related terms, a clear theoretical and conceptual distinction exists between the two. Unlike the parental monitoring construct, the notion of authoritative parenting style does not imply any active effort on the parents’ behalf to control their youths. Parenting style merely reflects the emotional climate in which parents raise their children. This climate is reflected through the two main dimensions of parenting style; responsiveness (the general tendency to respond to the child’s needs) and demandingness (parental expectations that are related to the child’s behaviour and socialization). Thus, it is not yet clear whether children of authoritative parents tend to show less problem behaviour because of behaviour initiated by the parents or because of children’s tendency to disclose information about their behaviour and socialization efforts. The balance between the two may be the most important contributing factor to the favourable outcomes observed in children.

In fact, although most studies report negative correlations between parental monitoring and child problematic behaviour, some studies claim the opposite. Steinberg and Silverberg (1986), for example, argue in favour of the autonomy-granting perspective. According to this, reductions in monitoring are followed by reductions in delinquent behaviour as parents grant more autonomy to well-adjusted adolescents. Furthermore, a number of studies have shown that perceived maternal monitoring is associated with an increase in adolescent alcohol use (e.g., Webb, Bray, Getz, & Admas, 2002). Thus, the relationship between active parental monitoring and children’s problem behaviour is a matter of some debate.

Furthermore, some authors have suggested that the relationship between parental monitoring and children’s rule breaking should be reinterpreted as a two-way rather than a one-way (parent to child) process (e.g., Kerr & Stat tin, 2000; Stat tin & Kerr, 2000). Other studies also suggest a dynamic view of family systems in which parents and children influence each other in a reciprocal way that allows parental actions to influence child development and at the same time the child’s actions to influence
parental behaviour (Caldwell, Beutler, Ross, & Silver, 2005; Crouter, MacDermid, McHale, & Perry-Jenkins, 1990; Waizenhofer et al., 2004).

This raises the question of whether child disclosure might be a more important source of parental knowledge than active parental monitoring. Child disclosure is the children’s free, willing information providing to their parents about where they are during their free time, how they do in school, whether they keep secrets from them, who they socialize with, and what they do when they go out at night. Kerr, Stattin, and Trost (1999) found that parents tend to trust their children more when their children disclose information to their parents about their activities and socialization. Further, Stattin and Kerr (2000) documented the relationship between child disclosure and adolescents’ adjustment by showing that child disclosure predicts less norm-breaking behaviour.

Research on the development of adolescent delinquency uses multiple research and statistical methods in order to estimate bidirectional parent-child relations (Crouter & Booth, 2003; O’Connor, 2002; Wood et al., 2004). In this line of research, Laird et al. (2003) found that lower levels of parental monitoring predicted greater delinquent behaviour the following year and that lower levels of delinquent behaviour predicted higher levels of monitoring. From a parent-effects perspective, adolescent delinquent behaviour tends to decrease in response to parental efforts. Alternatively, from a child-effects perspective, high levels of delinquent behaviour cause a decrease of parental monitoring, depending on whether one supports the abdicating or the autonomy-adjusting parenting model (Crouter et al., 1990; Laird et al., 2003).

Dishion et al. (2004) have proposed a bidirectional model, which they call ‘premature autonomy’ model, claiming that parents tend to disengage from their children that lean towards deviant behaviours. Similarly, other studies have shown that adolescent engagement in delinquency predicts relative declines over time in the parent-adolescent relationship (Laird et al., 2003; Smetana & Daddis, 2002). Also, Patterson and Dishion (1985), describe a process by means of which parents abdicate their parental responsibilities and disengage in the face of adolescent problem behaviour. As a result, the now abandoned adolescent has enhanced opportunities for even more delinquent behaviour, which in turn affects negatively the parenting practices (Patterson, Reid, & Dishion, 1992).

Despite the fact that transactional models in their original conception emphasized both directions of causality (e.g., Patterson & Dishion, 1985) some proponents of these models assert that the causal pathway from children to parents is more influential, in that adolescent deviant behaviour predicts parental monitoring efforts much more strongly than parenting predicts delinquent behaviour (Jang & Smith, 1997; Kerr & Stattin, 2003).

In summarizing, prior research indicates that delinquent behaviour is likely to predict reductions in parental knowledge. As Crouter and Head (2002) conclude, children who engage in problem behaviour are more likely to avoid sharing information with their parents that is related to their actions and whereabouts. From a child effects perspective, as Laird et al. (2003) have emphasized, this is a critical distinction because it shows that parental knowledge is influenced not only by the parents’ active effort to control their children (parental monitoring) but by the child’s engagement in problem behaviour or adjustment difficulties which lead to unwillingness to disclose their personal activities to their parents. The present study aims at examining the possible differences in the influence of the various sources of parental knowledge such as parental control and solicitation on the one hand and child disclosure on the
other. At the same time, we investigate the opposite direction of effects which is the influence of adolescent alcohol use on the sources of parents’ knowledge. Our main hypothesis is that child disclosure will have the strongest impact in the reduction in adolescent alcohol use. That is because, as Laird et al. (2003) found, children who disclose freely are more likely to reduce any behaviour identified as problematic. Based on the transactional model, we further hypothesize that an opposite direction of effects will be observed. That is, we expect that problem behaviour such as consuming alcohol in adolescence will reduce the child’s tendency to disclose information to their parents. Accordingly, parents will have less control over their children who drink during their adolescent years and they will be less capable to solicit information from them.

**The present study**

The purpose of the present study is to examine the interrelations between the two main sources of parental knowledge and adolescent problem behaviour. Specifically, we aim to examine whether parental monitoring and child disclosure can predict adolescent alcohol use, or whether adolescent alcohol use predicts parental monitoring and child disclosure. To address these questions, we tested longitudinal associations between parental monitoring, child disclosure, and adolescent alcohol use in order to determine the sequence of events-actions and reactions between parents and youths.

**Method**

**Participants**

The initial sample of the first phase of this study was 284 adolescents and their mothers. On the second phase, however, 69 mothers (24.2%) did not return the questionnaire, or they returned it incomplete and they were, therefore, excluded from the final sample.

The participants of the two phases of this study were 215 early adolescents and their mothers (mean age = 41.7 years, *SD* = 3.14). Children’s mean age was 15.07 years with a standard deviation of 0.48 years. All children attended the ninth grade during the 2006 academic year. Both genders were equally represented in the sample with 109 (51%) females and 106 males (49%). The schools were randomly selected in order to generate a sample of students from all socio-economic groups and geographic areas. In fact, the sample consists of 80% of students from urban areas and 20% from rural areas. Also, 15% of the families come from low socio-economic status, 75% from middle, and 10% from high socio-economic status. These figures are consistent with the socio-demographic characteristics of the Cyprus population.

**Measures**

*Parental knowledge* was measured by means of an adaptation of Stattin and Kerr’s (2000) questionnaire. The authors claim that there are two main sources from which parents can learn about their adolescents’ activities through: parental monitoring (parental control and parental solicitation) and child disclosure. Based on this assumption, a 15-item instrument was created as follows.
**Parental control**

This subscale consists of the following five items: ‘Does the child need to have your permission to stay out late on a weekday evening?’, ‘Does your child need to ask for your permission before he/she decides with his/her friends what they will do on a Saturday evening?’, ‘If your child stays out until late one night, do you require that he/she explains what he/she has been doing and who he/she was with?’, ‘Do you always require that your child tells you where he/she has been at night, who he/she was with, and what they did together?’, and ‘Before your child goes out on a Saturday night, do you require him/her to tell where he/she will be at and with whom?’. Answers on this and the subsequent subscales were given on a five-point scale (1 = never, 5 = always) and the Cronbach alpha reliabilities were .72 at Time 1 and .82 at Time 2.

**Parental solicitation**

This subscale also consists of five items. The participating parents were asked to answer on a five-point scale the following questions: ‘How often do you talk to your child’s friends when they come over to your house?’, ‘During the past month, have you talked to the parents of your child’s friends?’, ‘During the past month, have you talked to your child about how he/she spends his/her free time?’, ‘How often do you talk with your child about things that happen during a usual day?’, and ‘Do you usually ask your child how he/she spends his/her free time?’. Cronbach alphas for the two times that parents responded on this scale were .73 and .77, respectively.

**Child disclosure**

The child disclosure subscale consists of five items as well. These were the following questions: ‘How often does your child talk to you about his/her achievement in various school subjects?’, ‘How often does your child talk do you about a usual day at school?’, ‘Does your child keep many secrets from you regarding his/her free time?’, ‘Does your child keep many secrets about what he/she does during nights and weekends?’, and ‘If your child goes out one night, does he/she tell you the following day what he/she has done during that time?’. Cronbach alphas for the two times that parents responded on this measure were .76 and .81, respectively.

**Alcohol use**

The alcohol use disorders identification test (AUDIT) was used as a measure of adolescent alcohol use (Babor, Biddle-Higgins, Saunders, & Monteiro, 2001). This measure consists of 10 items and it is administered both for clinical screening and research. Cook, Chunk, Kelly, and Clark (2005) have compared the AUDIT with two other measures in assessing adolescent and young adult population and they have concluded that the AUDIT is the most appropriate tool for measuring alcohol use in adolescence and young adulthood since it shows very good psychometric properties without gender bias. Other studies have also confirmed the instrument’s properties in adolescent population (e.g., Knight, Sherritt, Harris, Gates, & Chang, 2003).

The AUDIT has three dimensions: hazardous alcohol use, dependence symptoms, and harmful alcohol use. Three-items measure the dimension of hazardous alcohol use. The adolescents answered the following questions at Times 1 and 2. ‘How often do you have a drink containing alcohol?’, ‘How many drinks containing alcohol do you have on a typical day when you are drinking?’, and ‘How often do you have six or more drinks on
one occasion?’. All questions were answered on a five-point scale (1 = never, 5 = everyday/almost everyday) and Cronbach alphas for this subscale were .73 at Time 1 and .78 at Time 2. Another three-items measure dependence symptoms. The adolescents answered the following questions at both times: ‘How often during the last year have you found that you were not able to stop drinking once you had started?’ ‘How often during the last year did you fail to do what was normally expected from you because of drinking?’, and ‘How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?’. The Cronbach alphas for this dimension were .72 and .70 for the two times the adolescents responded on the questionnaire. The third dimension of this measure is harmful alcohol use. It consists of the following four items: ‘How often during the last year have you had a feeling of guilt or remorse after drinking?’, ‘How often during the last year have you been unable to remember what happened the night before because of your drinking?’, ‘Have you or anyone else been injured because of your drinking?’, and ‘Has anyone close to you been concerned about your drinking or suggested you cut down?’. The Cronbach alphas for the harmful alcohol use were .74 and .75 for the two times of this study.

**Procedure**

Both adolescents and their mothers were given a sealed envelope that contained the respective items for children and parents. The adolescents completed the AUDIT during 15 min of one teaching hour and returned it immediately to the researcher. Once the adolescents returned their questionnaire, a unique code number was placed on each one and a sealed envelope with the parent’s questionnaire was matched and sent to the mother of each child. The same procedure was repeated 3 months later using the same matching system. Thus, data were collected in two phases, which were termed Time 1 (T1) and Time 2 (T2).

**Results**

Exploratory factor analysis with direct oblimin rotation was computed in order to examine the factor structure of the parental knowledge questionnaire. This analysis yielded a solution with variance explained of 52% at Time 1 and 56% at Time 2. On both occasions, the items loaded as predicted on to three distinct factors representing parental control, solicitation, and child disclosure (all factor loadings > .55). Similarly, factor analysis on the AUDIT yielded a solution with a variance explained of 46% at Time 1 and 44% at Time 2. On both times, the items loaded as predicted on to three factors representing hazardous alcohol use, dependence symptoms, and harmful drinking (all factor loadings > .49).

Since the parental knowledge and the AUDIT factors showed strong internal consistencies, we computed a composite variable for each construct, which represents the mean score for each case on the items that compose each factor. Table 1 shows the means and standard deviations for each latent construct.

Before examining the predictive significance of the monitoring (parental control and child solicitation), child disclosure, and alcohol use subscales we computed bivariate correlations between all scores at Times 1 and 2 in order to identify associations among parents’ sources of knowledge and adolescent alcohol use. Table 2 shows details of these correlations.
The next step in the data analysis was to compute a hierarchical regression analysis in order to examine (a) whether parent knowledge at Time 1 predicts a decrease in adolescent alcohol use at Time 2, controlling for the variance explained by alcohol use at Time 1 and (b) whether adolescent alcohol use at Time 1 predicts a decrease in parental knowledge at Time 2, controlling for the variance explained by parental knowledge at Time 1. As Table 3 shows, only child disclosure at Time 1 negatively predicted alcohol use at Time 2. Specifically, child disclosure predicts hazardous alcohol use and dependence symptoms. Child disclosure however does not significantly predict harmful alcohol use. The other two parental knowledge factors, namely parental control and parental solicitation do not significantly predict any of the alcohol use variables at Time 2.

A similar picture is revealed when we examine whether the adolescent alcohol use at Time 1 negatively predicted parental knowledge at Time 2. As Table 4 shows, the only variable that predicts parental knowledge is dependence symptoms. That is, dependence symptoms negatively predicted parental control. It also negatively predicted parental solicitation and child disclosure.

### Between Group comparisons: Drinkers versus non-drinkers

Given the low mean alcohol use scores in this sample, we sought to provide further evidence for the associations described above by classifying the participants into two groups: drinkers and non-drinkers. To classify individuals in the drinker group we chose a cut-off score corresponding to 1 SD above the mean for the overall AUDIT score. All individuals scoring below the cut-off score were classified in the non-drinkers group (80.9% at Time 1 and 90.4% at Time 2), and individuals scoring over 1 SD above the mean on the AUDIT were classified in the drinker group (19.1% at Time 1 and 9.6% at Time 2). Independent samples t test reveals that non-drinkers at Time 1 disclose significantly higher at Time 2 ($t(213) = 5.73$, $p < .01$, non-drinkers mean = 4.35, $SD = 0.75$, drinkers mean = 3.65, $SD = 0.70$). There are no significant differences on either solicitation ($t(213) = 0.56$, $p = ns$, non-drinkers mean = 3.65, $SD = 0.68$, drinkers mean = 3.58, $SD = 0.75$) or control ($t(213) = 1.61$, $p = ns$, non-drinkers mean = 4.48, $SD = 0.67$, drinkers mean = 4.64, $SD = 0.55$). In addition, non-drinkers at Time 2 were disclosing significantly more information at Time 1 ($t(207) = 3.04$, $p < .01$, non-drinkers mean = 4.15, $SD = 0.70$, drinkers mean = 3.59, $SD = 0.83$). The two groups at Time 2 were not significantly different on their levels of solicitation.

### Table 1. Means and standard deviations for the composite scores on the factors of parental knowledge and the AUDIT

<table>
<thead>
<tr>
<th>Construct</th>
<th>Time 1 Mean</th>
<th>Time 1 SD</th>
<th>Time 2 Mean</th>
<th>Time 2 SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parents' sources of knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental control</td>
<td>4.56</td>
<td>0.59</td>
<td>4.53</td>
<td>0.68</td>
</tr>
<tr>
<td>Parental solicitation</td>
<td>3.62</td>
<td>0.71</td>
<td>3.58</td>
<td>0.78</td>
</tr>
<tr>
<td>Child disclosure</td>
<td>4.00</td>
<td>0.73</td>
<td>3.87</td>
<td>0.78</td>
</tr>
<tr>
<td><strong>Adolescents' alcohol use (AUDIT)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous alcohol use</td>
<td>1.58</td>
<td>0.62</td>
<td>1.68</td>
<td>0.63</td>
</tr>
<tr>
<td>Dependence symptoms</td>
<td>1.04</td>
<td>0.16</td>
<td>1.05</td>
<td>0.16</td>
</tr>
<tr>
<td>Harmful drinking</td>
<td>1.08</td>
<td>0.28</td>
<td>1.09</td>
<td>0.23</td>
</tr>
</tbody>
</table>
Table 2. Correlation coefficients between parental knowledge and adolescents’ alcohol use at Times 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Parental control</td>
<td>–</td>
<td>.33**</td>
<td>.24**</td>
<td>– .13</td>
<td>– .09</td>
<td>– .16*</td>
<td>.26**</td>
<td>.30**</td>
<td>.31**</td>
<td>– .16*</td>
<td>– .15*</td>
<td>– .15*</td>
</tr>
<tr>
<td>3. Child disclosure</td>
<td>–</td>
<td>– .20**</td>
<td>– .16*</td>
<td>– .21**</td>
<td>.19**</td>
<td>.49**</td>
<td>.42**</td>
<td>– .18**</td>
<td>– .19**</td>
<td>– .25**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Harmful alcohol use</td>
<td>–</td>
<td>.37**</td>
<td>.15*</td>
<td>– .19**</td>
<td>– .05</td>
<td>– .05</td>
<td>.37**</td>
<td>.38**</td>
<td>.17*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Dependence symptoms</td>
<td>–</td>
<td>.28**</td>
<td>– .22**</td>
<td>– .14*</td>
<td>– .11</td>
<td>.47**</td>
<td>.24**</td>
<td>.37**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Hazardous alcohol use</td>
<td>–</td>
<td>– .17*</td>
<td>– .11</td>
<td>– .27**</td>
<td>.50**</td>
<td>.35**</td>
<td>.76**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Parental solicitation</td>
<td>–</td>
<td>.38**</td>
<td>– .14</td>
<td>– .15*</td>
<td>– .09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Child disclosure</td>
<td>–</td>
<td>– .20**</td>
<td>– .21**</td>
<td>– .23**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Harmful alcohol use</td>
<td>–</td>
<td>– .34**</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Dependence symptoms</td>
<td>–</td>
<td></td>
<td>.31**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Hazardous alcohol use</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05; **p < .01.
Table 3. Hierarchical regression analysis predicting adolescent alcohol use at Time 2 from Time 1 measures

<table>
<thead>
<tr>
<th>Dependent measures</th>
<th>Hazardous alcohol use</th>
<th></th>
<th></th>
<th></th>
<th>Dependence symptoms</th>
<th></th>
<th></th>
<th></th>
<th>Harmful alcohol use</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous alcohol use</td>
<td>0.76**</td>
<td>0.04</td>
<td>0.25**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependence symptoms</td>
<td>0.04</td>
<td>0.30**</td>
<td>0.18**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmful alcohol use</td>
<td>0.05</td>
<td>0.59</td>
<td>0.26**</td>
<td>0.20</td>
<td>0.34**</td>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 2

<table>
<thead>
<tr>
<th>Parental control</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th></th>
<th></th>
<th>Parental solicitation</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th></th>
<th></th>
<th>Child disclosure</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.09</td>
<td>-0.12</td>
<td></td>
<td></td>
<td>-0.06</td>
<td>0.06</td>
<td>-0.01</td>
<td></td>
<td></td>
<td>-0.25**</td>
<td>-0.19**</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Note. Alcohol use at Time 1 is controlled for in step 2. **$p < .01$. 

Table 4. Hierarchical regression analysis predicting parental knowledge at Time 2 from Time 1 measures

<table>
<thead>
<tr>
<th>Dependent measures</th>
<th>Parental control</th>
<th></th>
<th></th>
<th></th>
<th>Parental solicitation</th>
<th></th>
<th></th>
<th></th>
<th>Child disclosure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental control</td>
<td>0.26**</td>
<td>0.08</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental solicitation</td>
<td>0.09</td>
<td>0.49**</td>
<td>0.23**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child disclosure</td>
<td>0.12</td>
<td>0.07</td>
<td>0.24</td>
<td>0.34**</td>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 2

<table>
<thead>
<tr>
<th>Hazardous alcohol use</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th></th>
<th></th>
<th>Harmful alcohol use</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th></th>
<th></th>
<th>Dependence symptoms</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.09</td>
<td>-0.05</td>
<td></td>
<td></td>
<td>-0.14</td>
<td>0.01</td>
<td>0.04</td>
<td></td>
<td></td>
<td>-0.21**</td>
<td>0.14*</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. Parental knowledge at Time 1 is controlled for in step 2. *$p < .05$; **$p < .01$. 

(chunk of text) 

Discussion

Our findings show that one aspect of parental knowledge at Time 1, which is child disclosure, predicts less drinking behaviour at Time 2. This finding is in line with studies that argue that parent–child relationships are more effective when children are willing to share information with their parents (Crouter, Bumpus, Davis, & McHale, 2005). Children tend to disclose when they feel comfortable to reveal information about their whereabouts and their social interactions without a sense of guilt about things that they may have done wrong. Such behaviour on behalf of the children may act as the causal agent for the reduction of problem behaviour including drinking.
Our findings are not consistent with studies claiming that parental monitoring protects adolescents from consuming alcohol (Barnes & Farrell, 1992; Reifman et al., 1998; van der Vorst et al., 2006). The major arguments in the monitoring literature state that the failure of parenting practices (i.e., control, surveillance, and supervision) is the main cause of adolescent problems such as delinquency, substance, and alcohol abuse. Thus, it is often assumed that an increase in parental monitoring causes a decrease of problem behaviour because adolescents adjust their behaviour as a response to parental actions. The researchers who hold these views claim that adolescents with monitoring parents have fewer opportunities to engage in delinquent behaviour. This may be due to the fact that parental monitoring is an indicator of high-quality parent–child relationship, and also because of high levels of positive parent–child interaction and involvement (e.g., Crouter, Helms-Erikson, Updegraff, & McHale, 1999; Dishion & McMahon, 1998; Laird et al., 2003; Patterson & Dishion, 1985). Again, the results of the present study do not support these claims. As we have shown, the source of knowledge that accounts for less alcohol use in adolescents is not the parents’ active efforts to gain knowledge through monitoring but it is the child’s willingness to disclose information.

In fact, our findings are consistent with studies arguing that parental knowledge varies in response to adolescents’ problem behaviour. Specifically, Kandel and Wu (1995) found that higher levels of behavioural problems among 3 to 9-year-olds predicted lower levels of parental knowledge 6 years later, and lower levels of knowledge did not predict higher levels of delinquent problems. In our study, the children classified in the drinkers group at Time 1 appear to disclose less than their non-drinking peers, leading of course, to less parental knowledge about the problem behaviour.

Parents’ active efforts to control their youths or to gain information through solicitation do not appear to have an effect in reducing their children’s drinking behaviour. Children reduce their maladaptive behaviours when they are willing to share their thoughts with their parents in a free and uncontrolling manner (Stattin & Kerr, 2000). Laird et al. (2003), consistent with the findings of our present study, claim that children’s adjustment leads to an increase in disclosure, perhaps because such an information-sharing process takes place in an already trusting and accepting environment. In line with Stattin and Kerr (2000), we conclude that the most significant source of knowledge is the child herself. The implication of these findings is, therefore, that parents should not use active control as the protective mechanism against problem behaviour during adolescence. In parenting style terms, an authoritarian parenting style would not be an effective way of gaining knowledge, nor would such a pattern allow trust between parents and adolescents to be evolved. Parents should instead, foster an authoritative style that will enrich their relationship with their child with critical elements such as the children’s willingness to talk to their parents and share with them information that are related to their socialization behaviours. If children feel that they can share information with their parents this process is more likely to lead to a significant decrease in problem behaviour. If parents should therefore emphasize something, that would be in creating and maintaining a warm, trusting, and non-judgmental family environment that would encourage their children to talk to them when they find themselves involved in any form of problem behaviour.

Limitations of the present study and suggestions for future studies
This study has shown that both parental knowledge and adolescent alcohol use predict each other. The percentage of the variance explained in the two models, however,
appears to be low despite the fact that it is significant. One possible explanation for the overall weakness of the model – despite being statistically significant – is the short time between the two phases of the study. Since the period between Times 1 and 2 was only three months, it is possible that this was not sufficient for greater changes in either parental knowledge or adolescent alcohol use to be observed. Another explanation, however, may indicate that there are other important factors that explain changes in adolescent alcohol use and in parental knowledge that have not been taken into account in the present study. Peer influence, adolescents’ depressive symptoms, and self-image could be some of the related factors and they should be included in future studies. Furthermore, it is also important to understand the consequences of alcohol use in adolescence. Future studies could examine this important aspect, especially in relation to academic achievement, truancy, and psychosocial adjustment.

A second issue that needs to be addressed in future studies is the potential overlap between the constructs of solicitation and disclosure. Certain items in these two subscales (i.e., ‘how often do you talk with your child about things that happen during a usual day?’ and ‘how often does your child talk to you about a usual day at school?’) are not clearly conceptually distinct something that is reflected in the robust correlations between the two subscales.

Another issue is related to the administration of the AUDIT as a measure of adolescent alcohol use. Even though our analysis has shown satisfactory psychometric properties (e.g., factor structure and Cronbach alphas) the mean scores appear at floor levels. One possible explanation for this could be the cultural influences of the students participating in this study. According to the European School Survey Project on Alcohol and Drugs (2003) Cypriot adolescents consume significantly less alcohol than their European peers. Other studies have also shown that adolescent alcohol use varies according to their cultural background (Chen, Sheth, Krejci, & Wallace, 2003; Parker, Clahoun, & Weaver, 2000). In future studies, however, alcohol use could also be measured with non-clinical instruments that grasp drinking in adolescence within the context it takes place, such as parties, public parks etc.

**Contribution of the present study**
The present study, in line with earlier ones (Kerr & Stattin, 2000; Laird et al., 2003; Stattin & Kerr, 2000), has shown that parenting and adolescents’ problem behaviour are interrelated. In fact, these two factors influence each other. Parental monitoring and active efforts to control their youths or to gain directly information through solicitation do not appear to have an effect in reducing their children’s alcohol use. In contrast, child disclosure is related to such reductions in problematic behaviour. Thus, parental efforts should be directed towards enhancing and facilitating the process of two-way communication with their adolescents in order to allow them to talk freely about their problems and provide the parents with relevant knowledge.

**References**


European School Survey on Alcohol and Drugs (2003). Sweden, html://www.espad.org


Received 20 June 2007; revised version received 29 June 2009