Preventing Underage Alcohol Drinking through Working with Parents

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Abstract

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An evaluation of an alcohol prevention program targeting parents in order to decrease drinking among 13-16-year-olds is reported. The evaluation is done through a quasi-experimental study with a matched control group and annual assessments directed to youths and their parents independently in a longitudinal intention to treat design. The implementation of the program is centered round three different schools located in inner city, public housing and small town areas. The participants of the study are 900 pupils entering junior high school and their parents.

The intervention was information and mailings directed to parents advising them to maintain restrictive attitudes towards underage alcohol drinking and to encourage their youth's involvement in organized leisure activities. The implementation successfully influenced parents' attitudes against underage drinking, but failed to increase youth participation in organized activities. At post-test in grade 9, youths in the intervention group reported less drunkenness and delinquency. Effect sizes were 0.35 for drunkenness and 0.38 for delinquency. Two sub-samples, early starters in drunkenness and early delinquents, were analyzed in addition to the over-all analysis. Results from those analyses yielded effect sizes of .52 for drunkenness and .32 for delinquency. The findings were similar for boys and girls. The effects of the intervention were not moderated by community type. The main results were replicated using a latent growth curve analysis taking the clustered nature of the ÖPP data into account.

Conclusion: working via parents proved to be an effective way to reduce underage drinking as well as delinquency.

Keywords: Adolescents, adolescent drinking, alcohol, delinquency, evaluation, intention to treat, intervention, longitudinal, parental attitudes, prevention, ÖPP, Effekt.

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Nikolaus Koutakis

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Introduction

A brief history of recent changes in Swedish alcohol policy

Sweden has a longstanding tradition in alcohol policy. The instruments mostly employed have been price and availability, which have been quite successfully applied. Sweden has one of the lowest levels of per capita consumption and alcohol-related harm in western Europe (Norström & Ramstedt, 2006). Sweden joined the European Union in 1995, and – as a consequence – had to change its former policy of limiting the availability and affordability of alcohol. The effects on youth alcohol drinking were clear. From 1995 to 1998, alcohol drinking among 9th graders increased by 30% among boys, and 21% among girls (Hvitfeldt, Andersson & Hibell, 2003). In conjunction with these changes, there was an immense increase in alcohol consumption per capita in the adult population (Norström & Ramstedt, 2006). From the beginning of the new millennium there has been a decrease in alcohol drinking among both boys and girls. Today (2011), the proportion of alcohol consumers among 9th graders is the lowest in 41 years of measuring national representative samples of alcohol users among youth in Sweden; 57% of boys and 62% of girls consumed alcohol at some time over the previous year (The Swedish Council for Information on Alcohol and Other Drugs, CAN, 2011).

Alcohol drinking among youths, antisocial behavior, and other undesirable outcomes

There are many reasons for keeping youths away from the consumption of alcohol. If you ask parents, you will be given various reasons for delaying the drinking debut of their youth. Some parents will emphasize the risk of their youth having an accident of some sort. Others will emphasize the risk of the youth doing something foolish under the influence of alcohol, which he or she would not have done while sober. Third, there is the risk of becoming addicted and dependent. Still, although adults readily can provide reasons for their youths not to drink, and even though it is illegal for youths to purchase alcoholic beverages, many early adolescents and a majority of late adolescents have experiences of drinking (Moffit, 1993a)

There are many ways for youths to obtain access to alcohol. The earliest experiences of alcohol are often at home, with or without parental permission (Wagenaar et al., 1993). A Swedish nationwide survey suggests that the most common way in which 15 year-olds get hold of alcohol is from peers or from parents, with or without permission (The Swedish Council for Information on Alcohol and Other Drugs, CAN, 2011). As they grow older, youths are more likely to get alcohol from older friends and siblings (The Swedish Council for Information on Alcohol and Other Drugs, CAN, 2011; Jones-Webb et al., 1997; Wagenaar 1993; Wagenaar & Toomey, 1996). Alcohol drinking, smoking, and sexual activity are examples of behaviors that, in terms of conventional norms and legislation, are regarded as legitimate when performed by adults. But the same behaviors are norm-breaking if practiced during childhood or the teenage years. The fact that drinking is considered as an adult behavior might be a reason why youths are curious; they are tempted to try out adult and still-forbidden behaviors (Collins, Koutsky, Morsheimer & MacLean, 2001; D´Emidio-Caston & Brown, 1998).

Most pre-adolescents have negative attitudes towards alcohol drinking (Casswell, Gilmore, Silva & Brasch, 1988; 1983; Spiegler, 1983). Still, a few years later many of them will engage in it. This might be part of growing up or imitating grown-up behavior (Moffit, 1993b). Another explanation why some youths start drinking early might be that engagement in "problem behaviors" (Jessor, 1991), of which alcohol drinking is considered as one, serves the rebellious function of rejecting conventional norms, or of marking autonomy and independence from parents (Jessor, 1991; Jessor & Jessor 1977). Alcohol and substance use can also be a way to find pleasure (Coffman, Patrick, Palen, Rhoades & Ventura, 2007), to gain acceptance by peers and status in the peer group (Silberreisen & Noack, 1986), or to gain access to desirable peer environments, including the chance to meet potential romantic partners (Cooper & Orcutt, 1997). Or, quite simply, it might be a way to escape from or cope with difficulties, or gratify curiosity (Amos, Gray, Currie & Elton, 1997; Wilks, 1992; Franzkowiak, 1987; Igra & Irwin, 1997). In addition, underage drinking may be a behavior that serves as a bonding behavior within a peer group (Room, 1994). Regardless of the reasons, underage drinking appears to have become part of normal initiation in the junior high school years (Botvin, Baker, Dusenbury, Tortu & Botvin, 1990; Schulenberg, O'Malley, Bachman, Wadsworth & Johnston, 1996).

That drinking at early ages is common does not make it unproblematic (Ellickson, Tucker & Klein, 2003). For some youths, early experimentation with alcohol ends up in maladaptive patterns with undesirable consequences (Tucker, Orlando & Ellickson, 2003; Hops, Duncan, Duncan & Stoolmiller, 1996; Kuperman, 2005). Substantial empirical evidence suggests that early alcohol drinkers are more likely than non-drinkers or later starters to get in trouble with the law (Loeber & Farrington, 2001; Bushman & Cooper, 1990), be involved in traffic accidents (Yi, Williams & Dufour, 2001; Zwerling & Jones, 1999), or engage in risky sexual behavior (Leigh, 1990; Hingson, Heeren & Weshsler, 2003). On the other hand, most youths who try alcohol do not become problem drinkers and do not experience dramatically negative consequences. Also, while alcohol drinking and drug use might be commonplace in later adolescence, drug use and excessive drinking typically decrease around the age of 25 (DeWit, Offord & Wong, 1997; Kandel & Logan, 1984; Chen & Kandel, 1995).

There is a large literature supporting the idea that early alcohol experiences are associated with negative consequences in a broad sense (e.g. Hingson, Hereen & Winter, 2006). A recent study involving 34,000 individuals reveals that the amount and frequency of alcohol drinking in adolescence is related to drinking habits in adulthood (Norberg, Bierut & Grucza, 2009). A prospective study by Ellickson et al. (2003) showed that 13 year-old alcohol drinkers are substantially more likely than their non-drinking age mates to report using narcotics, engage in problem behaviors like stealing, and to have problems at school. On average, the 13 year-old drinkers were 19 times more likely to be smokers or hard drug users, and 4.5 times more likely to have been shoplifting than 13 year-old non-drinkers. Furthermore, the study showed that early drinking was not just associated with problematic adjustment momentarily. At age 23, those who were identified as drinkers at age 13 were two to three times more likely to use drugs, including having multiple drug problems, three times more likely to have been arrested for drunk driving, twice as likely to have engaged in violent or criminal behavior, and nearly one and a half times more likely to have had problems in work life. In short, early drinking seems to have serious consequences, both concurrently and in the future. Grant and Dawson (1997) examined the relationship between age at onset of alcohol use and prevalence of alcohol abuse and dependence in late adolescence and adulthood, using data from the national longitudinal alcohol epidemiological survey (Grant, Dawson & Chou, 1994). They found that the youths who started to use alcohol before the age of 15 were four times more likely to experience alcohol abuse and dependence later on than those who began drinking at the age of 21. The odds of developing lifetime alcohol dependence were reduced by 14% with each increasing year of first use, and the odds of lifetime alcohol abuse were reduced by 8% with each increasing year that drinking debut was delayed (Grant & Dawson, 1997).

Underage drinking is also related to delinquency. Early drinking and substance use are common among youths who have been in contact with the juvenile justice system (Prinz & Kerns, 2003). Many violent acts are conducted by youths who are under the influence of alcohol and drugs (Hingson Heeren & Zakocs, 2001). Furthermore, youths who were introduced to alcohol before the age of 6 were found to be 1.9-2.4 times more likely to report heavy, frequent, or problematic drinking at age 15 than youths who had not drunk alcohol before the age of 13 (Fergusson, Lynskey & Horwood, 1994). These results were obtained after controlling for the effects of parental alcohol use and attitudes. Early alcohol use has also been found to be related to increased incidences of risky sexual behaviors, greater numbers of sexual partners, and greater intentions to engage in risky sexual behaviors (Crowe & George, 1989; Epstein, Dusenbury, Botvin & Diaz, 1994). Consequently, there are many reasons to put efforts into trying to prevent or delay the debut of alcohol drinking among youths. This is not just because alcohol drinking, per se, has undesirable consequences, but also because alcohol drinking is associated, and often occurs together with other undesirable behaviors, both concurrently and in the future.

A longitudinal study conducted in Örebro, Sweden, reported associations between frequency of self-reported drunkenness at age 14 and later officially registered alcohol problems at ages 18-24 among the same subjects (Andersson & Magnusson, 1988). In total, 21% of the youths who had been drunk at least twice by the age of 14 were registered as having alcohol-related problems at follow-up at age 18. The corresponding figure for the majority of youths who had not been drunk at age 14 was 8%. This means that the chance to end up in registers later was 2.5 times higher for the 14 year-olds with more frequent drunkenness experiences than for those without such experiences.

Not all researchers agree with the conclusions drawn from the previous research. Some argue that early drinking behavior might be a marker of biologically inherited risk factors that increase the likelihood both of an early drinking debut and of later problematic use, e.g. dependence (McGue & Iacono, 2008; Liu et al., 2004). Grant and co-workers, however, suggested that genetic factors are not sufficient to explain the association between early alcohol initiation and later drug-related problems in adulthood. They conclude that unique environmental factors need to be taken into account (Grant et al., 2006).

Overall, we know from earlier research that early alcohol drinking is associated with problematic development and adjustment. But early drunkenness is neither a sufficient nor a necessary condition for ending up with alcohol problems in adulthood. Still, even if we cannot accurately forecast who will develop future drinking problems, Andersson and Magnusson's study (1998), like many other studies, suggests that early drinking is a risk factor for later drinking problems. Differently stated: not all youths who start to drink alcohol early become problematic drinkers, but many problematic drinkers have their first encounters with alcohol at an early age.

Involving parents in the prevention of their youths' drinking – do parents perceive this as salient?

A prerequisite for the successful implementation of a prevention program to combat youth drinking is that the targeted group perceives prevention as a genuine concern (Rohrbach, Grana, Sussman & Valente, 2006; Mihalic & Irwin, 2003). If the targeted group is not concerned, or do not perceive prevention as important, there are few reasons to expect them to bother. Therefore, as a prevention strategist, one ought to find out to what extent there is a perceived need for prevention from the receivers' perspective.

There is much that suggests that the involvement of parents in reducing adolescent drinking might be beneficial. An explicit or implicit precondition for involving parents in the prevention of juvenile problem behaviors, such as drunkenness, is that they perceive this as important, and that they do not want their youths to develop advanced drinking habits at early ages. Social welfare laws in Sweden and most other western countries assume that parents know their youths and want the best for them. There is, to my knowledge, no information in the literature about how important the prevention of youth drinking is considered by parents in Sweden or elsewhere. However, indirectly, we can get hints about this from a longitudinal study, "10 to 18", conducted at the Center for Developmental Research in the University of Örebro in Sweden (Kerr, Stattin & Pakalniskiene, 2009; Stattin, 2002). In the "10 to 18" study, all youths between 10 and 18 years in a middle-sized Swedish town, and their parents, constituted the target sample. In that study, among other things, information was collected from youths as well as their parents about whether the parents were concerned about their youths' drinking (for details about the questions asked, see the measures in the Methods section). The concrete question posed to the youths was "Are your parents worried that you will begin to abuse alcohol?", and to the parents "Are you worried that your child will begin to abuse alcohol." The question was posed to all youths at grades 7 through 9 in compulsory school, and to youths at all three grades in high school. It was also posed to the parents of youths at grades 7 through 9 in compulsory school, and to the parents of students at the first grade of high school. The response options ranged from No, not at all (1) to Yes, very much (5).

As reported in Figure 1, only a minority of the youths stated that they perceived their parents to be worried. It was more common for younger youths to report that their parents were worried (responding Yes, very much; Yes, quite much; or Yes, somewhat): 38.3-39.8% at ages 14 and 15 (grades 8 and 9), compared with 14.4 -17.3% at ages 17 and 18 (2nd and 3rd years of high school). This age trend was statistically significant ($F_{(5,\ 1461)}$ = 9.57, $p < .001$). Of all youths, the percentage who acknowledged that their parents had some worries was highest at age 15 (39.8%).

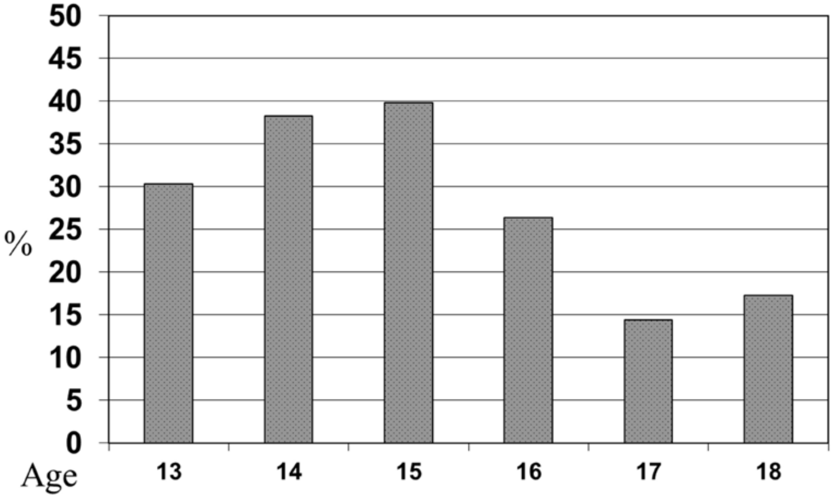

Figure 1. The percentage of youth in different age groups who reported that their parents were worried that they will begin to abuse alcohol.

How does this compare with how parents answered the same question? As shown in Figure 2, there was about the same proportion of parents of youths at younger ages as of youths at older ages who acknowledged that they were worried (who responded Yes, very much; Yes, quite much; or Yes, somewhat). The proportion of worried parents ranged from 22.8% of parents of 13 year-olds to 20.8% of parents of 16 year-olds. There was no statistically significant change over time, $F_{(3,\ 918)}$ = 0.24, n.s.

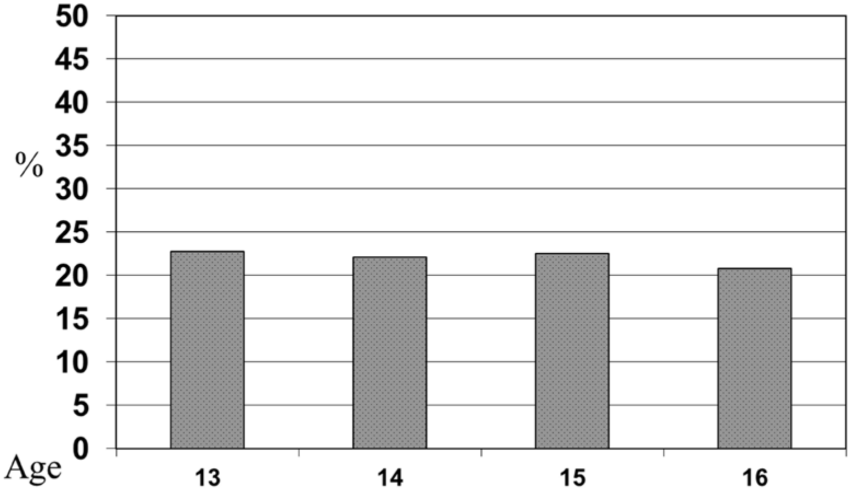

Figure 2. The percentage of parents of children in different age groups who reported that they are worried that their children will begin to abuse alcohol.

Note that the percentage of parents who said they were worried was actually *lower* than the percentage of youths who reported parental worries. A dependent t-test on the youths aged 13-15 revealed that worries were expressed more commonly in youths' reports than in parents' reports ($t = 3.50$, $df = 554$, $p<.001$). Thus, apparently, youths perceive their parents to be worried about their drinking more than their parents actually are. This is counterintuitive.

We expected to find differences in the prevalence of parental reports of worries over grades, expecting more worries the older the youths became. The reason for this expectation was that when parents have more and more experiences of underage drunkenness among their youths, they should become more concerned. Many parents who have seen their youths drunk probably do not like what they see. Some of them have also witnessed negative consequences of their youths' drinking, things that their youths did which they would not have done if sober. As reported in Figure 3, it was certainly true that parents of older youths had more experiences of their youths being drunk than parents of younger youth ($F_{(3, 925)} = 41.66$, $p<.001$). Still, as was shown in Figure 2, parents' worries did not change over the ages covered by this study. The question to the parents on awareness of their youths' drunkenness was "Has it happened that you have found your child drunk?", answered on a 3-point Likert scale with the alternatives 1. No, it has not happened, 2. Yes, it has happened once, and 3. Yes, it has happened on several occasions. The percentage figures in Figure 3 refer to parents' reporting that it has happened once or on several occasions.

In conclusion, parents do not seem to be particularly concerned that their youth will abuse alcohol, and fewer parents are concerned than their youths believe their parents are. There is no association between parents' concern and the youths' age. However there is a clear and statistically significant age effect with regard to parents' reporting having seen their youths drunk. The older the youths, the more parents had experienced their youths drunk.

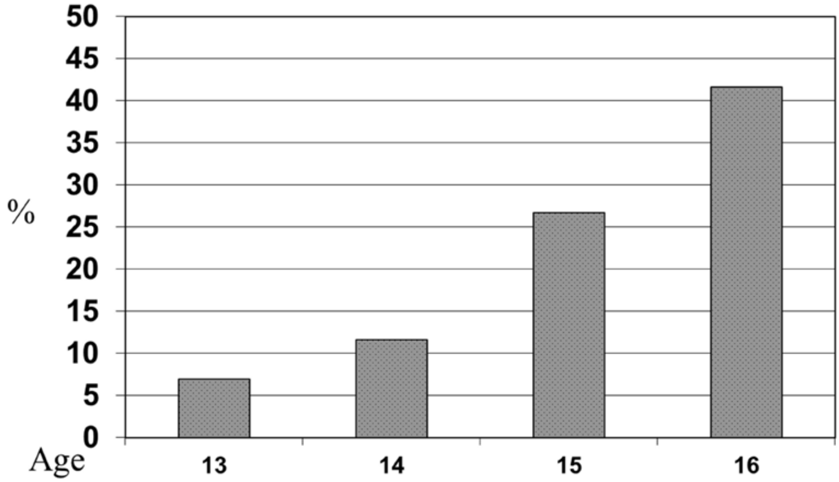

Figure 3. The percentage of parents in different age groups who reported that they had found their child drunk.

Despite not finding much difference in levels of parental reports of worries across ages of the youths, it should be noted that there were indeed robust, albeit moderate, correlations between parents' reports of worries and their awareness of the youths being drunk, such that parents who had found their youth drunk reported, at every age of the youth, more worries than parents who had not found their youth drunk (age 13: $r = .27$, $p < .001$; age 14: $r = .27$, $p < .001$; age 15: $r = .27$, $p < .001$, and age 16: $r = .31$, $p < .001$). These results are in line with north American research. Bogenschneider and colleagues (1998) reported that mothers who thought or knew that their youth had been drinking reported more worries than parents who were not aware, or did not suspect, that their youths had drunk alcohol.

These results point to a prerequisite for successful implementations of prevention programs. The basic assumption that parents are concerned about adolescent drinking, and for this reason are motivated to do something about it, does not seem to be altogether true; parents do not seem to be particularly worried about underage drinking. Admittedly, our measure of parental worries might not fully cover all parental concerns, but our finding that few parents are worried that their youths will start abusing alcohol is an indication that youth drinking might not be a particularly important issue for many parents. One conclusion to draw with regard to prevention is that, if parents are not made aware of the risks their youths are exposed to when drinking at an early age, they might not be receptive to preventive efforts. It should be added that the literature also suggests that parents feel that they have little influence on their youths' drinking habits. For example, a large-scale US study reported that 40% of parents thought they had little influence over their youths' decisions to use drugs or not (National Center on Addiction and Substance Abuse at Columbia University, 1996).

There is another way of looking at parental concerns. It might be that parents are not particularly concerned about their youths' alcohol drinking, but might be more concerned about the use of what they might perceive as more harmful narcotic drugs. In the "10 to 18" study, a question similar to the one posed concerning parental worries about alcohol drinking was posed about worries concerning narcotics, "Are you worried that your youth will start using narcotics?", with a response scale identical to the question on drinking. I did not find much difference between levels of parental worries about drinking and their worries about narcotics. For example, among the parents of youths at ages 13 through 16, 21.9% reported at least some worries about alcohol drinking (either Yes, very much; Yes, quite much; or Yes, some) in comparison with 19.3% (using the same classification) reporting at least some worries about narcotics. Hence, it does not seem to be the case that parents are more troubled by their youths' using narcotics than alcohol.

In conclusion, parents do not perceive underage drinking as important to the extent that their own youths think they do. Underage drunkenness or substance use does not appear to be a central concern of youths' parents, since about only one in five parents seems to have worries about it. Parental worries were higher, but not much higher, among the parents who had had first-hand experiences of catching their youth drunk, compared with the parents with no such experiences. The correlation between parental worries and their experiences of finding their youth drunk was $r = .23$ for parents of youths in the 13-16 year age span. Hence, there is a weak, but statistically robust, correlation between parental awareness of their youth's drinking and them being concerned. This information is important for preventive purposes since a common assumption within social work is that all parents want the best for their children. Practitioners of prevention often interpret this to mean that parents are concerned, and therefore motivated to do everything they can to prevent underage drinking and drug use.

Hence, they are sometimes surprised that parents do not seem to be motivated to prevent those youth behaviors (Henrichs, Bertram, Kunchel & Hahlweg, 2005; Spoth & Redmond, 2000). Since we show that parents in general do not seem to worry, we cannot expect parents intrinsically to be motivated. A prerequisite for a successful implementation is initially to motivate parents, not taking it for granted that they already are motivated.

Are parents important in influencing their youths' behaviors?

The home environment and the family make up the most important context for a child's behaviors. This is where behaviors are learned, manifested, and encouraged (Dishion & Patterson, 2006). As children grow older, they spend less time with their parents and more time with their peers away from home (Larson & Verma, 1999; Larson, Richards, Moneta, Holmbeck & Duckett 1996). This raises questions about parents' impact on their youths' behaviors relative to, for example, peers' influence. There is a debate over the extent to which parenting practices make a difference, and also over the relative importance of genes and influences from outside the family in shaping an individual (e.g. Harris, 1998). Theoretically, it can be argued that parents influence their youths' behaviors and decision-making in two main ways; the most obvious is through direct control and supervision in actions designed to steer the youth's behaviors, e.g. by monitoring and restricting the amount of time spent outside the home, by determining where youths spend time, and by influencing youths' peer relations. The second way is through socialization, e.g. by passing on the basic values held by parents, which the youths eventually internalize.

Two prominent theories that emphasize parents' roles when it comes to development of problem behaviors are Moffitt's theory and social control theory.

Moffitt (1993b) formulated a theoretical model where the emphasis is on the onset of problematic behavior. She argues that there are two types of youth offenders. The first and most common is what she calls the *adolescence-limited* offender. The individuals bearing this label are normal youths who act out as a consequence of frustration at being excluded from the exciting privileges of adulthood. The other is the offender who starts early with a problematic behavior that is driven primarily by neuropsychological factors. According to her theory, perhaps even a majority of adolescents engage in some form of delinquency. This is especially the case for adolescence-limited offenders. The delinquent behavior serves the function of lessening the frustrations of what Moffitt calls the "maturity gap". The maturity gap is the period around puberty when youths feel biologically mature but are not allowed access to what they perceive as adult privileges, e.g. to drink alcohol, engage in sex, to drive, and to be independent. The adolescent will observe and model the behaviors of antisocial peers in their peer group (often life-course persistent boys). According to Moffitt, most adolescents who engage in delinquent behavior do this to demonstrate maturity and autonomy. For them “every curfew violated, car stolen, drug taken, and baby conceived is a statement that one has left childhood behind” (Moffitt, 1997, p. 31). However, as youths grow older, most gradually enter adult roles and thereby cease to feel the maturity gap. Because most youths come from relatively functional families and are not suffering from neurological abnormalities, they are able to quit offending as they emerge into adulthood. Some youths, however, although they come from relatively functional families and are not suffering from neurological abnormalities, do not find a way out of the delinquent life style. This is a phenomenon described by Moffitt as vulnerability to “snares”. They are trapped by the negative consequences of their delinquent acts, in particular damaged relationships with parents and peers.

Another way to understand the development of problem behaviors is formulated in social control theory (Hirschi, 1969). Its main focus is on understanding why people conform to conventional norms, rather than on trying to understand why people engage in criminality (despite the title of the work where Hirschi launched the theory: *Causes of Delinquency*). Hirschi assumes that all people have the potential to become delinquent and that it is social control, rather than moral values, that uphold law-obeying behaviors. This assumption goes counter to classical theories of moral development. For example, Kohlberg states that the stage of moral development that youths are in (Stage III) is not driven by social control and fear of punishment, but rather by an urge to fulfill social norms and expectations (Kohlberg, 1981; Gibbs, Arnold, Ahlborn & Cheesman, 1984). Consequently, according to social control theory, one is free to violate norms if the social control agents are absent. A central concept in the theory is social bonding, which can be understood as socialization that leads to conformity. Bonding consists of four elements: *attachment* or affective relations, *commitment*, *involvement,* and *belief* in the values of the socializing institution. Hirschi claims that the stronger the bonds youths have to the various institutions of their society (family, school, etc.), the less likely they are to become delinquent. Established social bonds exert control and inhibit deviancy. Individuals with weak social bonds are more likely to deviate, mainly because they have less to lose compared with those with stronger bonds.

Attachment has to do with the person’s interest in and sensitivity to others, i.e., how strongly one is tied to others. Hirschi found that youths avoid doing delinquent acts because of the negative consequences they might have on their relationships with their parents. The quality and nature of the parent-youth relationship is therefore important to consider. Furthermore, Hirschi (1969) found that poor school achievement is linked to delinquency through a series of events: poor school achievement leads to a dislike of school, which leads to rejection of authority and teachers, and may subsequently accentuate delinquency. *Commitment*, according to Hirschi, has to do with the time, energy and efforts placed on social activities in the community. The idea is that individuals who invest much time and effort into such activities are less likely to jeopardize their social position by engaging in criminality; the more one invests, the more one has to lose if caught out. The third component in Hirschi's model is *involvement*. This has to do simply with the amount of time spent on pro-social activities. If a person is preoccupied with activities that are in the interest of his or her society, he or she has little time to engage in criminality. The fourth and the last component in the model is *belief*. This refers to the acceptance of conventional morality and respect of authority.

Hawkins and Weis (1985) integrated social control theory and social learning theory (Akers, Krohn, Lanza-Kaduce & Radosevich, 1979) into a broader social development model. They argued that attachment, commitment, involvement and belief do not satisfactorily explain *how* social bonds are developed within the family and the school. A wider explanation is provided, taking social learning theory into account. Social learning theory assumes that behaviors are learned and maintained when they lead to something rewarding; behaviors that are associated with unfavorable consequences are less likely to be repeated. The broader social development model hypothesizes that youths learn patterns of behavior from their environment. Youth are socialized through four processes: (i) perceived opportunities for involvement in activities and interactions with others; (ii) actual involvement; (iii) skills for involvement and interactions, and (iv) perceived rewards for involvement and interaction. The theory assumes that a young person's behaviors will be pro-social or antisocial depending on the predominant behaviors, norms and values held by those individuals to whom the person is bonded (Catalano, Haggerty, Oesterle, Fleming & Hawkins, 2004).

Social-control-based theories of adjustment or deviancy stress the importance of parental bonding as a protective factor for problem behaviors. Bonds are seen as a reflection of the youth's internalization of conventional and societal values and attitudes, and also his or her attachment to significant others. There is much empirical support for the idea that good relationships with parents and others are related to low levels of underage drinking and problem behaviors (Bell, Forthun

& Sun, 2000; Borawski, Ievers-Landis, Lovegreen & Trapl, 2003; Wood, Read, Mitchell & Brand, 2004).

So, according to both Moffitt's theory and the social-control-based theories, there is room for parental influence. For the vast majority of adolescence-limited offenders, their parents do not give up on them, but try to uphold good relations during the turbulent years. In this way, the likelihood of their youths to become snared is lessened. According to the social-control-based theories, youths uphold pro-social behaviors because they do not want to jeopardize their good relations with their parents and others. The social development model also takes the social consequences of behavior into account. It rests on the assumption that there is a good relation with parents that youths are eager to cherish; if there are no good relations, the probability of youth engaging in problem behaviors increases. In conclusion, parents can exert influence on their youths, for both good and bad. The question is how parents can steer their influence in desirable ways, to keep their youths out of trouble.

Parenting characteristics that promote good youth development

Parents of delinquent youths are often blamed for the bad conduct of their children. The link between parenting and youth delinquency has been known for a long time, in both psychology and criminology (Loeber & Stouthamer-Loeber, 1986; Patterson, 1982). However, there is a debate over how strong the link between parenting and child conduct really is (e.g. Harris, 1998). From a scientific developmental point of view, there are, in particular, two dimensions of parent behaviors that are used to distinguish between different parenting styles, namely *support* and *control* (Maccoby & Martin, 1983). The support dimension (i.e., warmth) emphasizes parental behaviors that make the child feel appreciated. Specific parenting behaviors that can be referred to the support dimension are, for example, expressing love, being supportive, being responsive, expressing acceptance, but also – at the other end of the continuum – being hostile, neglectful and non-receptive (Hoeve, Dubas, Eichelsheim, van der Laan, Smeenk & Gerris, 2009). Supportive parenting behaviors, e.g. high levels of support and warmth, have been shown to be negatively associated with youth delinquency. Low levels of support or parental rejection are associated with high levels of delinquency (Juang & Silberreisen, 1999; Barnes & Farell, 1992).

The control dimension refers to parental behaviors that place demands on or, in other ways, restrict or control the child. Control is often divided into authoritative and authoritarian control behaviors (Baumrind, 1989, 1991). Authoritative control refers to child centered guiding, giving information and stimulating responsible and appropriate behaviors of the child. Authoritarian control, on the other hand, refers to adult centered, coercive, restrictive and rigid disciplining of the child (Hoeve et al., 2009). High authoritarian control combined with harsh punishment has been related to high levels of youth delinquency and antisocial behavior (Farrington, 2003; 1989).

Some researchers have suggested focusing on behavioral and psychological control rather than on authoritative and authoritarian (Barber, Maughan & Olsen, 2005). They define behavioral control in terms of parents' attempts to control and regulate youths' behavior by setting rules and monitoring the youths' whereabouts. Parental monitoring has been related to low levels of youth delinquency (Dishion & McMahon, 1998; Snyder & Patterson, 1987; see Crouter & Head, 2002, for a review). Psychological control deals with parental behaviors such as guilt induction and love withdrawal. High levels of behavioral control have been linked to externalizing youth behaviors, while high levels of psychological control have been related to internalizing youth problems (Barber, Olsen & Shagle, 1994).

In addition to the above-mentioned parenting dimensions, Maccoby and Martin (1983) focused on parenting styles where high and low levels of warmth and control are combined into types, giving four typical parenting styles. In their terminology, *authoritative* parenting combines high warmth and high control. *Authoritarian* parenting is characterized by low warmth and high control. *Permissive* parenting combines high warmth and low control. *Neglectful* parenting, finally, is characterized by low warmth and low control. Neglectful parenting has been associated with problematic youth behaviors (poor school adjustment, drinking and drug use, association with deviant peers, engaging in risky sexual activity, etc.), while authoritative parenting has been associated with good adjustment of youth (Lamborn, Mounts, Steinberg & Dornbusch, 1991), and resistance of peer pressure to use alcohol and drugs (Collins, Maccoby, Steinberg, Hetherington & Bornstein, 2000; Mounts & Steinberg, 1995). Gray and Steinberg (1999) reported that youths who had authoritative parents rated themselves as having better psychosocial adjustment than youths of parents with other parenting styles.

The issue of monitoring by parents has been a central topic in the parenting literature (Patterson, Reid & Dishion, 1992; Patterson & Stouthamer-Loeber, 1984). However, researchers have questioned the inferences drawn from this research (Kerr & Stattin, 2000; Stattin & Kerr, 2000; for a review, see Stattin, Kerr

& Tilton-Weaver, in press). One of the main critiques concerns the face validity of the concept of monitoring. A widely used monitoring measure was developed by Fletcher, Darling, and Steinberg (1995). It consists of questions that measure how much parents *know* about issues like: who the youth's' friends are, where the youth is in the evenings, how the youth spends his/her money, and what the youth does most afternoons after school. Closer looks at these items, which are supposed to tap parental monitoring, suggest that they do not measure what parents *do*. Rather, the items tap the extent of knowledge of their youth's whereabouts that parents have. This is counter-intuitive, since the verb monitor implies something one does, rather than something one possesses (i.e., knowledge).

Another remark on the monitoring literature concerns the conclusions drawn from the research (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Researchers have jumped to conclusions that lack empirical support. For example, based on empirical studies of parental knowledge, scholars have brought knowledge into the prevention area and developed preventive strategies where parents are active in getting knowledge about their youth's whereabouts (Dishion & McMahon, 1998). The recommendation to encourage parents to be active in getting insight into their youth's whereabouts rests on a problematic inference, namely that parents who know a lot about their youths have acquired this knowledge because they are active in keeping track of their youth's whereabouts, and thereby get an initiated insight into their youth's whereabouts. The assumption is that parents who know a lot have got their information from active tracking and surveillance of their youths' activities. The presumption that high parental knowledge emanates from parental control strategies is probably the reason why parental knowledge has been labeled monitoring, but there is little empirical research to substantiate that presumption.

There is, however, a large body of research supporting the notion that parental knowledge is related to good child adjustment in the broadest sense (Kerr & Stattin, 2000; Stattin & Kerr, 2000). However, as reported by Stattin and Kerr (Kerr & Stattin, 2000; Stattin & Kerr, 2000; Stattin, Kerr & Tilton-Weaver, in press), parents' knowledge of their youths' behaviors mostly comes from the youths themselves, in the forms of free and voluntary comments about how they like their school, what tests they have, what they do with their friends, and so on, without parents asking first. So, parents' knowledge seems to be more an issue of how much their youths voluntarily disclose about their activities outside the home than from the parents' control efforts.

Why do some youths tell a lot about themselves while others do not? There are many possible reasons. One is that youths who are involved in deviant activities are not disposed to tell their parents about them. This might partly explain the link between parental knowledge and juvenile delinquency that has been found in the literature. Another is that youths need to feel that parents do not misuse the information they give or use it against them (Persson, Stattin & Kerr, 2004). An emotional climate in the family that encourages youth to disclose good and bad deeds seems to be crucial. In such a climate, youths are likely to feel free to talk to the caregiver, and in that way the caregiver is given information about the youth. This seems important, since there is a large body of research supporting the notion that parents' knowledge about the youth's whereabouts when away from home is important. Another issue is the extent to which the youth perceives his or her parents to be legitimate authorities on different matters (Smetana, 1988). Youths of different ages perceive their parents as a legitimate authority on some matters, but not on others. A recent meta-analysis (Hoeve et al., 2009) found that parental behaviors, such as support, authoritative control, authoritarian control, behavioral control, and psychological control, are all significantly related to youth delinquency. Parental monitoring, as indicated by parental knowledge, child disclosure and the active monitoring behaviors of parents, was found to be strongly linked to child delinquency.

In conclusion, recent research supports a well-established view, namely that parents who know about their youth's whereabouts tend to have better adjusted youths than parents who know less. Research has shown that the best source of parental knowledge consists in youths' own disclosures rather than in parents' active attempts to get information. Hence, a family climate that encourages communication, and particularly youth disclosure, is perhaps more important than parents' attempts to obtain specific information about their youths. Most importantly, parents do have a role in promoting the good development of their children.

What influence do parents and peers have on underage drinking during adolescence?
Because adolescents spend increasingly more time together with peers and less time with parents, compared with when they were younger (Larson & Verma, 1999; Larson, Richards, Moneta, Holmbeck & Duckett 1996), it is reasonable to suppose that peers are important in influencing youths' attitudes and behaviors (Cooper, Shaver & Collins, 1998). Relationships with parents and peers have been assumed to be in tension in adolescence, a tension that has been labeled the "two worlds of childhood" (Bronfenbrenner, 1970).

Peers' behaviors have been found to be strong predictors of youths' own behaviors, particularly with regard to underage drug use (Gilford-Smith, Dodge, Dishion & McCord, 2005; Hawkins, Catalano & Miller, 1992; Newcomb & Bentler, 1989; Baer, Mac Lean & Marlatt 1999), and alcohol drinking (Bucholz, 1990, Kandel, 1980; Baer et al., 1999). This can to a certain extent be explained by the fact that youths who are drinking regularly tend to associate more with peers who drink than with age mates who do not drink (Colder & Chassin, 1992; Hover & Gaffney, 1991). Furthermore, alcohol-drinking peers seem to be particularly influential, and seem to exert a stronger influence than their parents do (Baer et al., 1999). Generally, peer characteristics have been found to be four times more influential than parental influence concerning alcohol and substance use (Kandel & Andrews 1987).

The fact that youths tend to engage with peers who are similar to themselves is a robust finding in the research literature (Laird & Pettit, 1999; Kobus, 2003; Cairns & Cairns, 1994). This phenomenon is referred to as *friendship homophily* (Kobus 2003; Gilford-Smith et al., 2005). Although the phenomenon of homophily has been demonstrated in several studies, it does not explain *how* peers influence each other. There is a lively debate in the research literature on the influence versus selection explanations of deviant behavior in adolescence (Bauman & Ennett, 1994; Kobus, 2003; Engels, Knibe, Dropp & de Haan, 1997; Dishion, Andrews & Crosby, 1995). However, peer association is not independent of the parent-child relationship. A warm parent-child relation not only discourages youths from drinking alcohol but also discourages youths from choosing alcohol-drinking peers as their close friends (Bogenschneider, Wu, Raffaelli & Tsay 1998; Kandel & Andrews, 1987). Parents' low involvement with the youth has been shown to increase the likelihood of the youth's affiliation with deviant peers, which, in turn, is related to higher delinquency and deviancy (Kim, Hetherington & Reis, 1999; Scaramella, Conger, Spoth & Simons, 2002). A study by Wood and co-workers (2004) reported on the roles of peer and parental influences on 18 year-old boys' and girls' drinking. They showed that parents influence their youth's susceptibility to peer-influenced drinking. Youths who perceived their parents to have restrictive attitudes towards underage drinking were shielded from peer influences and alcohol-related problems to a greater extent than youths who perceived their parents as permissive. Youths with permissive parents reported more drinking, and their drinking was strongly related to the levels of drinking they perceived their peers to have. Wood et al. (2004) concluded that "these findings suggest that parents continue to exert an influential role in late adolescent drinking behavior" (Wood et al. 2004, p. 19). In short, peer characteristics are not independent of parenting practices and parent-child relations. Both are related to adjustment. However, it is not entirely clear which is the more influential, and how peer and parent influences interact. Findings across studies are not consistent.

A parental feature that, it has been suggested, is particularly important is parents' attitudes and practices concerning underage drinking. There are studies suggesting that youths' perceptions of their parents' attitudes towards underage drinking are related to their parents' actual drinking. If youths perceive that their parents have a restrictive attitude to drinking, they drink less. This has been shown in several studies (e.g. Callas, Flynn & Worden, 2004; Jackson, Henriksen & Dickinson, 1999; Yu, 2003; Reifman, Barnes & Dintcheff, 1998; Fergusson et al., 1994; Kelly, Comello & Hunn, 2002; Ellickson & Hays, 1991; Wilks, Callan & Austin, 2006). Jackson and co-workers clearly show this in their longitudinal study (Jackson et al., 1999), in which 10 year-olds were asked, among other things, about their parents' attitudes towards underage drinking. The children's perceptions of parental attitudes were used to predict alcohol use at age 14. The results revealed that the likelihood of underage drinking was considerably higher among 14 year-olds who, at the age of 10, reported that their parents were lenient or non-explicit in their views on underage drinking, compared with youth having parents who stated clear rules (Jackson et al., 1999).

The studies mentioned here lean on youth reports and do not take parent reports into account (see Yu, 2003 for an exception).

Studies including parents as respondents confirm these findings. A study by Bogenschneider, Wu, Raffaelli and Tsay (1998) showed that maternal warmth, involvement and availability, together with maternal restrictiveness towards underage drinking, are associated with low levels of underage drinking. Among fathers, paternal knowledge about their youths' daily activities was directly related to lower levels of underage drinking. Considerably less drinking among the youths was found when fathers had a basic knowledge about their youths' whereabouts, coupled with a restrictive attitude towards underage drinking.

Some studies have also looked at the impact of specific rules concerning underage drinking. One showed that parents of 15-18 year-olds who did not allow their youths to drink at home had youths who drank less than did the youths of parents who allowed this (Yu, 2003). Another finding of this study was that when parents were asked about their attitude towards underage drinking (rather than the specific behavior of letting their youths drink or not at home), attitude, per se, was not directly related to the youth's drinking. However parents' restrictions on letting their youths drink at home and their attitudes towards underage drinking were found to be related to the youth's drinking (r = .44, p<.01). This study also revealed that youths tend to be aware of their parents' attitudes towards underage drunkenness. The association between parents' attitudes towards underage drunkenness and youths' reports on their parents attitudes was r = .36, p<.01 (Yu, 2003).

Longitudinal evidence from the Netherlands shows that parents' clear alcohol-specific rules decrease the likelihood of underage drinking. Clear rules are also related to late alcohol debut on the part of youths (Van der Vorst, Engels, Meeus & Dekovic, 2006; Van der Vorst, Engels, Dekovic, Meeus & Vermulst, 2007). There is also longitudinal evidence from Swedish studies showing that youths who are allowed to drink alcohol at home consume more alcohol throughout adolescence, and escalate in drinking as they get older, to a greater extent than youths who have parents with more restrictive attitudes (Ferrer-Wreder, Koutakis & Stattin, 2002).

In conclusion, although peer influences concerning underage drinking affect youths' drinking, it seems as if parents may impact on their youths' drinking. One interpretation of the literature is that parents' expressive attitudes to their youth's drinking habits can work in two ways. First, they can make youths more resistant to the peer influence to drink. Second, they can lessen the probability of their youths engaging with peers who drink frequently.

An anecdotal saying is that *"children don't do as we say, they do as we do"*. Research has shown that this is not altogether true, at least when it comes to underage alcohol drinking. But, parents' permissive attitudes towards underage drinking seem to be a stronger predictor of underage alcohol drinking than parents' own drinking (Bogenschneider, Wu, Raffaelli & Tsay, 1998; Ary, Tildesley, Hops & Andrews, 1993; Brook, Whiteman, Gordon & Cohen, 1986; Barnes & Welte, 1986; Hawkins et al., 1992; Kandel & Andrews, 1987). Hence, parental attitudes seem to matter, and parents do not have to abstain from alcohol in order to raise non-drinking youths.

Parents' legitimacy in regulating drug-related behavior

As a consequence of growing older and maturing, youths desire independence and autonomy. There are several domains that youths perceive as personal, and where they want to decide for themselves. Issues that affect their own appearance, leisure and social choices (personal issues) are such domains (Smetana & Asquith, 1994). This does not mean that parents' role as an authority is ruled out. Parents can and are expected to regulate their youths' behaviors in domains that affect the youths' safety and health (prudential issues). Studies have shown that parents and youths agree that parents have a legitimate authority to regulate issues like alcohol drinking, using marijuana or other drugs, smoking, and attending parties where alcohol is served (Smetana, Metzger, Gettman & Campione-Barr, 2006). This suggests that youths perceive their parents to be legitimate authorities when it comes to prudential issues.

Smetana's measures of parental legitimacy were recently incorporated into an ongoing longitudinal study in Sweden, "Seven schools" (PIs: Stattin, H & Kerr, M). All youths aged 13 to 15 – grades 7 to 9 in compulsory school – in seven schools in Örebro (N = 763) took part in the data collection in 2007. Results from this study clearly reveal that youths accept parental rules concerning potentially harmful or health-related behaviors (see Table 1.). However, they do not readily accept parental regulations concerning more private issues. Youths responded to statements with five possible response options, ranging from Certainly not true to Certainly true. Table 1 shows the endpoints of the continuums. As shown in the table, a majority, 55.8% of the youths, chose the extreme value (Certainly true) that is was OK for their parents to set limits on them concerning alcohol drinking. Almost as many, 45.6%, responded that it was certainly true that their parents could set limits on them concerning going to a party where they drank alcohol.

Another Swedish study confirms these results. Between 92% and 95% of 10 to 18 year-olds thought that it was good or pretty good that their parents formulated clear family rules concerning underage drinking. A majority, 68% of the youths in the ages 10-18, did not think it was OK that parents offered them beer or wine (Barnombudsmannens årsrapport, 2005). So, although youths need increasing autonomy, some aspects of youth behavior are considered as legitimate for parents to regulate. Issues that pertain to alcohol and drugs seem to be such issues.

Table 1. Percentage of youths who do or do not accept parents' setting limits concerning prudential and personal issues.

I think it´s OK if my parents set limits for me concerning:

	Certainly not true	Certainly true		Certainly not true	Certainly true
Prudential issues			Personal issues		
To drink alcohol	19.4	55.8	What web-pages I'm allowed to browse	26.2	30.9
To smoke or use dry tobacco	19.5	66	What movies or music I'm allowed to listen to	48.4	16.2
To go to a party where they drink alcohol	21	45.6	That they decide what peers I'm aloud to hang out with	35.4	16.8
To use hash or other drugs	19	77.6	What I do in my free time	34.1	16.6
How I treat my friends (about teasing or insulting)	21.1	41.1	How I use my money	36	15.7
To spread rumors or say something nasty	22.7	49.7	What girls or boys I like or fall in love with	56.3	12.3
To keep my promises to others	18	46	Average personal issues	23.4	18.1
About talking back to a teacher	20.2	47.5			
About my language (e.g. cursing)	23	34.9			
Average prudential issues	20.4	51.6			

Preventive strategies

Prevention literally means to keep something from happening. Prevention implies taking measures against something possible or probably negative for the individual (Encyclopedia Britannica, 2005). This "something" can be different things. In this dissertation, I refer to alcohol prevention as taking measures to avoid or reduce underage drinking (Maisto, Galizio & Connors, 1999). Preventive strategies are often classified with regard to who the intended target is. An extensively utilized classification of preventive efforts was proposed by the Commission on Chronic Illness (1957). The classification consisted of three types of prevention: *primary*, *secondary* and *tertiary* (Commission of Chronic Illness, 1957, cited in Institute of Medicine, Committee on Prevention of Mental Disorders, 1994). This classification was originally applied to disease prevention. Later, mental health and other public health programs borrowed the concepts. In the 1957 terminology, *primary* prevention refers to efforts aiming at preventing the onset of, for example, substance use, before it has a chance to occur. Consequently, the main objective is to decrease the *incidence* of use (number of new users). *Secondary* prevention strives to decrease the number of individuals using a specific drug. The main objective is to decrease *prevalence*. *Tertiary prevention,* finally, strives to decrease or ease the problems of those abusing the drug.

According to the Institute of Medicine Committee on Prevention of Mental Disorders (1994), the classification above assumes a good understanding of which mechanisms are responsible for the occurrence of, for example, addiction. Since 1957, when the original classification was proposed, knowledge has developed immensely, and researchers have increasingly recognized the complexity behind the associations between risk factors and their consequences for health-related behaviors, such as substance use or abuse. Thus, we do not have a full understanding of the mechanisms behind many of the outcomes we want to prevent. But, even though we do not fully understand *how* a risk factor influences the onset of certain health-related behaviors, we do not necessarily have to abandon our preventive efforts.

Gordon (1987) was convinced that pragmatic prevention and health promotion could be based on empirical relationships rather than having to have full insight into causal relations. This led him to propose a new classification system for prevention. The new classification was based on a risk-benefit approach, in the sense that the risk for an individual of suffering from a certain disease or illness should be in parity with the risk, discomfort and cost of the prevention delivered. Gordon's proposed operational definition comprises three categories: universal, selective, and indicated prevention. *Universal* preventions address entire populations, such as whole communities or schools, including subgroups such as women or youths. The underlying assumption when choosing a universal approach is that all individuals in a population share the same risk and that all individuals will benefit from the prevention program. *Selective* prevention programs target subgroups of the total population. Individuals belonging to such subgroups are regarded as being at risk simply by virtue of belonging to the identified subgroup. Examples of such subgroups are youths from a minority ethnic group, the children of drug abusers, and pregnant youths. The risk groups can be identified in a number of ways, including consideration of the biological, psychological, or environmental conditions that are known to be empirically related to, for example, substance use. Selective prevention programs approach entire subgroups regardless of the degree of risk any single individual within the group may face. No individual risk assessment is done. *Indicated* prevention strategies, finally, are appropriate for persons who, on inspection, are found to possess one or a few risk behaviors, or individuals at risk of future development of existing problems, e.g. substance abuse. Examples of indicated strategies are those focusing on youths who already have a risky alcohol or drug consumption.

The different categories of prevention, the historical and the current, specify the target population. They do not say anything about what kind of preventive content is delivered or what kinds of behaviors are to be prevented.

Successful universal prevention programs targeting alcohol and drug use among youths

Basic research has identified several risk and protective conditions related to underage drinking. Many of these risk and protective factors are related to the family and parents. Successful prevention programs are typically grounded in basic research, and they fit a theoretical development framework. Most of the successful programs share some characteristics. Parents voluntarily sign up for participation. Universal interventions are delivered as comprehensive programs. The delivery is regular, e.g. once a week for ten weeks, or even over a period of years, like Project Northland and the Midwestern Prevention Project. The programs are multimodal, in that they are not dependent on attendance in certain contexts, but are interwoven into several regular activities, e.g. in school or wider society. The programs involve family interactions, not just parent-youth interactions. Group meetings provide opportunities for discussions and interactions among the participants; hence the focus is not on providing participants with sheer knowledge. Some of the programs involve training to handle and resist actual or social pressures, including those stemming from the imaginary normative behaviors of certain age groups. Thorough evaluations suggest that there are many successful prevention programs, including parenting training, resistance skills training, social skills training, and multisystem intervention (Coughlan, Doyle & Carr, 2002). Specific programs that include these features, and different kinds of school, family and after-school-recreation programs in the arena of universal alcohol and drug prevention are presented below.

The Life Skills Training program

The Life Skills Training program, LST, (Botvin & Tortu, 1988) is a school-based tobacco, alcohol and drug use prevention program. LST is designed for students from elementary school up to junior high. LST focuses on coping and social skills, which are supposed to be protective against drug use, but also teaches students skills and strategies to handle tricky social situations, e.g. how to deal with peer pressure. The program relies on research showing that students who develop skills in critical domains are less likely to engage in high-risk behaviors such as tobacco, alcohol and drug use. LST has three skills components: drug resistance skills, personal self-management skills, and other general social skills. The *drug resistance skills* component is intended to teach students to recognize and question common misconceptions about tobacco, alcohol and other drug use. These skills are taught through coaching and role playing. Students obtain information about alcohol, tobacco, and other drug use, and also learn how practically to resist alcohol, tobacco, and other drug use in real situations. The *personal self-management skills* component deals with students' self-image and its effects on behavior, including how to set personal goals and be aware of personal progress. In the program, students are asked to analyze problems and consider the consequences of each of their solutions before making decisions; they are also taught stress and anxiety management, and how to look at personal challenges in a positive light. The *general social skills* component teaches students the skills necessary to overcome shyness, and how to communicate clearly and straightforwardly in order to avoid misunderstandings. LST has been reported to be successful in preventing smoking, alcohol drinking and marijuana use. One study reported a decrease in the number of binge drinkers by more than 50% in a group that received the LST program, compared with a control group. The effects were evident at both one-year and two-year follow-up (Botvin, Griffin, Diaz & Ifill-Williams, 2001), and at three-year follow-up (Botvin, Baker, Dusenbury, Botvin & Diaz, 1995). The only effect size estimate from LST interventions that I have been able to find comes from an effectiveness trial with youth at high risk. The effect size for alcohol drinking at one-year follow-up was $d = .22$.

Project Northland

Project Northland (Komro et al., 1996; Komro et al., 2001; Perry et al., 1996) is a school-based multi-component program targeting alcohol drinking. The program is delivered on a weekly basis over three years, during grades 6 through 8. The program consists of components addressing the family, peers, the school, and the community. The initial activities within the program are mainly concentrated on parent-youth activities. Students are provided with four activity books, where fictional characters serve as examples. The activity books also include exercises, e.g. by forming family forums where parents and youths are given topics to talk about alcohol-related issues and rules with each other. Furthermore, parents receive four newsletters containing information on youth alcohol drinking. Also, a steering committee is created. It consists of professionals, such as police, health professionals, shopkeepers, parents and other concerned citizens. The second year deals mainly with school-based activities, led by teachers and student leaders. This part of the program includes a component designed to prepare students to deal with peer pressure. This is done by preparing students to recognize and to resist situations in which there is peer pressure to use alcohol. This part of the program lasts for eight weeks, but the newsletters to parents continue throughout the second year of the program. Also, a youth program named TEENS (The Exiting and Entertaining Northland Students) is launched. TEENS is intended to create and promote creative and alternative alcohol-free youth activities. The objective of the third and final year is to reinforce and maintain awareness of the program. The community coalition, TEENS, and the letters to parents continue during this final year.

An experimental evaluation of Project Northland revealed significant results on alcohol and drug use at grade eight (Perry et al., 1996). Alcohol use during the latest month was 20% lower among the subjects in the prevention condition than in the control condition. Furthermore, tobacco smoking was 37% lower, and marijuana smoking 50% lower, among those who reported no use at pre-test in the prevention group (Perry et al., 1996). The strongest effects were found among participants who were non-users at pre-test. However, no effects were evident for those who were already users at pre-test. Although no behavioral effects were evident among the early starters, they reported having fewer age-mates who were alcohol consumers, that their parents often raised issues about alcohol, and that they were more disposed to attend alcohol-free parties, compared with members of the control group. A follow-up study two years after the last implementation of the program provided evidence of long-term effects on alcohol use (Perry et al., 2002), but these effects were weaker than during the implementation of the program. The effect size on the Tendency to Use Alcohol scale was 0.16 three years after pre-test (Perry et al., 2002).

Strengthening Families Program for Parents and Youths 10-14

This universal program is an extension of the selective Strengthening Families Program and the Iowa Strengthening Families Program (Kumpfer, DeMarsh & Child, 1989). The overall objective of the Strengthening Families Program, for parents and youth aged 10-14, is to reduce alcohol and substance use as well as other problem behaviors. The program runs from grade 6 to grade 8, and is intended to reach its goals by improving the child management skills of parents, and improving the pro-social and personal competencies of youths. The program consists of seven evening sessions, with each session lasting two hours. The first hour, where youths and parents are separated, mainly focuses on skill building and pro-social management for youths. The first parent hour focuses on activities intended to promote pro-social parenting behaviors, using videotapes and other practical exercises. Topics covered include parenting skills, like the importance of parental warmth, setting up appropriate house rules, and rewarding appropriate behaviors. The youth sessions focus on goal setting, stress and emotion management, communication skills, and skills to handle peer pressure. The second hour is spent by youths and parents together in different family activities, such as practicing conflict resolution and communication skills, and engaging in family bonding. Four booster sessions are designed to maintain the program after the seven-week intervention period (Spoth, Redmond & Shin, 1998). Results from evaluations of the program have demonstrated beneficial effects. Both alcohol use and substance use have been found to be less prevalent among youths in the prevention condition, compared with controls. Evidence on the parent level is also clear, e.g. improved child management skills, increased parent-youth interaction and communication (DeMarsh & Kumpfer, 1986), and more youth involvement in family decisions (Spoth, Redmond & Shin, 1998; Spoth, Redmond & Lepper, 1999). Findings of an evaluation 18 months after pre-test revealed a 60% reduction in first-time alcohol use (Spoth, Redmond & Lepper, 1999). An evaluation of effects four years after initiation of the program also found positive evidence. Youths in the intervention condition showed significantly lower alcohol tobacco and marijuana use (Spoth, Redmond & Shin, 2001). The effect size at one year follow-up was .29, and a two-year follow-up yielded an effect size of .39 for alcohol initiation. The youths were at grade six at the time of the intervention (Spoth, Lopes Reis, Redmond & Shin, 1999).

Child and Parent Relations Project

The Child and Parent Relations Project (Loveland-Cherry, Ross & Kaufman, 1999) is based on social skills and parenting practices. The objective is to reduce underage alcohol drinking; implementation mainly targets nine year-olds and their parents; and the program is maintained through booster sessions. The program relies on problem behavior theory (Jessor & Jessor, 1977) and social cognitive theory (Bandura, 1986). The intervention consists of three in-home sessions, each of one hour. The in-home sessions are led by trained field staff. They are followed by family meetings and follow-up telephone calls. The in-home sessions deal with general parenting skills as well as specific alcohol-related issues. Parents are taught a general format for family meetings, and are given topics for two family meetings before the next in-home session.

Evaluation of the program (Loveland-Cherry, Ross & Kaufman, 1999) revealed mixed results. The results supported the effectiveness of the program for the majority (86%) of the youths in the intervention group who were non-drinkers before the initiation of the intervention. However the intervention did not affect those who were users prior to the intervention. The results support the effectiveness of the family intervention as a universal prevention program for decreasing initiation of alcohol use and subsequent misuse for the majority of youths who do not report drinking at pre-test. The evaluation study concluded that the group of youths who had already used alcohol at pre-test needed additional support. I calculated the effect size from the effect study (Loveland-Cherry, Ross & Kaufman, 1999); Cohen's d for alcohol use at post-test was .25.

The Midwestern Prevention Project (MPP), also referred to as Project STAR

MPP (Pentz, 1989) is a comprehensive alcohol and drug abuse prevention program that targets youths from grade 6 through grade 11, and their parents. The objective is to reduce tobacco, alcohol and marijuana use among youths. The program makes use of several agents, which include the school, parents, the media, and community organizations. The *mass media* component is initiated in the first year within the confines of the school program and continues throughout the project period of five years. The mass media component consists of several television and radio broadcasts, and also printed publications. The radio and TV messages are mainly intended to introduce and explain the school-based program to the surrounding community. The messages delivered by each program component, especially the school and parent programs, are reinforced by announcing them through the ether media to the surrounding community. The *school program* is the main component, and is initiated at grade six or seven (depending on the local school district). It is delivered by trained teachers, and facilitated by peer leaders who are nominated by the class. The peer leaders are trained by teachers. The program includes 10-13 classroom sessions that focus on skills to resist and constructively handle actual or perceived social pressures to use drugs. The second year (grade seven or eight) consists of a five-session booster program that is intended to reinforce the previous messages. Furthermore, peer counseling and other support activities are provided. The *parent program* component is initiated in the second year of implementation. The focus and objective of this component is to develop family support and to facilitate restrictive family norms towards alcohol and drug use within the family. From year three and continuing through year five, community and local government leaders are encouraged to prepare a so-called *community organization plan* and implement *drug abuse prevention services* that are intended to reinforce and complement the other program components. Health policy change, which is a component carried out by the community officials involved. It is intended to take place during the fourth and fifth years. The objective is to work out and implement community-wide policies that reduce the demand and limit the supply of alcohol, tobacco and other drugs. Examples of ways of realizing this are local regulations restricting cigarette smoking in public places, increasing alcohol prices, and limiting the availability of alcohol.

MPP has been shown to reduce marijuana use and daily cigarette smoking by approximately 40% among program participants, with a smaller reduction in alcohol use. Reductions in daily smoking, heavy use of marijuana, and use of some hard drugs have been shown in follow-up studies of participants up to 23 years of age. MPP also has helped decrease parental alcohol and marijuana use, and increase positive parent-youth discussions about drug use prevention (Pentz, 1998). The effect size at post-test for parents' perceived impact on preventing youths' drug use was .22, after controlling for the pre-test level (Riggs, Elfenbaum, Pentz, 2006).

A school-based intervention – Project SMART

Project SMART (Self-Management and Resistance Training) has served as a template for several other successful prevention trials, such as Project ALERT (Ellickson, Bell & McGuigan, 1993) and Project STAR (Pentz, 1995). Project SMART is designed for youths in school grades seven and eight. The main objective is to teach students ways to resist alcohol, tobacco and other substances, by making use of resistance and refusal skills. A related objective is to improve handling of peer pressure. The program mainly consists of the school component described in the MPP program above.

Hansen and co-workers compared the effectiveness of the SMART program, with its emphasis on resistance and refusal skills, with an alternative program, based on affective education, which included stress management, goal-setting training and values clarification. The results suggest that resistance and refusal training was effective in delaying drug use among seventh graders, while affective education had no effect (Hansen, Johnson, Flay, Graham & Sobel, 1988). Another evaluation of the program revealed that the program was particularly effective in reducing alcohol use among girls (Graham, Johnson, Hansen, Flay & Gee, 1990). A five-year evaluation study of Project Star reported a significant decrease in smoking tobacco and marihuana, but not in alcohol drinking in intervention as compared with control schools (Johnson et al.,1990). Effect sizes were not reported in the study.

Preparing for the Drug Free Years, previously referred to as Guiding Good Choices

Preparing for the Drug Free Years (PDFY) targets the parents of youths aged 10-14. PDFY is designed to reduce youth drug use and other problem behaviors. PDFY consists of a curriculum that is intended to help parents recognize and deal with risks that might contribute to youth drug abuse, and contains strategies for strengthening family bonding. PDFY is grounded theoretically in the social development model (Hawkins et al., 1992). According to the model, a youth's social bonding depends on the extent to which the youth is invited to get involved in school and at home, based, for example, on whether the youth is encouraged to follow rules or praised by parents or teachers for completing jobs around the house or at school. Another crucial condition is that involvement and other pro-social behaviors are reinforced in these settings. The model assumes that early recognition by parents of the merits of involvement is crucial for youths to get involved in the school and at home. PDFY focuses on strengthening family bonds and establishing clear standards for behavior. PDFY is also intended to help parents to manage and shape their youths' behaviors. PDFY is designed to reach parents before their youths come to the age when experimenting with alcohol and drugs typically occurs. Two volunteer workshop leaders deliver the program in five two-hour sessions or ten one-hour sessions. The sessions deal with issues like pro-social family relationships and communication, family management skills, and constructive resolution of family conflicts. The sessions are interactive and skill-based. Opportunities for parents to try out their new skills are provided in the sessions. Immediate feedback from workshop leaders and their peers is also given. Parents are informed about underage drug use as well as how to increase youths' opportunities for meaningful involvement and interaction in the family. They are also taught the behavioral, cognitive, and social skills needed for meaningful family involvement. Parents also learn about appropriate reinforcement and sanctions for accepted or deviant behaviors. Other things taught in the program are the use of family meetings to enhance communication and strengthen family bonds. The meetings are also used to establish house rules on alcohol- and drug-related issues. Furthermore, parents are taught how to enhance their youths' refusal skills (Kosterman, Hawkins, Spoth, Haggerty & Zhu, 1997). A more recent application of the program concept is Guiding Good Choices (GGC), which by and large is a refined version of PDFY. To my knowledge, no evaluations of GGC have yet been published. According to Haggerty (personal communication, K Haggerty, December, 2004) GCC is mainly a change of name from PDFY; it is not a totally different program.

An evaluation measuring parents' norms relating to alcohol and other drug use over a two-year period found that PDFY parents had stricter norms about youth drinking than control parents (Park et al., 2000). There was significantly less growth over time in alcohol use among youths in the PDFY group compared with controls. At three-and-a-half-year follow-up, 65% of the control students reported initiating alcohol use compared with 52% of the PDFY students. There was also less total alcohol use among youths in the PDFY group. At the three-and-a-half-year follow-up, 40% of the youth in the control condition reported using alcohol in the past month compared with 24% of the PDFY youth. Forty-two percent of the control youth reported having being drunk compared with 32% of

PDFY youth. At a three year follow-up of the PDFY, the effect size for mean alcohol use was .22 (Park, et. al 2000).

Some common features of successful prevention programs are that they train youth in constructive problem-solving. This is highly relevant from Moffit's perspective since this will lessen the likelihood of youth getting into situations or committing acts with long-term consequences that ensnare them, e.g. by ruining relations with parents. Other common themes are to recognize and constructively handle situations where there is a perceived social pressure to, for example, drink or smoke. Provided with refusal skills, youths will be resistant to peer pressure and less likely to model the behaviors of life-course persistent delinquent youths.

The programs are also in line with social control theories in that they provide youths with clear expectations concerning their conduct in school and during their free time. The programs involving parents promote good parent-child relations, and thereby enhance social bonding.

Unsuccessful prevention programs

The prevention literature provides some good examples of well-planned universal programs that have proven to be successful in their aims to reduce alcohol and drug use among youths. Unfortunately, not all preventive efforts have been proven to be effective in scientific evaluations. The literature on alcohol and drug use prevention has identified some approaches that do not seem to be successful. Examples are: solely providing information about alcohol and drugs (Botvin, 1995; Tobler, 1992); just informing about health risks associated with alcohol or drug use (Bachman, Johnston & O´Maley, 1991); and solely relying on self-esteem, social skills or attitudes (Tobler, 1992; Donaldson, Graham, Piccin & Hansen, 1995; Hawthorne, Garrard & Dunt, 1995). Below I will briefly review a well-known and widely used program that so far lacks sufficient scientific support to claim effectiveness. This is particularly remarkable since it is perhaps the most popular program up to now.

DARE is an acronym for Drug Abuse Resistance Education. The original DARE program involved uniformed police officers going into elementary schools once a week for 17 weeks to educate students to resist trying drugs. The program was developed by the Los Angeles Police Department in 1983. The aim was to provide students with the skills to resist tobacco, alcohol and drugs. The program begins with students signing a statement that they will stay away from alcohol, tobacco and drugs. On completing a DARE program the students receive graduation certificates. The program consists of lessons on topics such as ways to say no, building self-esteem and learning assertiveness. DARE is currently being delivered throughout the United States and has spread into over 50 other countries. Today, it is one of the most popular drug-abuse prevention programs.

A 10-year follow-up study compared students who completed DARE with students who had regular drug education in health classes from their regular teacher (Lynam et al., 1999). The results showed that, at age 20, there were no differences between the groups regarding smoking, drinking or drug use. Lyman and co-workers concluded: “There appears to be no reliable short-term, long-term, early youth, or young adult positive outcomes associated with receiving the DARE intervention” (p. 295). Similar conclusions were drawn from a 5-year follow-up (Clayton, Cattarello & Johnstone, 1996).

Recently, the program was renewed and renamed DARE PLUS, and was extended for delivery up to junior high school. The DARE PLUS curriculum focuses on youths in the middle and junior high school years, and is intended to reduce delinquency, violent behaviors, and tobacco, alcohol and drug use among 7th and 8th grade students. An evaluation of the DARE PLUS program has recently been published (Perry et al., 2003). The evaluation involved 24 middle and junior high schools, which were matched on size and socio-economic features as well as levels of drug use. The schools were randomly assigned to three conditions: the original DARE; the revised DARE PLUS, and a third group: a wait list control. The results gave support for the DARE PLUS program in reducing alcohol, tobacco, and multi-drug use and victimization among boys. However, the DARE PLUS program did not demonstrate those effects for girls (Perry et al., 2003). In short, a widely used program is no warranty of general effectiveness. The DARE program serves as an example of this; DARE PLUS is promising, but only for boys. Even so, it is still widely used at schools targeting both boys and girls. At least, it has not, to my knowledge, had counter-productive effects.

Generally, however, the number of counter-productive or null results in prevention trials is not well-known. One reason is, of course, that many ongoing prevention programs are not scientifically evaluated. Another obvious reason is that studies that do not show beneficial results are likely to be put in a file drawer rather than being submitted for publication (Dishion, McCord & Poulin, 1999).

The prevention literature includes a few examples of prevention programs that actually have had an opposite effect; they created problems instead of reducing them (e.g. Dishion, McCord & Poulin, 1999). I will present some counter-productive findings, sometimes referred to as iatrogenic effects. Few of these are presented as results from failed prevention trials. The unexpected and unwanted findings are often presented as “side-effects” and are hidden in the results sections of prevention programs that are regarded and presented as successful programs. The programs might have an overall positive impact, i.e., on a majority of the intended population, but can have iatrogenic effects on subgroups. These iatrogenic effects are typically not mentioned or much discussed. For example, Ellikson, Bell and McGuigan (1993) found in their prevention program, which was based on the social influence model, that the early starters in the prevention condition increased their smoking and drinking relatively more than the early starters in the untreated control group. A similar finding from a school and family based program was reported by Loveland-Cherry, Ross and Kaufman (1999). They found a significant increase in alcohol drinking and in alcohol-related problems among the early starters in the treatment condition compared with the matched controls. This suggests that universal prevention approaches may have iatrogenic effects on early starters. There are also examples that a preventive intervention can have negative consequences for late starters (Palinkas, Atkins, Miller & Ferrera, 1996). Palinkas and co-workers evaluated the impact of a social skills training program and found that the subjects in the prevention condition who had not used drugs at pre-test were three times more likely than the untreated controls to have used marihuana at post-test. This study targeted subjects defined to be "high at risk". The preventive content was delivered in a group setting. This finding is not surprising when considering McCord's classical Cambridge-Somerville Youth Study evaluation (Gifford-Smith, Dodge, Dishion & McCord, 2005; McCord, 1978; 1981). The Cambridge-Somerville Youth Study is perhaps the clearest example of the detection of iatrogenic effects. The negative treatment effects were attributed to negative group dynamics. The intervention involved situations where high-risk youths interacted with other high-risk youths, e.g. at summer camps. The results of the evaluation showed that the program was harmful. "A good part of the harm appears to have come through something that happened at summer camp when the boys returned for at least a second stay" (McCord, 2001). A lesson drawn from experiences of the evaluation of the program is that one should be cautious in aggregating highly deviant youths for treatment. It might be more advisable to treat highly deviant youths individually. There are other studies in the literature that have reached the same conclusion, namely that aggregation of high-risk youths is problematic from a preventive perspective (For a review, see SRCD Social Policy Report, 2006).

Other programs in the alcohol and drug area which have been shown to have an iatrogenic impact were reported by Hawthorne (1996). Hawthorne re-analyzed his earlier evaluation of a so-called Life Education program, a school-based social influence and competence program. In his re-analysis, he applied estimation of the population attributable (risk) fraction, a technique that quantifies the extent to which an outcome is prevented by exposure (Rockhill, Newman & Weinberg, 1998). In this case, it refers to how much alcohol, tobacco and analgesic use was decreased by exposure to the preventive intervention represented by the Life Education program. In the reanalysis, he found that cigarette smoking, alcohol drinking, and un-prescribed use of analgesics were relatively more common within the Life Education group than the untreated control group.

Another example comes from an evaluation of a school-based curriculum (Perry, et.al., 1989) involving social influence and alcohol education. The study had three experimental conditions: teacher-led education, peer-led education, and a control condition. The study presented findings from different countries. The authors reported that the experimental prevention condition that involved teacher-led classes was associated with increased alcohol drinking, compared with the peer-led condition, and in some countries also compared with the control condition.

The prevention programs mentioned here were all developed in north America. The reason for choosing those programs as good and bad examples is that, so far, there are no Swedish alcohol prevention programs involving the family that have been systematically evaluated.

One conclusion to be drawn from this overview is that well-intentioned people and organizations sometimes deliver ineffective or even counter-productive prevention programs without knowing it. A rule of thumb for all serious actors is to follow the principles of *evidence based practice*, where the *current* best theory and knowledge are considered together with the experiences of practitioners, and with the preferences and needs of the targeted group or individuals (Sackett, Rosenberg, Gray, Haynes & Richardson, 1996). But even following these principles does not guarantee effectiveness. The only way to say something about the effectiveness of a prevention program is to thoroughly evaluate it. If the foundations of a program do not feed into a sound developmental theory, and go counter to the practitioners' experience and the desires and needs of the targets, there are grounds for caution. The intervention may be worthless, or even worse counter-productive.

Significance in everyday life

Prevention programs need to be evaluated and compared in effectiveness with each other. The criterion of statistical significance is used by researchers to rule out the likelihood that the observed difference between a prevention and a control group is an accident of sampling. The statistical significance value and the p value indicate the probability that a difference of at least the same size would have arisen by chance. A rule of thumb in behavioral research is $p < .05$. But it is problematic solely to rely on statistical significance tests in research in general, and in prevention research in particular (APA, 2009, p. 33). The main reason is that a calculated p value depends on the sample size and the size of the group differences. It is possible to obtain a statistically significant result, despite having a very small effect, if the sample is large.

An evaluation of a drinking prevention program can indicate clear and statistically significant differences in drunkenness during the latest month when comparing youths in a treatment and control group. The program developer might point to a successful preventive intervention, and refer to the statistical significance. If the sample size is large enough, the means of the prevention and control group can, for example, be 2.9 and 3.1 events of drunkenness during the latest month, respectively, and statistically significant. This finding might impress or not. But as a parent, or a program stakeholder, one wants to have a sense of the *size* of the difference, its magnitude. In prevention research it is not always possible to describe the quantitative size of a difference in a verbally meaningful way. A standardized measure of an effect can be useful. A measure that is commonly used to determine effect size is Cohen's *d,* which measures the standardized difference between the means, i.e., the difference between the mean score of the prevention group and that of the control group, divided by the pooled standard deviations of the groups (Cohen, 1992). This effect size measure gives a more intuitive estimate of the size of the experimental effect in a way that makes comparisons between different prevention studies possible. Cohen's d is not sensitive to sample size. Rosenthal and Rubin (1982) argued that effect size can be translated into more concrete terms, which makes it analogous to percentages of the differences between tested groups. This can be done by simply dividing the effect size by 2 and multiplying by 100. The product represents the relative mean difference between the measured groups. Cohen (1992) was hesitant about suggesting a rule of thumb or convention for interpreting effect sizes. He suggested that effect sizes of .20 are small, of .50 medium, and of .80 or above large. Because different research areas require different effect sizes, Welkowitz, Ewen and Cohen (1982) explicitly stated that these conventional values should not be used rigorously, but that the effect size appropriate to the specific problem should be specified. Using the rule of thumb in a blind fashion is as problematic as having a fixed criterion for judging the strength of correlations, regardless of the nature of what is being measured.

Utilizing effect size measures, Tobler and Stratton (1997) conducted a meta-analysis in which 595 reports of universal interventions preventing youth drinking were surveyed. One hundred and twenty of these passed the inclusion criteria of being north American studies published after 1977, of being universal school-based drug prevention programs, of having a control group, and of having measures from pre- and post-test among youths at grades 6-12. The programs were further subdivided into interactive and non-interactive programs based on their content. The interactive programs were programs where the students learnt interactively in small groups, sometimes of same-age peers, and where the focus was on teaching skills, e.g. refusal skills. The interactive programs (labeled as interactive high-quality programs) included some of the programs mentioned above, like Project STAR (Pentz et al., 1989), Project SMART (Hansen, Johnson, Flay, Graham & Sobel, 1988), and Life Skills Training (Botvin & Eng, 1982). The non-interactive programs were mainly knowledge-based and affective-based programs, e.g. DARE-type programs. When comparing the interactive programs on alcohol drinking with the non-interactive programs, clear differences were found. The interactive programs had an average effect size of .21, whereas the non-interactive programs produced an average effect size of .07. Examples of the interactive programs assessed in the study are the programs I have presented in the section on successful universal prevention programs targeting alcohol and drug use. In conclusion, the effect sizes in most universal programs, whether they are interactive or non-interactive, are not particularly impressive, although they are widely cited and utilized as templates for effective intervention strategies. Widely used non-interactive programs like the DARE-type programs have almost a zero impact.

Lipsey (1992) has argued that effect sizes of .10 for serious deviancy might have practical significance. This line of reasoning is sometimes referred to as the preventive paradox (Kreitman, 1986). The paradox is that most alcohol problems in a population occur among moderate social drinkers, rather than among excessive drinkers. The preventive paradox has had major implications for universal preventive interventions. A conclusion to be drawn from the paradox is that a shift from a risk orientation to a more universal approach perhaps ought to be made. Instead of solely focusing on a minority of excessive drinkers, it might be wise also to target the larger group of individuals who are moderate drinkers.

Not all prevention programs that yield significant differences between the treatment and the control group can claim to have treatment effects that are clinically significant. Clinical significance refers to whether a treatment effect entails changes that are large enough to make a clearly noticeable difference (Kendall & Grove, 1988). Most prevention programs, even the text book examples, typically yield minor results when considering their effect size or when calculating the relative difference at group level. However, it is claimed that, when considering treatment effects for serious deviancy, small effects might have practical significance.

The Swedish context

Up to now I have presented research findings and prevention programs from north America. In this section, I will present some Swedish research findings. Since the Örebro Prevention Program (ÖPP) that I will present in detail later emanates from basic research that has been conducted at the Center for Developmental Research in Örebro in Sweden, I will give a brief overview of some basic research findings from that project as well. The emphasis on free-time activities here is explicit, because one of the major components of the ÖPP concerns promoting structured free-time activities.

Research on the relation between free-time activities and psychosocial adjustment: the role of deviant peers

As mentioned earlier, a significant feature of youth development is that youths spend a decreasing amount of time with their parents and are increasingly together with peers outside the custody of adults (Larson & Verma, 1999; Larson, Richards, Moneta, Holmbeck & Duckett 1996). After-school and free-time activities provide a rich opportunity for youths to cultivate interests, hang out with peers, or try out different organized or spontaneous activities. Obvious questions many parents ask are what kinds of free-time activities are most beneficial for their kids, and if there are leisure contexts that might influence their kids in a bad way.

There is a fairly large literature on the relation between youths' activities in their free time and how these activities are related to their psychosocial adjustment. When taking youth free-time activities into consideration, a distinction is commonly made between structured and unstructured activities. Structured activities are activities where there are adult leaders and where the activity is scheduled in advance. The activities are characterized by gradually building the participants' skills (Eccles & Gootman, 2002; Mahoney & Stattin, 2000). Examples of what are typically regarded as organized activities are sports, music, theatre, hobbies, religious activities and politics, which are typically conducted within an organization or youth club. Several studies show that youths who are involved in these kinds of activities tend to do better in school (e.g. Cooper, Valentine, Nye & Lindsay, 1999; Darling, 2005; Jordan & Nettles, 1999; Marsh, 1992), have lower rates of school dropout (Mahoney & Cairns, 1997; McNeil, 1995), lower delinquency and externalizing problems (Fredricks & Eccles, 2006), less alcohol and drug use (Darling, 2005), lower depression (Barber, Eccles & Stone, 2001), and greater self-esteem (for girls engaged in team sports) (Pedersen & Seidman, 2004). Thus, a sizeable literature with robust findings shows that youths who participate in structured activities are better adjusted than those who do not.

A committee working on behalf of the US National Research Council and Institute of Medicine listed the features that, in a youth leisure context, promote positive youth development. They came up with a list of eight features: 1. Physical and psychological safety; 2. Appropriate structure; 3. Supportive relationships; 4. Opportunities for belonging; 5. Positive social norms; 6. Support for efficacy and mattering; 7. Opportunity for skill building; and 8. Integration of family, school, and community efforts (Mahoney, Eccles, Larson & Lord, 2005). These features are thought of as explanatory mechanisms through which organized-activity involvement promotes positive development (Mahoney, Eccles, Larson & Lord, 2005). Interestingly, only one out of eight of the proposed features deals with issues of the social climate and peers.

Since participation in organized free-time activities is voluntary, it might be suspected that pre-existing differences might account for the outcome differences between participants and those who stay out of organized activities, rather than the activities per se. Indeed, there are studies that show that there is self-selection, in the sense that well-adjusted youth tend to engage in organized free-time activities to a greater extent than less well-adjusted youths, who are more prone to spend their free time hanging out with peers (Feinstein, Bynner & Duckworth, 2006). However, after controlling for relevant confounding factors, such as demographic conditions (Darling, Caldwell & Smith, 2005) peer group characteristics (Fredricks & Eccles, 2004) earlier levels of problem behaviors and school achievement (Fredricks & Eccles, 2006), the main conclusion that good psychosocial adjustment is linked to taking part in structured activities still holds. There are exceptions to these findings, and that concerns team sports. Participants in team sport activities often report more frequent alcohol drinking than do youth involved in other activities (Wichstrøm & Wichstrøm, 2009; Fredricks & Eccles, 2005; Barber et al., 2001; Eccles and Barber, 1999; for an exception, see

Fredricks & Eccles, 2006). In conclusion, there is reasonably good scientific support for the notion that involvement in free-time activities that are adult-led, structured, skill-building and pre-scheduled are associated with better psychological adjustment, including less drunkenness and substance use than among non-involved youth. However, there are some indications that team sport activities should be seen differently.

Unstructured activities, on the other hand, are related to poor adjustment, e.g. antisocial behavior, drunkenness and substance use (Stattin, Kerr, Mahoney, Persson & Magnusson, 2005). Although this link between unstructured activities and problem behaviors has been found in several studies, there have been few attempts to explain the relationship. An exception was made by Osgood and co-workers (1996), who developed the routine activity perspective. This theory is an attempt to explain how youths' experiences in certain settings are related to the development of antisocial behaviors. According to the theory, spending time in unstructured settings without adult supervision and no structuring of activities increases opportunities for antisocial acts. The more youths are exposed to these settings, the more they are likely to engage in antisocial acts. It is argued that it is the amount of time spent in unstructured activities together with peers that accounts for antisocial behaviors, rather than hanging out with deviant peers per se (Haynie & Osgood, 2005). A major problem with this theory is that it does not explain why some but not other youths prefer to spend time in these settings. Another limitation is that it does not explain why some but not all youths increase their antisocial behaviors as a consequence of being in unsupervised settings (Stattin & Kerr, 2009).

The importance of free-time activities and peers

There have been few attempts to explain the link between certain free-time activities and good or bad psychosocial adjustment. Specifically, the role of peer relationships has not been systematically tested empirically. Stattin and Kerr (2009) have argued that peer relationships are important in explaining the link between the structure of free-time activities and psychosocial adjustment. They used Swedish youth centers to test their ideas. Swedish youth centers were started to provide an alternative for youths who are not interested in organized activities, in order to keep them off the streets. Youth centers are publicly financed. They open at around dinner time and close around 10 pm (often later at weekends). There are adult leaders present, but they are few in number and do not direct the youths' activities or place demands on them. The youths themselves decide what to do. Typically they listen to music, drink coffee, play pool, cards or video games, or simply watch TV. Youth centers similar to the Swedish ones exist in many European countries, and also in America.

Mahoney, Stattin and colleges conducted a series of studies to test ideas about when unstructured settings facilitate problematic adjustment among youth. Results showed that participation in highly structured leisure activities was associated with low levels of problem behaviors. Involvement in unstructured activities, such as those at youth centers, was associated with high levels of problem behaviors in terms of police arrests, drunkenness, and tobacco and cannabis smoking. Youths at the centers also showed lower self-esteem and more failure expectations. By and large, the result patterns were the same for boys and girls (Mahoney, Stattin & Magnusson, 2001; Persson, Kerr & Stattin, 2004). Those studies concluded that there was an overrepresentation of at-risk youth at the youth recreation centers. A question that arises from these results is if this is due to a selection effect; youths with problems choose to go to the youth recreation centers rather than spend their free time in other settings. An alternative explanation is that youths' adjustment becomes problematic as a consequence of attending the youth centers. To investigate this issue, Mahoney, Stattin and Magnusson (2001) made use of a prospective longitudinal dataset: Individual Development and Adjustment (IDA) (Magnusson, Dunér & Zetterblom, 1975). All boys in the IDA longitudinal study were assigned to two groups, a "normal" group and a "problem" group based on teacher and peer ratings at age 10. Next, they examined whether the problematic ten year-olds more often went to the youth recreation centers regularly when they became 13 (a person has to be 13 to attend a youth recreation center in Sweden) in comparison with the "normal" boys. They found this to be the case, so selection was evident. Next, adjustment in adulthood was studied through appearances in police records between ages 13-30. The authors found that those who were regular visitors at the youth centers, whether they belonged to the "normal" or "problem" group at age 10, were registered by the police (up to the age of 30) to a considerably greater extent than those who chose not to visit the centers. In a thorough analysis, controlling for relevant adjustment and family factors at age 10, center attendance was found to be a strong predictor of future criminal behavior. In conclusion, problematic youths tended to gravitate to the unstructured youth centers, but problem behaviors tended to emerge among both those who were identified as problematic and unproblematic at age ten by their teachers if they spent time at the youth centers. These findings held after controlling for individual, family, and socio-economic factors prior to involvement in the youth centers.

These results are not limited to Swedish conditions. Eleven-thousand English participants in the British Birth Cohort were followed from age 16 to 30 (Feinstein et al., 2006). This study confirms the Swedish results, although the study used slightly different outcome measures and controlled for somewhat different background conditions. Attending youth clubs was associated with being an offender, a serious offender, or a victim of crime by the age of 30. Being in these specific unstructured settings were also related to abstaining from voting in public elections, being a single parent, and having a low income.

Another central question to examine is whether unfavorable development co-occurs with entry into this unstructured setting. Mahoney and colleagues (2004) conducted a study where they focused on short-term changes in adjustment as a consequence of starting to attend or quit going to youth centers. The study had a design where all 15 year-olds (grade 8) were followed over an 18-month period until they finished grade 9. The youths who started to visit youth centers during the study period clearly increased their levels of problematic behaviors, including delinquency, alcohol drinking and use of hashish. However, no decreases in problem behaviors were found among those who quit going to the centers.

These studies do not explain the mechanisms via which unstructured leisure is related to problematic behaviors. One way of explaining this is to consider Dishion's idea of "deviancy training". Deviancy training is a phenomenon that occurs when deviant youths meet and reinforce each other's talk about norm-breaking activities. The reinforcement is sometimes subtle; for example, laughing on hearing a peer talk about deviant behaviors may increase the probability that the peer continues to talk about norm-breaking. Dishion and colleagues observed verbal interactions between youths, and they could demonstrate that "deviancy training" was linked to future problematic behaviors, such as increased delinquency (Dishion, Spracklen, Andrews & Patterson, 1996) substance use (Dishion, Capaldi, Spracklen & Li, 1995) and violent behavior (Dishion, Eddy, Haas, Li & Spracklen, 1997). This suggests that the unstructured setting per se might not be sufficient to produce problematic behavior. What may also be needed is the presence of problematic youths who reinforce each other's norm-breaking talk or behaviors. This idea goes beyond the situational explanation of the link between free-time activities and psychosocial adjustment that Osgood and colleagues (1996) suggested.

In order to try to explain the relationship between free-time activities and psychosocial adjustment, Stattin, Kerr and colleagues (Persson et al., 2004; Stattin et al, 2005) conducted two studies that focused on girls. Specifically, they looked at peer socialization effects when trying to explain why some girls, but not others, who attended youth centers developed in an unfavorable way. They concluded that the same longitudinal association between attendance in an unstructured context and later increased deviancy was true for girls as well as for boys. They tested whether socialization effects could account for the increase in deviant behaviors among girls. They found that girls who had many friends outside school, with whom they spent a lot of time *and* who attended youth centers, were particularly high on future norm-breaking behaviors. Having many friends outside school but not hanging out at youth centers was not associated with increased norm-breaking. Also, there was no increased norm-breaking among girls who often hung out at youth centers, but did not have many friends. A significant interaction between heterosexual relations and youth center attendance was revealed. Developing heterosexual relations with older boys at the same time as spending a lot of time at youth centers, was related to future increased norm-breaking behaviors among girls. Spending time at the centers and not developing heterosexual relations did not have this effect on future norm-breaking behavior. Overall, these findings suggest that youth center attendance in itself is not related to increased drunkenness or norm-breaking behavior. Negative consequences of attending youth centers seem only to affect girls who, at the same time, develop intense peer relations and heterosexual relations at these centers. The conclusions from this research are in line with those from other recent research that stresses the notion that after-school program participation might decrease drunkenness and delinquency through exposure to contacts with pro-social peers. Gerstenblith and co-workers conclude: "… we should not be satisfied with merely decreasing youths' idle time, but rather we must further explore the type and quality of extracurricular involvement available to today's youth" (Gerstenblith, Soulé, Gottfredson, Lu, Kellstrom, Womer & Bryner, 2005, p. 459).

In summary, in order to establish whether a free-time setting is related to a positive or negative adjustment, or specifically promotes an increase in drunkenness, there is a need to consider the characteristics of the individuals in the setting. If an individual enters a youth leisure setting that is congregated by predominantly deviant youths who drink, socialization effects are likely when that individual starts to engage with those peers in the free-time context, but are less likely if the individual does not make one of these deviant youths his or her best friend or girlfriend/boyfriend. It is not the case that unstructured settings, such as youth centers, have a bad influence on all attendees. Youth centers seem to have their strongest negative influence on youths who develop strong peer associations or opposite-sex romantic relations at the centers.

Alcohol habits among teenagers in a normal Swedish population

The adolescent years are characterized by rapid and sometimes dramatic changes in attitudes and behaviors when it comes to alcohol drinking. For example, 10 year-old boys or girls are typically very much against unhealthy behaviors such as smoking and alcohol drinking. They are confident that they never will engage in such unhealthy behaviors (Svensson, Svensson & Tops, 1998). However, a few years later a majority have been drunk at least once during a school term, and just a few years later a majority have been drunk on repeated occasions. Some also will be regular smokers. Alcohol drinking among youth is a concern in contemporary society. Sweden, like several other Western societies, has a longstanding tradition of trying to control and reduce underage drinking. It is stated in Swedish law that it is illegal to provide or sell alcoholic beverages to youths under the age of 20 except in restaurants, where the age limit is set at 18. However, the legislation does not prevent youths from gaining access to alcohol. This can perhaps best be illustrated by referring to the "10 to 18 study" (Kerr, Stattin & Kiesner, 2007) The 10 to 18 study is used here to illustrate some ideas that the Örebro Prevention Program (ÖPP) rests upon. The 10 to 18 study has broad scope, and involves all youths between the ages 10 and 18 in a whole community (n = 3,000), including their caregivers. As expected (see Figure 4), very few of the younger youths, aged 10-12, had ever been drunk during the previous year, but 0.6% of the 10 year-olds, 3% of the 11 year-olds, and 5% of all boys and girls at age 12 had been drunk at least once. The real shift in alcohol drinking started to occur at age 13, when 19% had been drunk at least once during the last school term. At age 14, 36%, and at age 15, 59%, of all boys and girls had been drunk at least once. The steady increase in prevalence was found to continue. At age 16, 71% had been drunk during the last term, and the proportions at age 17 and 18 were 79% and 90%, respectively.

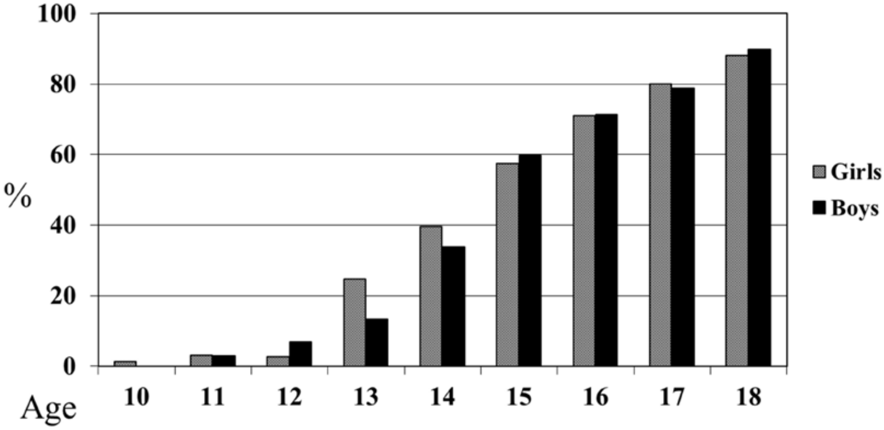

Figure 4. The percentage of youth in different age groups who reported that they had been drunk at least once during the latest year.

Figure 4 shows prevalence for boys and girls separately. Although these prevalence figures for drunkenness might seem alarming, they say little about more advanced and persistent alcohol habits. From looking at the figures, one might think that most of the younger persons sooner or later will have vast drinking experience. But, on the other hand, they might not drink particularly frequent. To examine age differences in *frequent drunkenness*, I present, by age, the prevalence of youths who had been drunk more than ten times during the previous term (Figure 5).

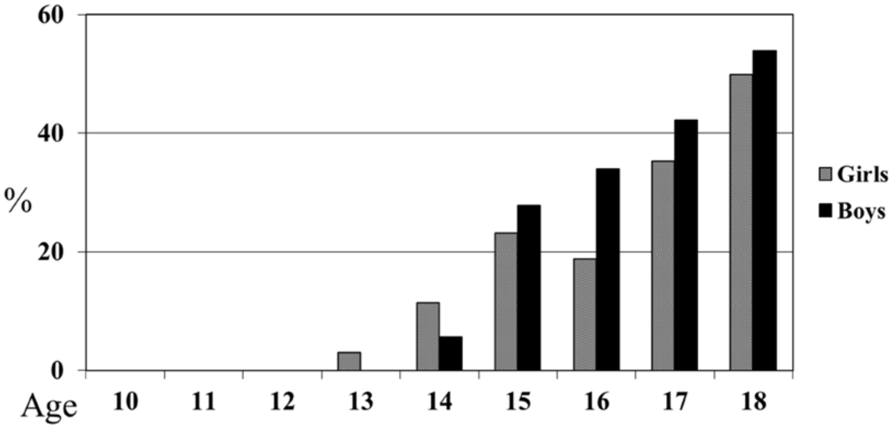

Figure 5. The percentage of youth in different age groups who had been drunk more than ten times during the latest year.

As shown in Figure 5, up to the age of 12 none of the youths had been drunk more than ten times during the term. By the age of 13, an average of 1.5% of subjects (3% of all girls) had been drunk as frequently as this, and thereafter there was a steady increase in prevalence, ending up with 52% who had been drunk more than 10 times at age 18. Note that, at ages 13 and 14, more girls than boys had advanced alcohol habits, but at older ages, boys outnumbered girls in frequent drunkenness.

Overall, we can conclude that youths radically change their drinking behaviors over time. Simply expressed, the older they get the more advanced their alcohol habits become. Around age 17-18, having been drunk during the school term is a majority phenomenon. Also, to have been drunk more than 10 times during the term is a majority phenomenon at age 18.

Parents' views on their youths' responsibilities – leisure and drinking

Younger youths are not normally given responsibility for deciding freely on their leisure activities. This responsibility will gradually pass over from parents to youths as the youths grow older. Parents of 16-17 year-old youths typically think that their youths should take their own responsibility, and decide for themselves on many aspects of their lives. This is, perhaps, what should be expected. In normal development, youths leave dependence behind them and strive for autonomy. Most parents feel that they can step back, and put trust in their youths not to violate rules.

In the 10 to 18 study, questions were asked about parents' opinions on the extent to which their youths should be responsible for their leisure activities. One question to the parents was: What is your general attitude towards leisure-time activities for someone your son's or daughter's age (leisure-time activities include going out with friends, going to friends' houses, and being in town during the evenings)?" The question had four response options:

1. With children of this age, you should absolutely let them do what they think is best. You should not interfere with what they do during their leisure time; children have to be able to do things without parents' intervening.

2. By and large, you ought to let them do as they like. You should only interfere when necessary. You should listen to what they say.

3. It is parents who ought to decide about children's leisure-time activities when they are my son's or daughter's age. You should keep yourself informed by regularly asking the child.

4. At this age, parents must determine the child's leisure-time activities. You should be able to insist that the children tell you where they are going before they

go out, and tell you afterwards what they have done, where they have been, and with whom they have been.

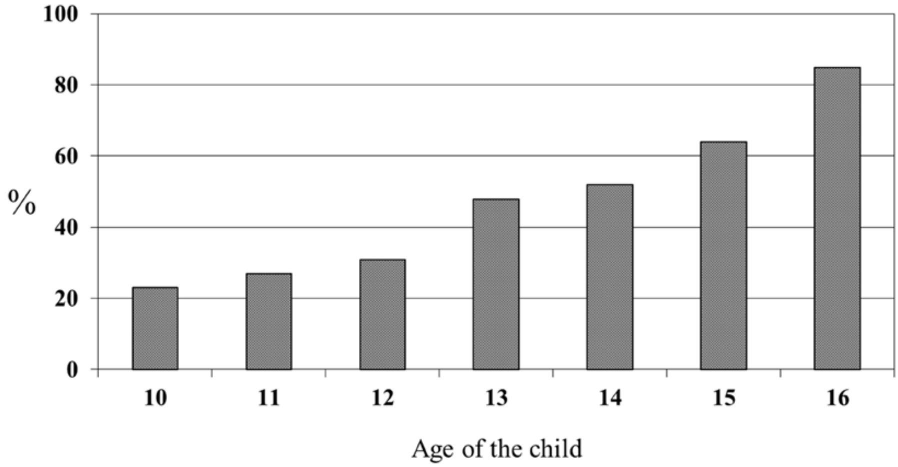

Figure 6. The percentage of parents who indicated the most lenient alternative concerning their children's free leisure time activities.

There are substantial differences in parents’ responses, according to the chronological age of the youths (see Figure 6). Parents of younger youths are less disposed to say that their youths ought to be in charge of their leisure activities. This is perhaps not surprising, but it illustrates the point that parents change their opinions about youth responsibilities as the youths get older. The older the youths are, the more freedom parents grant them.

Let us consider parents’ attitudes to youth drinking at different ages of their youths. A common assumption is that parents are adults with clear opinions about youth behaviors, and that they hold these opinions regardless of whether their youths are young or old. Some parents are more inclined to uphold the norms that are prescribed by legislation, whereas others are more tolerant and permissive.

This is not the case. When examining parents’ views on how youths ought to relate to alcohol, it is evident that parents’ opinions on these matters typically change over time. They tend to be restrictive when their youths are young, but tend to become more permissive when the youths get older. In the “10 to 18” project the following question was posed to the parents: Which of those four alternatives is closest to your view?

1. It is natural for children of our son’s or daughter's age to be curious about trying alcohol. We trust that our son/daughter drinks in a responsible way.

2. Children of our son's or daughter's age are adult enough to be responsible for their actions. If they want to drink alcohol they will, regardless of what parents do or say. We have given our son/daughter alcohol to drink at home in order to temper the excitement about it. From doing this, we have control over what they drink, and the risk that they will get illegal alcohol or drugs is reduced.

3. We think it is totally unacceptable that our son/daughter drinks alcohol outside the home. On the other hand, it has happened/happens that our son/daughter can taste wine or beer when we ourselves drink at a weekend dinner or something like that.

4. Children of our son's or daughter's age are way too young to concern themselves with alcohol at all. We think it is obvious that youths under 18 should not concern themselves with alcohol.

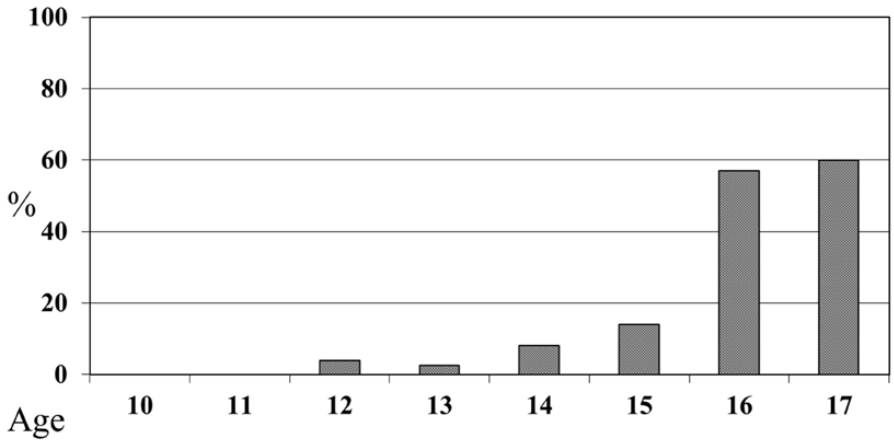

Figure 7. The percentage of parents who indicated the most tolerant alternative concerning underage alcohol drinking.

As shown in Figure 7, very few parents had tolerant attitudes towards underage drinking when their youth was below the age of 16. Parents of youths aged 10-13 were very restrictive with regard to underage drinking. Not a single parent of a 10 or 11 year-old youth chose the most tolerant alternative, and only 4% of parents of 12 year-olds did so. Parents with youths aged 13-15 were still only rarely tolerant of underage drinking. But dramatic change occurs when youths are aged 16 and 17. Although they still have youths who are under the legal age for buying alcohol, a majority of parents seem to be tolerant. Overall, the results presented here on parents' views on their youths' leisure activities and their attitude to drinking show similar tendencies across ages of the youths. The older the youth, the greater is the freedom allowed by their parents, and the more acceptant the parents become of underage drinking.

To what extent are parents' views on youth leisure-time activities related to their views on underage drinking?

Is it true that parents who are permissive with regard to how they view their youth's leisure-time activities also tend to be permissive with regard to their view on their youth's drinking? The answer seems to be yes. The correlation over all ages is 0.29, $p < .05$. Overall, parents who think their youths ought to be responsible and decide themselves about their leisure activities are also likely to have a permissive attitude to underage drinking.

Are parents' views on underage drinking related to their youths' alcohol consumption?

This is a critical question. If there is such a relationship, it has obvious preventive implications. I examined this for 15-18 year-olds and their parents (N = 482) using data from the 10 to 18 study. The reason for choosing this age group was that at those ages there is a steep increase in drinking among youths. A majority of parents with youths in this age group have restrictive attitudes (67%). The question posed to the youths at ages 13-16 was: Have you drunk beer, spirits or wine to the point that you felt drunk during the previous year? The response options were: 1 = never, 2 = once, 3 = two or three times, 4 = four to ten times, and 5 = more than ten times. I found a significant correlation between parental attitudes and youth drunkenness (r = - .32, $p < .01$). Parents who had permissive attitudes towards underage drinking had youths with more advanced alcohol habits (see Figure 8). Forty-five percent of all boys and girls who never had been drunk the previous year had parents who were restrictive of underage drinking. The corresponding figure for youths who had not been drunk the previous year among those having permissive parents was 19%. At the other end of the continuum, youths who had been drunk more than ten times the previous year were mostly youths with permissive parents (38%) and, to a lesser degree, youths with restrictive ones (17%). This difference in drinking habits between the two groups is statistically significant (2 $(_{1,\ 246})$ = 34.11, p <.001), reflecting less alcohol drinking among youths whose parents are restrictive towards underage drinking.

In summary, there is a connection between parents' attitudes towards underage drinking and their views on their youths' leisure-time activities. Parents who are permissive of underage drinking also tend to allow their youths the freedom to decide for themselves on what to do in their free time. Parents' attitudes to underage drinking are also related to their youths' drinking behaviors. Youths with parents who express restrictive attitudes towards underage drinking have youths who get drunk to a lesser extent than parents with more lenient attitudes.

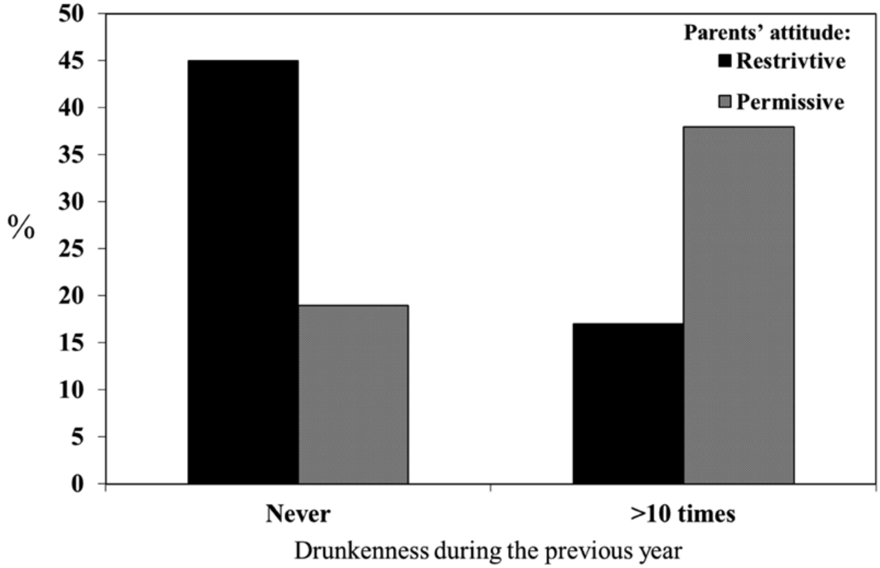

Figure 8. Parents' attitudes towards underage drinking in relation to their 15-18 year-olds' alcohol consumption.

Do parents' views on underage drinking impact on the future alcohol consumption of their youths?

Longitudinal data are needed to address this question. I used data from the 10-18 study and examined changes in youth drunkenness over one year, from age 14 to age 15. The outcome measure for this analysis was youth drunkenness 4 or more times the latest school term. I studied change over the year in frequent drunkenness separately for youths who had parents with permissive attitudes to underage drinking (scale values 1 and 2 on the attitude measure) and parents with restrictive attitudes (scale values 3 and 4 on the attitude measure) at age 14 of the child.

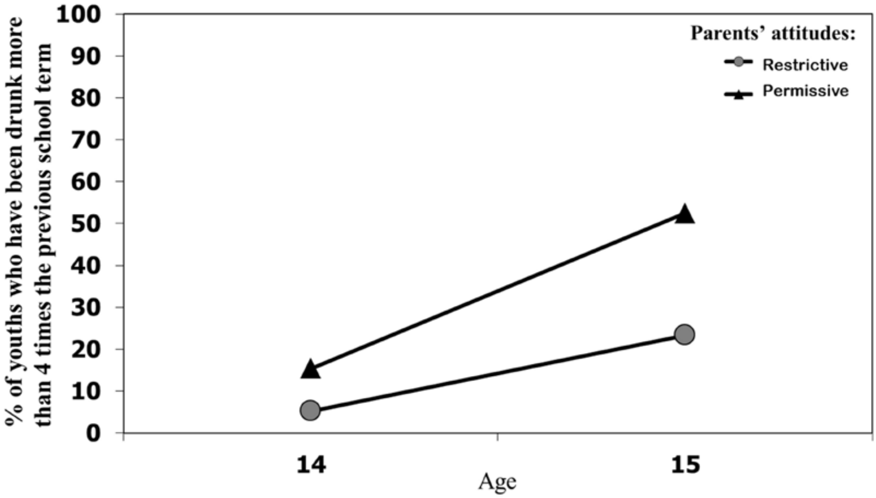

Figure 9. Development of frequent drunkenness among 14-15 year-olds in relation to their parents' attitudes towards underage alcohol drinking.

As shown in Figure 9, development into frequent alcohol drinking was more rapid among youths who had parents who were permissive concerning youth drinking at grade 8 than among youths with parents who were restrictive at grade 8. Figure 9 shows that there is an initial difference at age 14 of the child (5.2% versus 15.3%). This difference is greater at age 15: 23.3% versus 52.4%. Assuming that parents' attitudes towards underage age drinking are causally related to their youths' actual drinking, the conclusion is that. in families where parents have a restrictive attitude to underage drinking, the likelihood of advancement into advanced alcohol habits over time is considerably lower than for youths brought up with more permissive parents.

Are parents' views on underage drinking a predictor of youth drunkenness, after controlling for the youth's age and their parents' views on their youth's responsibility during leisure time?

Are the attitudes of parents concerning their youth's drinking associated with the youth's drinking when other relevant predictors are taken into account? To examine this, I used data from the "10 to 18" study and selected youths in the age range 13 to 16 years and their parents. In this age span, it would be expected that the youth's chronological age will be a fairly good predictor of drinking. As discussed above, I expected that parents' general views on youths' responsibilities would predict drinking. And, indeed they do. As reported in Table 2 (First step, Prediction 1), both the age of the youth and his or her parents' views on who ought to be responsible for the youth's leisure-time activities were unique predictors of drinking. Older youths drank more frequently and youths who had parents who gave them more freedom during leisure time drank more. These two predictors explained 10% of the variance in youth drunkenness.

If parents' views on underage alcohol drinking are just a reflection of their youth's chronological age and their general views on youths' responsibility for their leisure time, the inclusion of parents' attitudes towards underage drinking should not be a unique predictor of youths' alcohol drinking. But, as shown in Table 2 (Second step, Prediction 1), parents' views on underage drinking came out as the most important predictor of youths' drinking, even after controlling for youths' chronological age and the parents' general views on youths' leisure-time responsibility. From a preventive point of view this is important information, because it suggests that parents' attitudes towards underage drinking are an important factor in explaining underage drunkenness regardless of their child's age or their ideas about children's leisure-time activities.

Table 2. Predictions of underage drinking from Parents' views on adolescent responsibility- and underage drinking, age of adolescents and adolescent-norm breaking

	Prediction 1		Prediction 2	
	beta	sign.	beta	sign.
First step:				
Age	.22	***	.27	***
Parents view of adolescents responsibility	.15	***	.14	***
Adolescent norm breaking	-		.47	***
R^2	.10		.30	
Second step:				
Age	.15	***	.21	***
Parents view of adolescents responsibility	.10	**	.10	***
Adolescent norm breaking	-		.45	***
Parents view on underage drinking	.24	***	.20	***
R^2	.14		.34	

Note: ***$p < .001$; **$p < .01$

What is the role of parental characteristics relative to youths' delinquency in predicting youth drinking?

Delinquency is probably the strongest predictor of underage drinking (Barnes & Welte, 1986; Donovan, 1996; Jessor & Jessor, 1977). Youths who break norms at school, at home, and during their free time, typically drink more than other youths. Are parental attitudes important for drinking experiences even after control for youths' delinquency? This issue is of great importance, for if youths' delinquent behaviors are the essential predictor of drunkenness, and explain the effect that parental attitudes have on youths' drunkenness, then interventions should be more a matter of dealing with delinquency. But, if parents' attitudes to underage drinking are associated with youth drinking over and above the delinquency of their youths, then attempts to change these parental attitudes in a prevention design might be effective in reducing alcohol drinking among youths generally.

To investigate this, I first regressed alcohol drinking on chronological age of the youth, parents' views on their youth's leisure-time activities, and the youth's delinquent behaviors. As shown in Table 2 (Prediction 2), at the first step all these three measures were unique predictors of drinking. As expected, youth's delinquency was the strongest predictor. The model explained 30% of the variation in youth drinking. At the second step (Prediction 2), parents' attitudes to underage drinking were entered into the model. After controlling for the former three measures, parents' attitudes to underage drinking were found still to be a potent predictor over and above delinquency and the other two predictors. So, parents' attitudes to underage drinking seem to be robustly connected with their youth's drinking even when considering other relevant predictors like youths' delinquency.

To summarize, the results reported show that, although there is a substantial overlap between delinquency and alcohol drinking among youths, the one behavior is not just a reflection of the other. The same is true concerning parent's permissiveness towards youths' free-time activities and their attitudes towards underage drinking. Parents who have restrictive alcohol-specific attitudes tend to take an active part in their youth's free-time activities. Again, although there is some overlap, it is not just a reflection of general parental permissiveness or restrictiveness. In trying to explain underage drunkenness, it is clear that the conditions I have studied are important unique predictors. But a condition that, over and beyond the others, contributes to predicting underage drunkenness is parents' attitudes towards underage drinking. These findings have obvious preventive implications for a parent-targeted intervention.

It should be noted that even if there is an association between parents' attitudes to underage drinking and their youths' actual drinking, this does not necessarily imply a causal association. A possible alternative interpretation is that parents' views on underage drinking are reactions to their youth's actual drinking behavior. If parents are aware that their youths drink, they might adopt a more permissive stance (Glatz, Stattin & Kerr, manuscript submitted for publication.). An experimental design is needed to say something more definite about whether parental attitudes are causally related to youth drinking. Such a design, and the testing of it, will be presented below.

Summary and Conclusions

Generally speaking, youth drinking does not seem to be a big issue for most parents. Parents of both younger and older youths do not seem to worry much about their youths' drinking. But the attitudes that parents have towards underage drinking seem to be important in predicting how much or how little their youths might drink. First, there is a substantial association between parents' attitudes towards underage drinking and youths' drinking: youths with parents who have restrictive attitudes towards underage drinking get drunk to a lesser extent than youths who have lenient parents. Second, parents are considered as legitimate authorities by youths when it comes to matters dealing with potentially harmful issues, such as alcohol drinking.

Alcohol drinking among youths is a behavior that is strongly age-related. Not many 10 year-olds have ever been drunk. But when they are 15 or older, many have experiences of drunkenness. It is not just the youths who change during this age period. The parents of these youths change as well. This is clear from the results reported on how much parents try to control their youths' free-time activities. Many parents consider having control over their youths' free-time habits important when their youth is young, but it is less commonplace among parents of older youths. Change also occurs in parents' attitudes towards underage drinking. Parents tend to become gradually more lenient towards underage drinking the older the youth gets.

To the extent that one can convince parents (1) that there are good reasons for preventing underage drinking, (2) that they should see themselves as legitimate authorities when it comes to their youths' drinking, and (3) that they should retain the restrictive attitudes that they typically hold when their youths are preteen, there is the potential to reduce future drinking among youths. This is the philosophy behind the Örebro Prevention Program (ÖPP). The target for implementation is parents.

Other factors as well as parental attitudes to drinking may need to come in. There is a large literature on the relation between free-time activities and different aspects of psychosocial adjustment. Specifically, the presence of structured activities has been considered a hallmark of a good leisure setting for youths. Previously reported findings suggest that structured, adult-led free-time activities attract relatively well-adjusted youths (Mahoney, Stattin & Magnusson, 2001) and have beneficial effects on youth adjustment. Recent research shows that characteristics of the youths who congregate in structured and unstructured settings, and whether or not newcomers develop strong relations with those who typically are to be found in these settings, can explain some of the consequences of context for social behaviors. A particular free-time setting, which is relevant in a Swedish context, is the youth recreation center. Youth recreation centers have been shown to attract deviant youth. For boys, youth centers seems to have their strongest negative influence on those who attend youth centers and develop strong relations with peers who are frequent youth-center attendees. For girls, youth centers have been shown to be associated with problem behaviors among those who develop romantic relations with boys who often hang out at the youth centers. In conclusion, both parents and youths' free-time contexts are relevant targets for an intervention aimed at preventing alcohol drinking.

With all this in mind, a prevention program (the ÖPP) that operates in different contexts – at home and in free-time settings – was designed and developed. The basic idea was to test whether youth drunkenness could be prevented if parents' alcohol-specific attitudes could be influenced to remain at the same restrictive levels to which parents typically adhere when their youths are young. The other condition that, according to research, should contribute to less drinking would be to promote youths' participation in structured free-time activities. Accordingly, a prevention trial was designed:

- to implement techniques for (a) retaining parents' restrictive attitudes to underage drinking, and (b) increasing youths' participation in structured free-time activities, and bringing in more structured activity to the youth recreations centers; and
- to assess, given successful implementation of these two techniques, whether implementation leads to less drunkenness among youths.

Method

The guiding ideas behind the Örebro Prevention Program

The Örebro Prevention Program (ÖPP) is a universal prevention program targeting alcohol and drug use among youths. The program is multimodal and involves parents and leisure-time settings, but also involves the schools, since parent contacts take place at school. School involvement is also part of the strategy for increasing youths' participation in structured free-time activities. The ÖPP´s strategy is derived from basic research on Swedish youths and parents. Two important conditions have been found to be associated with underage drinking and delinquency: (1) restrictive parental attitudes towards underage drinking, and (2) youth involvement in structured leisure activities that may hamper underage drinking. Although the ideas come from our own basic research, previous studies support the strategy of utilizing parents to prevent underage drinking. Parents' restrictive attitudes towards underage drinking have, in several studies, been linked to underage drunkenness (Yu, 2003; Fergusson, Lynskey & Horwood, 1994; Bogenschneider, Wu, Raffaelli & Tsay, 1998; Ary, Tildesley, Hops & Andrews, 1993; Brook, Whiteman, Gordon & Cohen, 1986; Barnes & Welte, 1986; Hawkins, Catalano & Miller, 1992; Kandel & Andrews, 1987). Structured free-time activities have also been shown to play a role. Other examples of parental conditions related to underage drunkenness are the quality of parent-youth relations (Coombs, Paulson & Richardson, 1991) and parent/family management strategies (Barnes & Farrell, 1992; Peterson, Hawkins, Abbott & Catalano, 1995). Finally, as mentioned above, youths' leisure activities are also related to underage drinking (Mahoney & Stattin, 2000; Osgood, Wilson, Bachman, O'Malley & Johnston, 1996; Larson, 1994).

In this section, I will outline the original blueprints of the ÖPP. The ideas for the prevention program were outlined in a grant application to the Swedish National Institute of Public Health by Professor Håkan Stattin. Funding was granted by the Institute for three years. Although we tried to be faithful to the original blueprints of the prevention program, it soon became obvious that it was unrealistic to realize some of its components. Changes had to be made.

Program overview.

The ÖPP is designed as a prevention program aimed at reducing drug and alcohol use among youths. The intervention was designed to be community-based and universal, targeting all 13-16 year-olds in the communities in question. The approach chosen calls for collaboration between existing community bodies, e.g.

community leaders, youth activity leaders, the media, police, school personnel, and parents.

There were two inter-related aims of the intervention: to highlight the role of parents' restrictive attitudes to youth drinking, and to increase individual competence and reduce drinking through involvement in organized leisure activities. Ultimately, it was intended that the intervention would become self-sustaining and driven by the community. Accordingly, the objective was to create a program that persisted beyond and independently of the investigators' role in its development.

ÖPP: A six-component program

To reach the aims above, the strategy was to encompass six components. The ÖPP was designed so that all six components would function interdependently and collectively towards a reduction in youth alcohol and drug use. The original plan was as follows:

Program awareness and support

Help and support from parents, schools, youth activity leaders, and community leaders were required in order to implement the ÖPP program as a whole. It is essential to gain understanding and support for a project throughout the time it operates. Towards this end, all involved adults in the target community were to be informed about the intervention through information meetings, individual correspondence and the media. The initial information was to include a description of the project and its goals. Thereafter, continuous evaluation reports were to be utilized for preventive purposes. For example, restrictive parental attitudes towards underage alcohol drinking, drug use, and delinquency were to be emphasized. Likewise, information on available organized activities was to be presented quickly and effectively through different kinds of media.

Developing shared goals and values for youth behavior in the community

A kick-off meeting concerning the intervention was to be held at the outset of the project. There were three goals at kick-off. First, the seriousness of youth alcohol and drug use was to be discussed, as was what parents can do to postpone alcohol debut among their youths. Second, basic research findings related to the importance of organized activity involvement and parenting practices were to be presented. Third, a voluntary agreement on guidelines for youth behavior concerning alcohol and drug use, and also for other areas of interest (e.g. curfews, smoking, vandalism, truancy, etc.) were to be developed by the attending members. This agreement was envisaged as serving two functions: 1) providing the communities with a common frame of reference for the acceptable conduct of youth; and, 2) providing parents with guidelines for parenting and free-time activities, and helping them establish common rules. The investigators should provide relevant information about youth drinking, based on scientific evidence during the meeting, but should not dictate formulation of the community agreement.

Following the kick-off meeting, the agreement was to be disseminated to all parents individually, and publicly.

Leadership training

Following the establishment of common goals and values, as outlined above, the investigators would meet with the leaders of organized community activities. Their importance to the program was to be emphasized. Additionally, the activity leaders were to be informed about and encouraged to adopt the community's values. This was in order to ensure that all youths who participated in different free-time activities were given the same guidelines for conduct regardless of which activity they elected to participate in.

Individual correspondence and guidance

This component was to involve personal dialogue through correspondence with all individuals in the prevention condition. The communication was to be established through logbooks that would be sent back and forth between the research assistants and the students. To make sure the students really took time to read and write in the log books, they were to be given time to do so within their regular school classes. The objective was to make the youths aware of the kinds of situations or activities in which they felt good about themselves. Another objective was to gather information on what the youths really would like to do in their free time, and to get a sense of the obstacles to participating in existing organized activities. The personal communication would also provide an opportunity to give individual guidance on and promote awareness of existing leisure activities within the neighborhood.

Increasing organized leisure-activity involvement

At the outset of the project, participants were to be asked to report on their involvement in leisure activities. The reasons for a total lack of participation were to be evaluated (which was also done quantitatively in the component above).

Thereafter, teachers should discuss the importance of involvement in organized leisure activities with all parents. The bottom line was to give arguments and support to parents to encourage their youths to take part in organized free-time activities. The discussion should occur as part of regularly scheduled parent-teacher meetings. Parents were to be encouraged to talk with their youths about selecting an organized activity.

Next, all parents and students were to be provided with a comprehensive list of available activities in the community, the procedures for becoming involved, and the name(s) and phone number(s) of the appropriate activity leaders. The information package was to include an invitation to become involved in the organized youth activities that already existed.

The perceived barriers to involvement (e.g. financial, geographical, procedural, ability-related) identified by the students were to be discussed with community leaders and personnel. The investigators should work together with these groups to remove such barriers through community organization and reorganization.

Finally, representative activity leaders were to be invited to participate in assemblies in the schools concerning opportunities to participate in organized community activities. The assemblies were to be primarily informational, giving a description of which activities are available, when and where they take place, how to join the activities, and who to contact for more information. Students were to be encouraged to ask questions and voice current concerns about activity involvement. The assemblies, to be held once each school term, should evolve into small leisure exhibitions where students would also be given opportunities to try out some of the presented activities at their school, e.g. horseback riding, dancing and skateboarding. Also, video monitors were to be used to display the highlights of different activities. Possibly, the exhibitions would be extended to after-school hours on days when parent meetings were held at the schools.

New directions for pedagogy at the youth recreation centers

The youth recreation centers in the community were perceived as offering a unique opportunity for preventive efforts. Given that they had been identified as places where potentially problematic youths congregate during their free time, the setting represented an ideal context for intervention.

A new, broadly stated mission for youth recreation centers was planned in order to assist youths in finding pleasure in skill-building activities. This was first to be implemented by informing personnel at the youth recreation centers about the research findings on leisure activities. The objective was to initiate collaboration with staff to establish new ways in which the centers could provide youths with activities that promoted competence and skill development. This involved three inter-related steps.

First, youth recreation center personnel should help attending youth to discover their interests and talents. There is empirical support for the proposition that most youths have an interest in and/or would enjoy participating in some form of organized recreation (Csikszentmihayli, Rathunde & Whalen, 1993). Accordingly, the initial step was to assess which activities were of interest to youths at the youth recreation centers.

Second, youth recreation centers should use this knowledge to provide opportunities for activity involvement of a kind that is inherently interesting to the young persons. Staff is perceived as a very important resource for the prevention program, and where possible, youth recreation center personnel should direct the activities. Importantly, the activities provided should be formalized. This would include regular meetings and an emphasis on increasing complex skill building. In order for an activity to achieve skill-building, a participant's abilities must be balanced against the demands of that activity (Csikszentmihalyi, 1996). Thus, the task should require active engagement that is intense enough for the individual not to be bored, but not so demanding as to produce anxiety. Activities in which these conditions prevail tend to elicit feelings of competence and control, and a motivation to improve (Csikszentmihalyi, 1996).

Third, in cases where youth recreation center personnel could not provide the activities of interest, the center might serve as a connecting institution, linking interested youth to the appropriate organized community activity. This might be done either by informing youths at the youth recreation centers of the locations of desired activities in the community and the procedures for becoming involved, or by inviting specific community activity leaders to visit the youth recreation centers and recruit interested youths.

In short, in order to reach the goals of implementation, namely to highlight the role of parental alcohol-related attitudes and to promote individual competence through involvement in organized free-time activities, a comprehensive strategy was planned. First and foremost, it involved information to parents, schools, activity leaders and community leaders. In order to reach the objective of establishing shared goals, we were to present research and arguments on youth drinking. Here, the main purpose was to establish a common view on youth drinking on the part of adults in the community. The strategy also included training and practical information on how to present and live up to the common objectives. Two components were designed directly to target youths through direct communication. The purpose of one was to guide youths to realize the situations in which they really feel satisfied, and to show how they can experience this systematically through organized activity involvement. The other was to provide concrete examples of existing activities in the neighborhood.

Communicating with parents was considered important in order to make them appreciate the variety of existing youth activities in the neighborhood. This was to be done through parent meetings, the distribution of activity catalogues, and activity days and evenings at the schools. At the meetings, information on the role of restrictive parental attitudes was to be given. We also aimed to collaborate with the youth centers. Together with the staff at the youth centers, we wanted to examine what the centers could do in order to promote skill-building activities. The idea was to encourage the youth centers to provide demanded skill-building activities as regular activities. Also, if some of the desired activities did not fit the youth center format, we would advise youth center leaders to encourage youths to take part in those activities elsewhere in the community. The youth centers were to provide guidance on how to attend.

The Örebro Prevention Program: actual implementation

Some of the components of the prevention program were incompatible with realities in the communities and modified during the time of the implementation. Others were abandoned, e.g. the sixth component dealing with a restructuring of the youth recreation centers. Below, a description of what was actually achieved is given.

A prerequisite for the initiation and powerful implementation of a new policy in a community is to attain a broad consensus from representatives of the different levels within that community. With this in mind, we initiated several meetings with politicians and community officials in three prospective communities. In those meetings we gave presentations of our proposed aims and strategies. All officials and politicians in relevant key positions were approached and interviewed about the current situation within their organizations. They were asked about their perspectives on the proposed prevention program. We adjusted the program to suit the specific communities. When this was accomplished, we proceeded with the rest of the activities.

Community officials and politicians

With an updated agenda for the three communities, our first step was to present it to the highest local authority, the community board. The objective of this meeting was to get permission from the authority to work in the community. The community was asked to consider adopting the prevention program. They were told that adopting the program would not lead to any costs for them. Rather, the ambition was to implement a prevention program within existing organizations without internal funding, and, if needed, give suggestions for changes within these organizations. They were promised feedback at least once every year. If the community was willing to adopt the prevention program, they were asked to formulate a written statement about adopting the preventive idea. The three communities we approached accepted implementation of the prevention program as it then stood. When a solid agreement was formulated at this level, the school boards, teachers, parents and leisure activity leaders were approached.

School boards

There were four schools in three communities: two in city centers, one in a housing area, and one in a small town. The local school boards of the four prevention schools were approached, and had their say concerning the program and its implementation. They were presented with the prevention program and, in particular, their expected role in it. They were asked to state their opinion about how realistic it was that the prevention program could be implemented. All the schools to which the program was presented accepted, with varying degrees of enthusiasm, to take an active part. The head-teachers were promised progress reports on the program on a continuous basis.

Teachers

At ordinary teachers' seminars, the prevention program was presented to all teachers in the four schools. The teachers were encouraged to give their opinions on the program. Their involvement was described as providing public support for the prevention program. Specifically, we sought support for the suggestion that we wanted the teachers to explicitly promote active leisure time for their students. They were encouraged to be explicit about this to their students, and also in contacts with their parents, e.g. at the individual parent-teacher-student meetings that are held regularly on the schools' initiative.

Parents

Information about the prevention program was given to all parents in the three prevention communities. The first set of information was sent out by mail. It contained details of the program for parents, and included a brief program schedule and an overall presentation of its purpose and approach. A promise was given to the parents that they would receive feedback concerning the progress of the program at least once each term.

Youth leaders, including youth recreation center leaders

Early in the information process, efforts were made to reach youth leaders in clubs and organizations, and also the youth recreation center leaders. The youth recreation center leaders were easily identified, but the same was not true for the club/organization leaders. However, by making use of community-based registers of all organizations that received municipal funds, we obtained the names and addresses of the leaders. We mainly used regular mail to get information out to them, but, whenever possible, information was given orally at gatherings of youth leaders. These gatherings were initiated by the community.

Prevention arenas

In order to implement the prevention program, we focused on establishing collaborative working alliances in three parts of the community: *the schools*, *the leisure activity leaders, and the parents.*

Schools

Before any intervention component was implemented, we made sure that all school staff were informed about and understood the ideas and the logic behind the planned activities. This information was usually given during ordinary teacher conference time, but in some cases we gave lectures to teachers at teacher seminars.

One important goal was to create a school climate where *active leisure* was promoted. Our main purpose was to make use of the school as a platform from which parents could be reached, and from which other activities could be coordinated. We asked the class teachers for permission to participate in class meetings, and also gave information to the parents at these class meetings. The schools were also the place from which other activities and information emanated, which included *activity days* and the *log book*. The activity days were initially held during ordinary school days and took place both and out-doors in the schoolyard. The youth leaders and other active participants performed shows, made interactive demonstrations, and, where possible, gave students the opportunity to try out the different activities. Other kinds of presentations of youth activities included talks and exhibitions. The try-out activities ranged from pony riding in the schoolyard to checkers indoors. Later, we rescheduled the activity days to take place in the evenings. They were arranged alongside ordinary parents' nights, which served two purposes: first, it was easier to get youth leaders to participate, and second, parents were made aware of the variety in existing activities.

It was in the schools that the *log book* program was carried out. It represented a start to personal communication between the targeted youths and the researchers. The log book program started with an oral classroom presentation, where the two research assistants assigned to work with the log books presented themselves and explained the objectives of the program. The objectives were described as to support and foster the process of exploring personal interests, and to promote actions that actually activated these interests. Another objective was to provide information about available leisure activities in the neighborhood. The log books were arenas for personal communication. They were sent back and forth 18 times during two periods of eight weeks each. An advantage of collaborating with the schools on the log books was that students were given time during regular school classes to respond to the research assistants' personal comments in their log book. They had 20 minutes for each response within ordinary class time. Important qualitative information was received about how youths think and reason about their free time, what they do, and what they would like to do. Subjects and issues dealt with in the log book project were founded, for example, on open questions about what youths were doing and what they liked to do in their free time. The concept of "flow" (Csikszentmihalyi, 1996) was introduced. Questions were posed on what kinds of activities youths performed when they felt most alive or "in flow". In our responses, we gave individual guidance and suggested how the youths could cultivate their interests within existing local activities.

Leisure activity leaders

Information was initially mailed to a wide selection of leisure activity leaders. We made use of municipal registers of youth clubs/organizations. The main purpose of this information was to establish awareness about the prevention program among the youth activity leaders. This was crucial, because the program partly relies on increasing youths' involvement in organized activities. The activity leaders were informed about their important functions as role models and as important adult figures for their youth attendees. We decided that the clubs and associations that the ÖPP should collaborate with were clubs and associations that had an explicit and non-tolerant policy towards alcohol and drug use. Clubs and associations were offered help in formulating a drinking policy for their association/club, and practical advice was given on how youth leaders could improve their role as mature and responsible adults. This information was mainly given by associated partners to the ÖPP, including the county sport association (ÖLIF), a non-governmental organization that promotes and gives support to sports clubs and organizations.

In order to enhance awareness of existing leisure activities, we created and distributed an *activity catalogue,* in which a broad variety of local organized activities for teenagers were presented. The activities presented in the catalogue ranged from sports, arts and culture over to religion and politics. The catalogue was designed in an attractive format, and contained all the contact information needed to get in touch with a wide selection of local youth activities in each neighborhood. In fact, these booklets included almost all clubs or associations in each community. Much time and effort were put in to finding all possible organized activities for youths in the communities. Thus, the readers, parents and youths, got a full picture of structured leisure activities in their broader community. The catalogues were distributed by mail to all parents in the prevention condition. The catalogues were also readily available in the intervention schools. A new updated activity catalogue was published each year.

An important category of youth leaders consists of the *youth recreation center leaders*. We had difficulties setting up a working alliance with them, but, despite initial problems in establishing a sincere dialogue, we eventually achieved one.

We had intense and regular meetings, where we tried to convince them to reflect on how they were working and to suggest alternative activities. We tailor-made working materials to be used in boys' and girls' discussion groups. This material was customized from the original material that has been tested in earlier studies (Ferrer-Wreder et al., 2002). Altogether, more than 100 concrete modules were offered to the center leaders (a module being a specific activity that can be practiced on one or several occasions). Unfortunately, our collaboration did not lead to any changes in their work. After about one year of communication, we decided to abandon this component. We simply could not influence the center leaders' way of thinking, and they did not make use of our working materials. The main problem was *not* that they did not want to make use of the materials. They simply did not have time, and it was an ethical issue. To be able to take a group of 10 girls or boys to a discussion meeting means that one of two center leaders has to be absent for a considerable length of time, leaving the other center leader alone with 40-60 youths. A lack of personnel at the centers precluded any prevention work.

Parents

A massive information campaign towards parents was introduced. The information was provided in several ways and through different media.

School meetings

As well as explaining the background and the ideas of the prevention program, we shared some research results with the parents. We started the presentations by showing normative prevalence figures for youth drunkenness, figures similar to figures 4 and 5 in this dissertation. Many parents expressed their surprise that prevalence was higher than they anticipated. We also talked about the negative short- and long-term consequences of youth drinking. Furthermore, we talked about research findings concerning the association between parents' alcohol practices and youths' alcohol drinking. We advocated and advised the parents to adopt a restrictive stance towards their youths' alcohol drinking, trying to convince them that their attitudes can make a difference, and we suggested that parents should formulate clear and restrictive family rules concerning underage alcohol drinking. Providing information was the main objective of the *parent meetings,* which were scheduled once every school term. Furthermore, in order to make sure the information was made use of, we presented and recommended the parents to join together and formulate common rules for their youths in each class concerning issues they regarded as important. An example given to parents was to help each other to monitor their youths by notifying each other if they had knowledge that their youth's classmates were in trouble or were involved in risky behaviors, including alcohol and drug use. Other examples were to suggest a common time that youths should be home on weekend nights. We did not intervene in the exact formulation of the agreements made by the parents, but we asked them to consider adopting a formulation that stipulated a restrictive stance towards alcohol use among youths. The discussion took place in or immediately after the regular parent meetings at school. The activities targeting parents were carried out as planned.

The project staff attended all regular parent meetings, and thereby reached a majority of the parents directly. The parent meetings were used to repeat and to boost the key objectives of the intervention, which were to give parents incentives to support their youths' involvement in organized leisure activities, and to give parents arguments and tools to maintain a restrictive attitude to underage alcohol drinking. Whenever possible, the parents were presented with encouraging results from the ongoing implementations and evaluations.

A series of letters were sent out by mail to the parents. Some of the letters were ordinary information letters, where we updated the parents about the progress of the program. The letters were sent out shortly before the annual data collections. Letters were also sent out after every school meeting in which we participated. These letters gave, among other things, a summary of the content of the school meetings. In this way, all parents, including the ones who for various reasons had not attended a meeting, were given an opportunity to get information about what had happened at the meeting, including which consensus the attending parents had reached.

The activity catalogues were sent to all parents. Parents were explicitly asked to read the contents of the catalogues together with their youth.

The project staff also edited and printed information booklets that were mailed to all parents in the prevention condition. The information booklets contained research-based information on what parents can do to prevent problem behaviors among their youths. For example, we gave suggestions that parents should contact and get to know the parents of their youth's friends. Furthermore, we suggested to parents that they formulate and establish a non-tolerant stance towards alcohol and drug use. Parents received at least three mailings each school term. The letters were in some cases signed jointly with the head-teachers of the school, and in other cases signed together with the ordinary teachers. The research-based information and feedback given to parents were tailor-made to fit the specific schools. Below are some examples of specific content in the mailings to parents:

- Information about the guiding ideas of the prevention program, a brief overview.

- The importance of leisure for youths' psychosocial development and adjustment: what characterizes activities that are related to pro-social development?
- Information about how restrictive parental attitudes and practices concerning alcohol are related to underage drinking. Here, we let the parents know that what they do and think as parents really matters for their youth's behavior (based on results from empirical studies of the same parents).
- The potential power of shared goals and parental practices – proposing a consensus agreement. We stated the consensus agreement or another parent group's agreement.
- Activity catalogue. Here, we gave the parents an orientation towards structured activities that were available for youths of their youth's age in the neighborhood.
- The booklet "What can parents do?" Here, we clarified the possibilities raised by having clear family norms concerning alcohol and drugs, and also encouraged parents to bring up rules directly with their youths. We also encouraged parents to make contact with the parents of their youth's peers.
- Recent information about alcohol and drug use prevalence in their youths' schools. This information was based on the data collections that we conducted in the county before onset of implementation of the prevention program.

According to the original blueprints, most planned activities were actually carried out. In order to promote and thereby increase organized free-time activities among the youths, the following activities were conducted and initiated throughout the prevention program:

- Putting together and distributing an activity catalogue that was mailed to all parents, and keeping it readily available for students in school and at the youth centers.
- An initial kick-off meeting where free-time activities were promoted. This was actually carried out as several separate meetings, targeting politicians, the schools, free-time leaders and parents at the outset of the prevention program.
- Informing organization leaders, encouraging them to adopt the consensus agreements formulated by parents concerning non-tolerance to underage drinking in a free-time context.

- Individual guidance through log books; these school-based activities directed at youth were carried out as planned.
- Teachers informing parents about the importance of free-time activities during regular individual talks with parents every school term.
- Having free-time activity days targeting youth; these were held once each school term, and developed into activity evenings, thereby also targeting parents, since they were held in school during the evenings when parent meetings were being held.

We failed in our aim to re-structure the youth centers to be more open and promotive of organized and skill-building activities. The following activities were conducted in order to promote restrictive parental attitudes towards underage drinking:

- We attended parent meetings where we, as well as talking about the importance of encouraging youth to engage in organized leisure activities, also talked about the role of restrictive parental attitudes and their link to underage drinking at family level.
- At the above-mentioned meetings, the idea of consensus agreements among parents was presented.
- After each parent meeting, a concluding letter was sent home to all parents in the class, including parents who did not attend.
- In between parent meetings we also sent out brochures listing the existing supply of organized leisure activities locally. Those were sometimes signed by the prevention project leaders and/or the school head-teacher. In other instances, they were signed by the prevention project leaders only.

In addition to the above, the prevention program was presented in local media, such as newspapers and radio, where brief presentations of the overall aim of the prevention program were made.

Evaluation design

In order to evaluate and quantify the impact of the prevention program, an evaluation program was planned and carried out. All the prevention sites had a matched control site. The control sites were scrutinized beforehand in order to be good matches to the intervention schools. We made use of both official census data and our own data from a previous data collection (on drinking and norm-breaking), covering all youngsters in the entire county of the same age as our prevention group, in order to identify optimal twin sites to the intervention sites.

The criteria used to determine an optimal twin site were considered both on the level of the youths, e.g. youths' level of involvement in organized leisure activities, extent of delinquency, and alcohol use, and on a more social level, e.g. proportion of immigrants and the average education level of adults in the area.

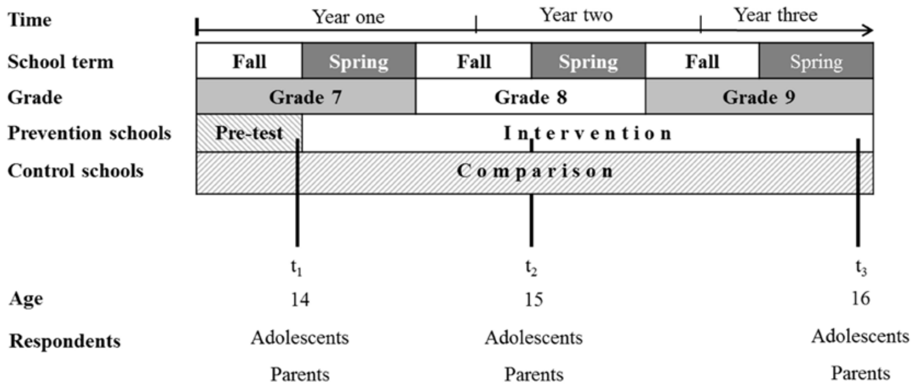

Figure 10. Evaluation design for the prevention and control schools.

The ÖPP was evaluated as a quasi-experimental prevention trial including matched control groups (Cook & Campbell, 1979). Before the implementation of the prevention program, a baseline was established. This baseline was drawn from parents' and youths' reports at grade 7 (pre-test). See Figure 10. We adopted an intention-to-treat approach. Parents and youths responded independently of each other. Implementation of the program was initiated after a solid baseline had been established.

Sample

Our aim was to design a universal prevention program that could be implemented in any community. Accordingly, the intervention was designed to make use of actors and facilities that were already present in different types of communities.

The implementation and the evaluation of the ÖPP were conducted simultaneously in three different kinds of communities. The reason for choosing different types of communities was that we wanted to test whether the program could be implemented in communities where upbringing conditions differed substantially. If the prevention program was effective, then we could be more confident that it would work in any kind of community, independent of size, family characteristics, and youth problems. Another reason for diversity was to test the impact of the program in the different communities in terms of ecological validity (Christensen, 2004). The communities chosen were labeled *inner city area*, *public hous-*

ing area and *small town*. All sites had their junior high schools (grades 7-9; ages 13-16) as the central analytic unit. Because the small town had two high schools, the implementation and evaluation of the ÖPP included four high schools and their matched controls. I will refer to the different sites by a letter (A to D) to indicate the particular school, and an additional letter (P or C) indicating the conditions, Prevention and Control. A is the inner city; B is the public housing area, C and D are the small-town schools. Table 3 shows the official number of students in the prevention and control schools for the different grades (ages). The school size is not uniform; the largest differences in the matched pairs are for the A and D sites. On the A site the control school is the biggest; on the D site the experimental school is the biggest.

Table 3. Total and relative numbers of parents in the control and prevention schools who participated in the data collections at grades 7-9.

	Grade					
School / Condition	7		8		9	
A / P	67	74.4%	78	82.1%	100	98.0%
A / C	101	67.7%	120	77.9%	126	84.0%
B / P	57	66.2%	45	56.9%	69	72.6%
B / C	59	59.5%	63	67.0%	67	75.2%
C / P	115	85.8%	102	76.7%	107	80.4%
C / C	107	75.3%	116	78.9%	108	76.1%
D / P	104	81.8%	101	70.1%	95	79.1%
D / C	49	72.0%	51	73.9%	56	81.1%
All	659	72.8%	676	64.6%	728	81.2%

Note: P = Prevention school; C = Control school. The proportions of control subjects at grades 6, 7, 8 and 9 were 46.4%, 51.1%, 51% and 50%, respectively.

Youths' and parents' participation in the evaluation of the prevention program was voluntary. At the outset, a letter about the purpose of the study and information on the voluntary nature of the program were distributed to all respondents. The possibility of not taking part in this evaluation was mostly utilized by the parents. Because the youths in the study were underage, the parents could choose to not participate themselves, and also stipulate non-participation for their youths. Of course, the youths themselves could decide not to take part even though their parents approved participation. In total, 60 (6.7%) parents and/or youth refused participation at grade 7; 129 (14%) refused at grade 8; and 92

(10.2%) refused at grade 9. The parents who refused participation were evenly distributed across all schools, and they were approximately equal in numbers in the treatment and control conditions (see Table 6 at page 91). Subsequent χ^2 analyses were found to be non-significant at all grades. However, at overall level, there were some significant differences (see Table 4).

Refusal to participate in the study was not the only reason for not being part of the evaluation. For youths, the major reason was absence from school on various grounds, in most cases sickness. In order to minimize attrition, I returned to the schools approximately two weeks after the initial data collection. Students who had not filled in the questionnaire the first time were asked to fill it in on the follow-up occasion. Tables 3 and 4 display the numbers and percentages of participants among the youth and parent respondents at site level. The peak in attrition among youths at grade 9 was, to a great extent, due to the fact that many students were in their job-shadowing period during this data collection. Because the data collection occurred late in the final high school term, it was hard, at some of the schools, to find a suitable time for the absent youths to be invited to fill in the questionnaires. The attrition peak among parents at the data collection at grade 8 was mainly due to the fact that parents who had refused participation at grade 7 were not asked to participate at grade 8. For the data collection at grade 9, all parents were asked again.

Table 4. Total and relative numbers of youth in the control and prevention schools who participated in the data collections at grades 7-9.

School / Condition	Grade 7		Grade 8		Grade 9	
A / P	80	88.8%	87	91.5%	84	82.3%
A / C	133	89.2%	125	81.2%	108	72.0%
B / P	73	88.3%	79	84.9%	48	50.5%
B / C	91	91.9%	75	79.8%	76	85.3%
C / P	120	89.5%	119	89.4%	112	84.2%
C / C	132	92.9%	122	83.0%	116	81.6%
D / P	117	92.5%	96	77.4%	100	83.3%
D / C	59	86.7%	63	91.3%	52	75.3%
All	805	89.9%	766	84.8%	696	76.8%

Note: P = Prevention school; C = Control school. The percentages refer to the numbers of participating respondents relative to the official numbers of students in the schools.

Although percentages of participants in the data collections in the three waves differed, the average participation scores for the prevention and control groups were very similar. The mean participation rate for parents in the prevention group was 76.9%. The corresponding mean for the control parents was 74.0%. The youths in the prevention condition had a mean participation rate of 83.5%. The corresponding figure for the control condition was 84.1%.

Procedure

Data collections

The evaluation of the ÖPP is based on both parent and youth reports; they filled in the questionnaires independently of each other. Parent reports were collected by mail; they were delivered to the home address, and then returned. No financial compensation was given. The self-report information provided by the youths was gathered at school during a regular school day. All data collections were preceded by a request for participation, and clarification that each collection was voluntary, i.e., that all subjects had a full right not to participate without having to give any reason for doing so. The respondents were assured that their responses were protected and confidential. No financial compensation to the students was given.

Research ethics

The planned data collections and the intervention content and design were approved by the Ethical Committee at the University Hospital in Örebro [500:16 585/99]. Before each data collection, parents received information about the study. The information did not explicitly show that the data collection was linked to the intervention; rather, it was introduced as part of a general developmental study. The parents in the experimental and control conditions received the same information. They were made aware that participation was voluntary; they could refuse participation in the study without having to justify their decision; and it was also made clear that their answers would be treated confidentially. They could also disallow their child's participation by returning a postage-paid card, or decline themselves by not returning the questionnaire. Youths were informed about the purpose of the study in the same way as parents; they were informed that participation was voluntary, and that their answers would be treated confidentially. Neither parents nor youths were paid.

Measures

Most of the measures used in this study were developed at the Center for Developmental Research, conducted by Håkan Stattin and Margaret Kerr (the PIs). I aimed at collecting roughly the same type of information from parents and youths for the evaluation. Parents and youths answered about the same kinds of questions, with only slight changes in wording.

Contextual information

Information gathered from the youth questionnaires included: gender; parental divorce; parents' and youths' places of birth.

Gender

Youths were asked "Are you a boy or a girl?" They answered by indicating whether they were a boy or a girl.

Caregiver status

Youths were asked: "What adults do you live together with?" The response options, among which they could indicate more than one, were: "together with mom and dad (biological parents or adoptive parents"; "with mom"; "with dad"; "with mom"; "with mom and a stepfather"; "with dad and a stepmother" "other relatives?"; "foster parents"; "orphanage"; "others, who ...?". The last response option was on a blank line where the youths could write their answer.

Youth place of birth

Youths were asked: “Are you born in Sweden?” The response options were: “yes” or “no, in … “. The last response option was on a blank line where the youths could write their answer.

Parents' place of birth

Youths were asked: “Where was your mother born?” The same question with the same response options was asked about the father. The response options were: “in Sweden”; “in another Nordic country”; “in another country, namely …” The last response option was on a blank line where the youths could write their answer.

Parents' education

Parental education was assessed from parent reports. The questions to parents were: “Which of the following is the best description of your education?” The same question with the same response options was asked about the father. The response options were: “compulsory school”; “vocational school”; “secondary modern school/residential college for adult education”; “college”; “university”.

Parental worries

The concrete question to the youths was “Are your parents worried that you will begin to abuse alcohol?”, and to the parents “Are you worried that your child will begin to abuse alcohol?” Both parents and youths answered on a 5-point Likert scale: 1. No, not at all, 2. No, not particularly, 3. Yes, to some extent, 4. Yes, quite a lot, and 5. Yes, very much.

Drunkenness

At all three assessments, youths answered the question, “How many times during the last 4 weeks have you been drinking beer, wine, or spirits to the point that you felt drunk?” They responded by writing a number on a blank line.

Parents' restrictive attitudes towards underage drinking

The question posed to parents was: Which of these four alternatives is closest to your view?

- “It is natural for children of our son's or daughter's age to be curious about trying alcohol. We trust that our son/daughter drinks in a responsible way.”
- “Children of our son's or daughter's age are adult enough to be responsible for their actions. If they want to drink alcohol they will, regardless of what parents do or say. We have given our son/daughter alcohol to drink at home in order to temper the excitement about it. From doing this, we have control over what they drink, and the risk that they will get illegal alcohol or drugs is reduced.”
- “We think it is totally unacceptable that our son/daughter drinks alcohol outside the home. On the other hand, it has happened/happens that our

son/daughter can taste wine or beer when we ourselves drink at a weekend dinner or something like that."

- "Children of our son's or daughter's age are way too young to concern themselves with alcohol at all. We think it is obvious that youths under 18 should not concern themselves with alcohol."

Parents' attitudes towards their children's leisure activities

The following question was asked to parents: "What is your general attitude towards leisure-time activities for someone your son's or daughter's age (leisure-time activities include going out with friends, going to friends' houses, and being in town during the evenings)?" Parents were instructed to mark one of the following response options.

- "With children of this age, you should absolutely let them do what they think is best. You should not interfere with what they do during their leisure time; children have to be able to do things without parents' intervening."
- "By and large, you ought to let them do as they like. You should only interfere when necessary. You should listen to what they say."
- "It is parents who ought to decide about children's leisure-time activities when they are my son's or daughter's age. You should keep yourself informed by regularly asking the child."
- "At this age, parents must determine the child's leisure-time activities. You should be able to insist that the children tell you where they are going before they go out, and tell you afterwards what they have done, where they have been, and with whom they have been."

Delinquency

Youth and parent reports. During grades 7, 8, and 9, youths reported the frequency with which they engaged in different kinds of delinquent behaviors during the previous year. A 20-item scale with three response options (1 = never, 2 = once, 3 = several times) was used. Questions included: "Have you been caught by the police for anything you have done?", "Have you purposely vandalized or took part in vandalizing things like windows, street lamps, telephone booths, benches, or gardens etc.?", "Have you cheated on a test in school?", "Have you, without permission, been part of scribbling, vandalizing with graffiti, or writing something in ink or paint somewhere, e.g. on a wall?", "Have you taken something from a mall, store, or newsstand without paying for it?", "At home, have you taken money that did not belong to you?", "Have you taken part in breaking into a home, store, newsstand, storage area, or building to steal something?", "Have you stolen something from someone's pocket or bag?", "Have you bought or sold something that you knew or suspected was stolen?", "Have you taken someone else's bike without permission?", "Have you taken another's car without permission?", "Have you taken a moped, motorcycle, or scooter without permission?", "Have you purposefully left without paying (e.g. at a café, theater, bus)?", "Have you taken part in stealing something from a car?", "Have you threatened or forced someone to give you money, cigarettes, or something else?", "Have you been part of a physical fight in the city?", "Have you carried a weapon in school or in the city?", "Have you been part of hitting someone so severely that you believe he or she needed medical care?", "Have you purposely hurt someone with a knife, stiletto, brass knuckles, or something like that?", and "Have you been part of threatening or forcing someone to do something he or she did not want to do?" The alpha reliability for the self-reported 20-item scale was .89 at t_2 (grade 7), .83 at t_3 (grade 8) and .94 at t_4 (grade 9). It was .72 for parent reports at grade 7, and .67 for parent reports at grade 9.

Involvement in organized activities

Youths were asked about their involvement in structured leisure activities, defined as: (1) occurring together with others in your own age group, (2) having an adult leader, and (3) meeting at least once a week at a regular time. Participants indicated which of the following types of structured community activities they were participating in during grades 7, 8 and 9 under the following headings: Sports, Music, Theater/Arts, Hobby Clubs, Church, Scouts, Politics, or Other. Structured activity participation was coded dichotomously (0 = no, 1 = yes). The participants were also asked to indicate how many nights per week they were involved in organized activities, as previously defined.

Parental knowledge

Parental knowledge was operationalized as parents' knowledge of their child's whereabouts outside home. Youths answered 9 questions about their parents' knowledge: "Do your parents: know what you do during your free time?", know who you have as friends during your free time?", "usually know what type of homework you have?", "know what you spend your money on?", "usually know when you have an exam or paper due at school?", "know how you do in different subjects at school?", "know where you go when you are out with friends at night?", "normally know where you go and what you do after school?"," and "in the last month, have your parents ever had no idea of where you were at night?" The alpha reliability for the self-report 9-item scale was .83 at t_2 (grade 7), .84 at t_3 (grade 8) and .86 at t_4 (grade 9).

Parents answered the same questions, with only minor changes in wording where necessary (e.g. "Do you: know what your child does during his or her free time?", "know who your child has as friends during his or her free time? ...").

Five-point Likert scales were used, ranging from almost always to never. Alpha reliability was .88 at t_2 (grade 7), and .94 at t_4 (grade 9). Data for this scale were not collected at grade 8.

Parental solicitation

Parents answered five questions to form the parental solicitation measure. “How often do you talk with your youths’ friends when they come over to your house?” “How often do you ask your youths about what happened during their free time?” “During the past month, how often have you started a conversation with your youth about their free time?” “When did you last have extra time to sit down and listen to your youth when he/she talks about what happened during their free time?” and “How often do you ask your youth to sit and tell you what happened at school on a regular school day?”

The alpha reliabilities were .69 at grade 7, and .79 at grade 9.

Parental control

The parental control measure comprised six items. Parents’ answered the questions: “Must your youth have your permission before he/she goes out during the nights of the working week?” “If your child wants to go out on a Saturday evening, must he/she inform you beforehand about whom he/she will be with, and also where he/she will be going?” “If your youth has been out past curfew, do you require that your youth explains why and tells who he/she was with?” “Do you demand that you know where your youth is in the evenings, who he/she is going to be with, and what he/she is going to do?” “Must your youth ask your before he/she can make plans with friends about what to do on a Saturday night?” and “Do you require that your youth tells you how he/she spends money?” Reliabilities were .88 for grade 7, and .94 for grade 9.

Caught the child drunk

A single question addressed to the parents was: “Have you caught your child drunk?” Response options were (1) never (2) yes, once (3) several times. This question was posed to parents during the data collections at grades 7 and 9.

Child’s bad reactions

Children’s bad reactions at home were measured on a six-item scale consisting of the following questions to and response options of parents. “What happens if you as parents tell your child that he or she cannot go out one night even though the child has an appointment with friends?”; the response options were: the child does not comply and goes anyway; the child argues and tries to convince you, but accepts a no and stays at home; the child starts a fight, sometimes going without permission, sometimes staying at home; the child complies and stays at home. “What is your child’s usual reaction when you tell him or her to stop doing things you do not like?”; the response options were: stops immediately; most often complies; sometimes complies; complies after several reminders; does not comply. "How does your child usually react when you want him or her to do something (chores) at home?"; the response options were: refuses; is hesitant, but complies after a while; helps at once. "What is your child's most common reaction when you as parents ask him or her to tell you what happened one night with friends?"; the response options were: is glad that you asked and happily tells you a lot; answers very briefly; answers after you have asked several times; gets angry and refuses to answer. "How do you think your child would react if you as parents wanted him or her to stop seeing certain friends?"; the response options were: would comply and stop seeing those friends; would argue and try to convince you, but would eventually accept; would start an argument, but would eventually comply; would not comply. "Does it happen that your child goes away or refuses to listen when you want to talk to him or her?" The response options were: no never; rarely; sometimes; quite often; very often. The alpha reliabilities for the parent-reported scale, based on z-scores, were .71 at grade 7, and .80 at grade 9.

Attrition analyses

Logistic regressions were used in attrition analyses to examine whether gender, parental divorce, parents' and youth's places of birth, parental education, or any of the other measures taken at baseline predicted dropping-out of the longitudinal sample. I selected participants who reported on drunkenness and delinquency at baseline (grade 7), which accounted for 99% of those who responded to the questionnaires. Then, I compared the ones who reported again at post-test (grade 9) with those who did not. Separate analyses were conducted for: (a) youths in the control group, (b) youths in the intervention group, (c) parents in the control group, and (d) parents in the intervention group. The analyses revealed that youths who dropped out of the study in the control group reported more frequent drunkenness at baseline than those who stayed in the study ($b = 2.06$, $p<.05$). In both the intervention and control groups, parents who dropped out had more lenient attitudes towards youth drinking than those who stayed in (bs = -.97 and -.98, ps<.05 for the intervention-group and control-group parents, respectively). This means over-reporting of strictness in both groups, but this should not affect differences between the groups.

Statistical analyses

I examined baseline equivalences between the intervention and control groups using t-tests for independent groups. To analyze changes in drunkenness and delinquency over time (grades 7-9) for the intervention and control groups, general linear modeling (GLM) for repeated measures was used. To examine gender effects, interactions between gender and time, and between gender, time and drunkenness (or delinquency), were included. When Mauchly's test of sphericity was significant, a Greenhouse-Geisser adjustment was applied. Where multivariate effects were significant, they were followed up by univariate ANCOVAs, examining post-test (grade 9) differences and controlling for baseline (grade-7) measures. To test for group differences in sporadic and frequent drunkenness, χ^2 analyses were used. I used two measures of effect size. One, Cohen's *d*, measures the standardized difference between the means of the intervention and control groups divided by the pooled standard deviation of the groups. Numbers Needed to Treat (NNT) were calculated to provide a measure of how many people would have to be treated in order to prevent one additional negative outcome. Finally, to determine whether the results might have been affected by differential attrition in the control and intervention groups, I re-performed post-test ANCOVAs after applying two separate data treatment strategies. First, I limited the sample to those with data at both baseline and post-test, and then randomly deleted some cases in order to match the numbers of heavy drinkers in the intervention and control groups at baseline. Second, I used the expectation-maximization function in SPSS to estimate post-test values for those who had participated at baseline but not at post-test.

The post-test values were estimated from information on all variables in the study at baseline.

Results

Comparisons between the prevention and control groups at pre-test

I start by reporting on the analyses conducted to establish whether the chosen control sites were equivalent to the intervention sites in relevant respects. I compared the prevention and control groups on the pre-intervention measures. The measures used are based on self-reports and parent reports collected at grade 7. I focused on five theoretical and empirical aspects: (1) restrictive parental attitudes towards underage drinking, (2) parents' level of education, (3) youth engagement in organized leisure activities, (4) drunkenness, and (5) delinquency.

Parents in the intervention group had significantly less strict attitudes towards underage drinking than parents in the control group at pre-test, M = 3.65 (SD = .51) and M = 3.78 (SD = .48), respectively, $t_{(649)} = 3.07$, $p < 0.01$.

Parents' level of education was measured by asking parents to indicate their highest level of education (see the Methods section). No differences were evident between the prevention (M = 3.29, SD = 1.31) and control group (M = 3.13, SD = 1.33; $t_{(665)} = -1.59$, *n.s.*). This indicates that, on an overall basis, the prevention parents and the control parents did not differ significantly regarding their level of education.

Comparisons of youth involvement in organized leisure activities were made using items tapping how many nights per week the youths were engaged in some kind of organized leisure activity. The questions were posed to the youths directly (see the Methods section). No significant differences were found between the prevention (M = 2.20, SD = .1.84) and the control group (M = 2.32, SD = 1.84; $t_{(593)} =$ .83, *n.s.*). Youths in both groups were on average engaged in organized activities more than two nights per week.

Underage alcohol drinking was measured on the basis of self-report questions to the youths. They were asked how often they had been drunk during the latest month. An independent samples t-test did not reveal any significant differences between the prevention youths at pre-test (M = .06, SD = .35) and the control youths (M = .07, SD = .37; $t_{(688)} = -.18$, *n.s.*).

Differences in delinquency between the prevention and the control youths were examined. No significant differences were revealed between the prevention (M = 1.14, SD = .20) and the control group (M = 1.13, SD = .22; $t_{(686)} = -.85$, *n.s.*) at pre-test.

From these analyses I concluded that the prevention and control groups in the intervention trial did not differ significantly with regard to underage drinking, delinquency, or youth involvement in organized leisure activities at pre-test. Nor did their parents' levels of education differ. However, the parents in the prevention group reported themselves to be more permissive towards underage drinking than the parents in the control group. Since the point of the intervention was to maintain strictness in the intervention group, this made the intervention more challenging.

Comparisons between the test sites

Table 5 presents the pre-test conditions regarding parent-reported restrictive attitudes towards underage drinking and their level of education at the four test sites. The table also reports on youth engagement in organized activities, level of drunkenness, and delinquency. At site level, a significant difference was found concerning parents' level of education. At site A, the prevention group had a significantly higher education level ($M = 4.05$, $SD = 1.19$) than its control group ($M = 3.46$, $SD = 1.25$; $t_{(194)} = -3.28$, $p > .001$). Underage drunkenness differed between the control and prevention conditions at site B. No-one in the prevention condition had been drunk at pre-test. This zero level was not matched in the control group ($M = .32$, $SD = .33$; $t_{(148)} = 2.18$, $p > .05$). Parents in the prevention condition at site C were more tolerant of underage drinking ($M = 3.64$, $SD = .47$) than parents in the control group ($M = 3.80$, $SD = .42$; $t_{(219)} = 2.53$, $p > .05$). Finally, parents in the prevention group at site C had a higher education level ($M = 3.03$, $SD = 1.19$) than parents in the control group ($M = 2.41$, $SD = 1.08$; $t_{(149)} = -3.10$, $p > .01$).

In summary, at aggregated level, the prevention and control groups differed only with regard to parents' restrictiveness towards underage drinking. The parents in the prevention condition were significantly more tolerant than the parents in the control condition. Comparing the prevention and matched control sites separately, there were virtually no *systematic* differences across the sites. No site was perfectly matched on all five matching criteria. No site differed on youth engagement in organized activities and delinquency. At two of the sites, parents' levels of education differed significantly; at one site, parents' restrictiveness towards underage drinking differed; and, at one site, drunkenness at pre-test differed between the prevention and the control conditions. In conclusion, although the matching was not perfect, there were no systematic biases with regard to the matching conditions.

Table 5. Mean levels of contextual characteristics on the prevention and control sites at pre-test. (continues)

	Total				Site A				Site B			
	Control		Prevention		Control		Prevention		Control		Prevention	
	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd
Parents' reports												
Parents 'restrictiveness to underage drinking	3.78**	.48	3.65	.51	3.79^{ns}	.49	3.73	.54	3.72 ^{ns}	.59	3.64	.48
Parents' level of education	3.13	1.33	3.29	1.31	3.46***	1.25	4.05	1.19	3.32^{ns}	1.32	3.17	1.42
Youth self-reports												
Organized leisure involvement	2.32^{ns}	1.84	2.20	1.84	2.32^{ns}	1.89	2.37	1.65	2.04 ^{ns}	1.70	1.68	1.86
Adolescent drunkenness	.07^{ns}	.37	.06	.35	.65^{ns}	.06	.32	.04	.32*	.33	0.00	.00
Delinquency	1.13^{ns}	.22	1.14	.20	1.14 ^{ns}	.26	1.18	.25	1.13 ^{ns}	.20	1.11	.124

Note: ***$p < .001$; **$p < .01$; *$p < .05$; ns=not significant.

Evaluations of the prevention program: Did it affect the targeted behaviors?

So far, with the exception of parents' restrictive attitudes towards underage drinking, we have concluded that there are no significant differences on relevant comparison variables between the control and the prevention group. In this section, I examine aspects of the preventive intervention that were hypothesized to lead to a decrease in drinking. This is a crucial test of whether the implementation efforts were successful in: (1) maintaining and reinforcing parents' restrictive attitudes towards underage alcohol drinking; and (2) increasing youths' engagement in organized leisure activities. I focus on the results from the analyses of parents' alcohol-related restrictive attitudes and youths' participation in organized leisure activities. The question is whether the parents and youths in the prevention group differed in these respects over time, relative to their untreated counterparts in the control group.

A repeated-measures GLM showed a significant main effect of time on restrictive parental attitudes, $F_{(2, 428)} = 4.46$, $p < .05$, indicating growing permissiveness with regard to underage drinking over the three years. There was a highly significant group (intervention versus control) x time interaction, $F_{(2, 428)} = 13.54$, $p<$

Table 5. (continued).

	Site C				Site D			
	Control		Prevention		Control		Prevention	
	m	sd	m	sd	m	sd	m	sd
Parent reports								
Parents' restrictiveness to underage drinking	3.80**	.42	3.65	.47	3.73 ns	.49	3.62	.54
Parents' level of education	2.98ns	1.37	3.01	1.25	2.41**	1.07	3.03	1.19
Youth self reports								
Organized leisure involvement	2.26ns	1.87	2.42	1.83	2.68 ns	1.99	2.08	1.87
Adolescent drunkenness	.04ns	.19	.11	.52	.17 ns	.75	.16	.57
Delinquency	1.11ns	.20	1.12	.16	1.14 ns	.17	1.18	.26

.001. As shown in Figure 11, parents in the intervention group maintained their strict attitudes over time, while those in the control group became more permissive. The repeated-measures model did not reveal any gender x time or gender x group x time interaction. Because comparisons at baseline had indicated significant differences between the two groups of parents, we tested the success of the implementation using ANCOVA, comparing the intervention and the control groups on parents' restrictive attitudes at post-test with the baseline measure of parents' restrictive attitudes as covariate. These analyses revealed that parents in the intervention group were significantly more restrictive than parents in the control group at grade 9 ($F_{(1, 503)} = 35.78, p < .001$).

Table 6. Total and relative numbers of youths and parents and tests of attrition between the intervention and control groups.

	Youths			Parents		
	Intervention	Control	χ^2	Intervention	Control	χ^2
Grade 7						
Official N[a]	437	458				
Participation[b]	393 (89)[c]	418 (91)	.41	339 (77)	312 (68)	7.26*
Grade 8						
Official N	445	464				
Participation	382 (86)	386 (83)	.82	316 (72)	346 (76)	1.15
Longitudinal participation[d]	317 (83)[e]	336 (80)	.01	256 (75)	268 (86)	10.59***
Grade 9						
Official N	450	450				
Participation	408 (91)	421 (93)	.14	367 (84)	341 (74)	8.06**
Longitudinal participation	339 (86)	366 (87)	.30	264 (78)	242 (76)	.01

[a]Students registered in the grade; [b]Registered students and their parents participating in the study; [c]Percentage of official N; [d]Baseline participants still in the study at grade 9; [e]Percentage of baseline participants;
* $p < .05$; ** $p < .01$; *** $p < .001$

Concerning participation in organized activities, the repeated-measures GLM showed a decrease in participation over time for the total group, $F_{(2,550)} = 9.61$, $p < .001$). This change was more pronounced for females, $F_{(2,550)} = 10.06$, $p < .001$. However, there was no difference between the intervention and control groups. Thus, the two aims of the implementation were not fulfilled. We did successfully influence parents' restrictive attitudes towards underage drinking. However, the intervention did not lead to any change in youths' leisure activities. Participation in organized activities did not change differentially over time between the youths in the control and prevention conditions.

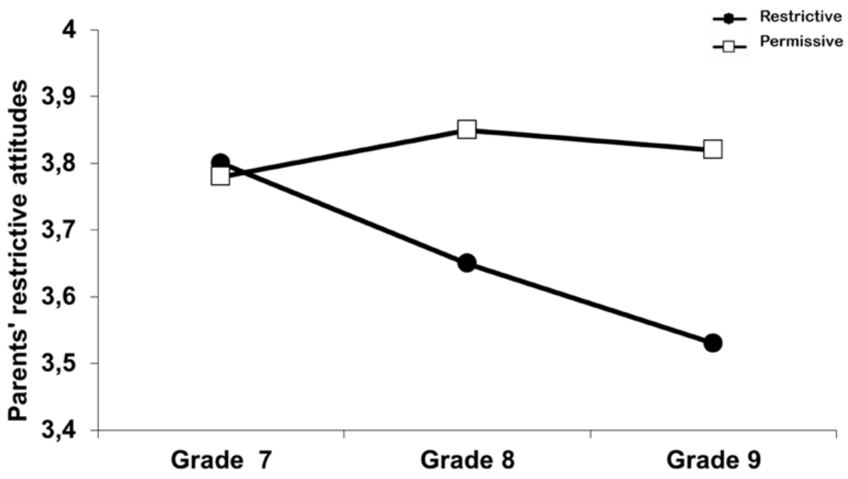

Figure 11. Mean levels of parent-reported restrictive attitudes at grades 7, 8 and 9 in the experimental and control groups.

Evaluation of program outcomes – Did the program lead to changes in underage drunkenness?

A repeated-measures GLM showed that youth drunkenness increased over time, $F_{(1.35,791.85)} = 86.50$, $p < 0.001$. As shown in Figure 12, the increase was steeper in the control group than in the intervention group, $F_{(1.35,791.85)} = 12.00$, $p < 0.001$. There were no time × gender or time × group × gender effects. Univariate analyses showed more drunkenness in the control group than in the intervention group at post-test, after controlling for baseline levels, with means of 0.45 and 0.96, respectively, $F_{(1,691)} = 21.38$, $p < 0.001$. Furthermore, the proportion of participants who had been drunk several times during the last month was twice as high in the control group as in the intervention group (27.0% versus 12.6%, $\chi^2_{(1,63)} = 2.58$, $p < 0.001$). Thus, the intervention seemed to reduce drunkenness and frequent drunkenness among both boys and girls.

Spreading effects – Did the prevention program lead to differences in delinquency?

A repeated-measures GLM showed an increase in delinquency over time, $F\ (_{1.28,\ 743,15}) = 44.37$, $p < .001$. The increase was steeper in the control group than in the intervention group, $F\ (_{1.28,\ 743.15}) = 19.11$, $p < .001$; see Figure 13. Although there was a significant between-groups effect of gender, $F\ (_{1,\ 583}) = 12.92$, $p < .001$, there were no gender x time or gender x group x time interactions. Univariate analyses showed higher levels of delinquency in the control group than in the intervention group at post-test, after controlling for baseline levels, $Ms = 1.20$

and 1.36, respectively, $F_{(1,690)} = 24.98$, $p < .001$. Thus, there is evidence that the effect of the intervention spread from use of alcohol to delinquency.

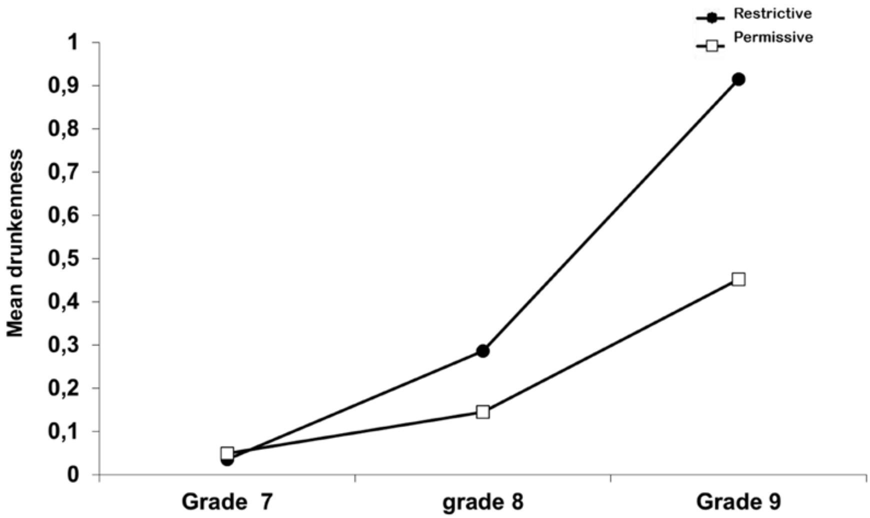

Figure 12. Results of the repeated measures ANOVA for self-reported drunkenness among youths in the experimental and control conditions at grades 7, 8 and 9.

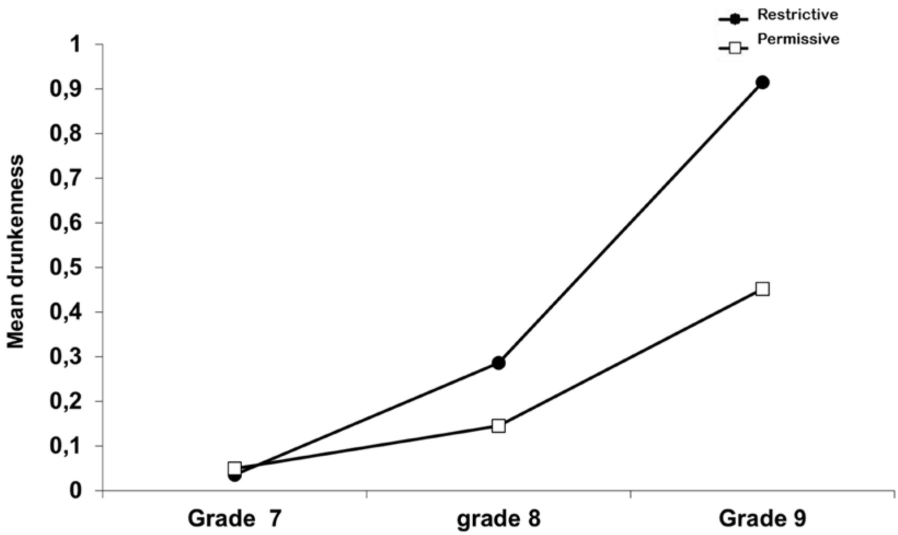

Figure 13. Results of the repeated measures ANOVA for self-reported drunkenness among youths in the experimental and control conditions at grades 7, 8 and 9.

Effect sizes

Since we had a longitudinal evaluation design with pre-test measures, calculated effect sizes could be adjusted for pre-test differences between the prevention and control groups. The adjustment is made simply by subtracting the pre-test effect size from the post-test effect size (Wilson & Lipsey, 2000). Using this technique, the adjusted effect size for the difference between the prevention and control groups at grade 9 was Cohen's $d = .35$ for drunkenness, and Cohen's $d = .38$ for delinquent behavior. This means that the relative group difference between the prevention and control groups for drunkenness is 17.5%, and for delinquency 19%.The Number Needed to Treat (NNT) was 7.7 for being drunk the previous month, and 7.1 for being drunk frequently. This means that 7.7 individuals need to be exposed to the invention in order to obtain one who benefits from it in terms of not being drunk even once the latest month, while 7.1 individuals need to be exposed for one not to be frequently drunk during the latest month. As reference, the Iowa Strengthening Families Program and Preparing for the Drug Free Years yielded NNTs of 9 and 18 on a measure of ever having been drunk at a four-year follow-up (Foxcroft, Lister-Sharp, Lowe & Breen, 2003).

Severity of risk and time of onset

There is a prevailing notion that universal programs only reach the average group of individuals who have moderate levels of problematic behaviors (Offord, 1996). It has also been argued that a universal content is typically too general and too broad to affect youth at risk (Offord, 1996; Le, Muñoz, Ippen & Stoddard, 2003; Gillham, 2003; Smith, Redican & Olsen, 1992). Consequently, it is assumed that targeted approaches, as in selective or indicated programs, are needed to prevent further problems among high-risk youth. This notion has empirical support from prevention trials on younger youths. Results suggest that youths with an elevated risk make the least improvement in programs that combine parent education and child skills (Kazdin, 1995a; Kazdin, Holland & Crowley, 1997). Other findings supporting this notion come from prevention trials where greater benefits have been evident among youths with moderate (Vitaro, Brendgen, Pagani, Trembley & McDuff, 1999) or low (Conduct Problems Research Group, 2002) levels of disruptive behavior. The only contradictory results from universal prevention programs that I am aware of are found in evaluations of the Life Skills Program (LSP). A recent evaluation includes the claim that the LSP had a positive impact on at-risk groups (Griffin & Botvin, 2004). A closer look at the study, however, revealed that these conclusions were operationally defined with reference to middle school students who had low school achievement and reported having friends who had tried drugs. Thus, from previous research, it should be expected that the largest effects of the intervention would be among youths with low to moderate levels of problematic behaviors.

A large literature exists on pathways into the establishment of persistent antisocial lifestyles. Such pathways have, among other things, been distinguished by timing of onset (Moffit, 1993a). Several theories include a high-risk, persistent pathway that begins in childhood (see Moffit, 1993a; Loeber, DeLamantre, Keenan & Zhang, 1998, for a review). Longitudinal research supports the notion that early onset of delinquency is an indicator of crime in adulthood (e.g. Mahoney, Stattin, Magnusson; 2000; Tolan & Gorman-Smith, 1998). Therefore, it is important to see whether youths with early onset of problematic behaviors also are affected by and benefit from the present prevention program.

So far, the results have been reported for the sample as a whole. However, the issue of subgroups is relevant, since research suggests that some universal prevention programs delivered in school or through the media are effective in maintaining abstinence among youths who have little or no experience of alcohol or drug use, but have smaller effects on youths who are already consumers at program start (Oetting & Beauvais, 1990). It is essential therefore to take a closer look at early starters, as well as youths with early onset of problematic behaviors.

Early starters

Being an early starter was defined as having been drunk at least once at baseline ($n = 148$) or being higher than the 80th percentile on delinquency at baseline ($n = 159$). As shown in Figure 14, drunkenness increased over time for early starters, $F_{(1.41, 118.41)} = 20.90$, $p < .001$. The increase was steeper in the control group than in the intervention group, $F_{(1.41, 118.41)} = 5.93$, $p < .01$. There were no gender x time or gender x group x time interactions. Cohen's d was .52 for drunkenness at post-test. Univariate analyses showed more drunkenness in the control group than in the intervention group at post-test, after controlling for baseline levels, Ms = 1.97 and 0.95, respectively, $F_{(1, 120)} = 7.69$, $p < .01$. In short, the intervention seemed to reduce drunkenness among early starters in drinking.

For early starters in delinquency, there was no significant effect of time, but there was a significant group x time interaction. As shown in Figure 15, youths in the control group increased in delinquency more over time than those in the intervention group, $F_{(1.25, 114.77)} = 5.83$, $p < .05$. Univariate analyses showed more delinquency in the control group than in the intervention group at post-test, after controlling for baseline levels, Ms = 0.87 and 0.65, respectively, $F_{(1, 126)}$ =

3.22, $p < .05$. Cohen's *d* was .32 for delinquency at post-test. In short, the intervention seemed to reduce delinquency among early starters in delinquency.

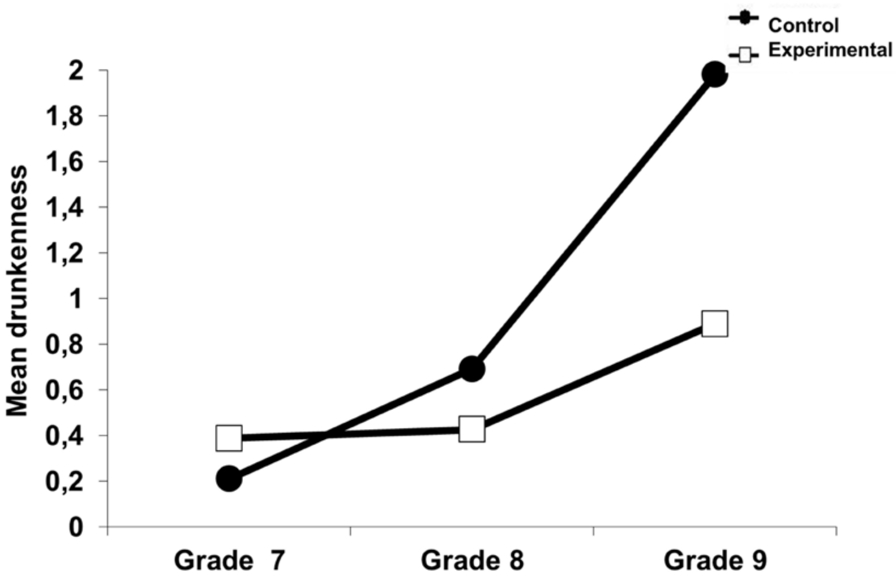

Figure 14. Results of the repeated measures ANOVA for a sub-sample of early starters in drunkenness and delinquency among youths in the Intervention and Control conditions at grades 7, 8 and .

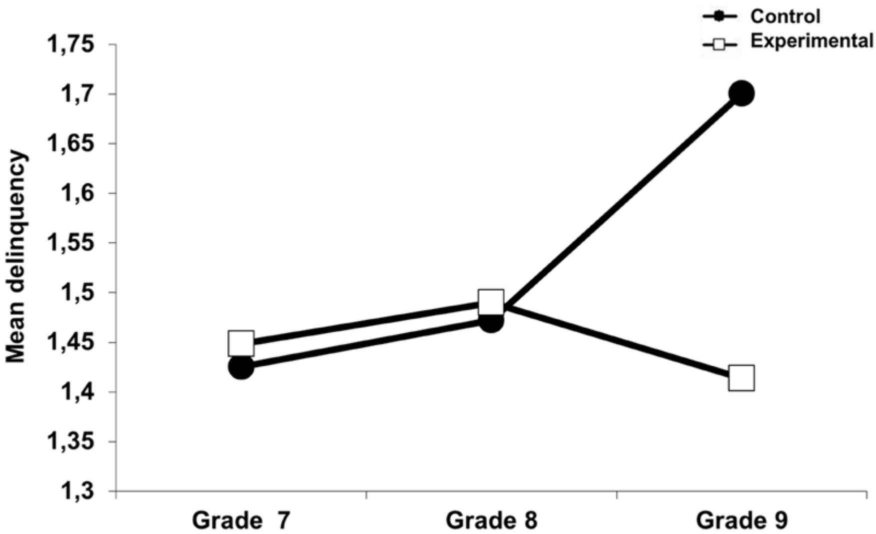

Figure 15. Results of the repeated measures ANOVA for a sub-sample of early starters in drunkenness for self-reported delinquency among youths in the Experimental and Control conditions at grades 7, 8 and 9.

Community type as a moderator

To test whether the intervention effects were moderated by community type (inner city, small town, housing project), I conducted an ANCOVA with post-test drunkenness as the dependent variable. Group and community type (coded as two dummy variables) and the group x community type interaction were found to be predictors. After drunkenness at baseline had been controlled for, the intervention effect was still highly significant ($F_{(1, 687)} = 12.95$, $p < .001$). There were no significant effects of community type and no significant interactions, suggesting that the program worked similarly in the three community types. A similar ANCOVA with post-test delinquency as the dependent variable also produced a significant intervention effect ($F_{(1, 686)} = 10.93$, $p < .001$). There were no effects of community type and no interaction effects. Hence, the intervention effects on drunkenness and delinquency were not moderated by community type.

Tests for bias due to attrition

Table 7 shows results from two sets of analyses that tested for bias due to attrition. These analyses were performed in order to reduce the risk of drawing wrong conclusions about program effects. Since I was aware that there was unequal attrition, in that more youths in the control group who scored high on drunkenness at pre-test dropped out of the sample, I employed two different control analyses. First, I limited the sample to include only participants who had complete pre-test and post-test data, after randomly deleting cases so that the numbers of heavy drinkers at pre-test were equal. Secondly I used the expectation-maximation function in SPSS to estimate the post-test values for those who dropped out. Values were estimated for all variables in the study at baseline. Using these measures, I re-ran the ANCOVAs. In Table 7, I include the original results of the ANCOVA on the longitudinal sample are included for comparison. As shown in the table, regardless of the method used to correct for attrition, the results differed little from the original. Only the group difference in delinquency for early starters fell below significance. Thus, the results do not seem to be much affected by differential attrition in the two groups.

Table 7. Mean levels for the intervention and control groups at post-test and the results of an ANCOVA controlling for baseline values in the longitudinal sample and in the sample after applying data treatments to account for differential attrition.

	F	*df*	Unadjusted group means: Intervention	Control
Longitudinal sample				
Parents' restrictive attitudes	35.78 ***	(1, 503)	3.81	3.46
Drunkenness	21.39 ***	(1, 691)	0.45	0.97
Drunkenness: early starters	7.69 **	(1, 120)	0.95	1.97
Delinquency	24.98 ***	(1, 690)	1.21	1.36
Delinquency: early starters	3.22 *	(1, 126)	1.55	1.81
Matched sample[a]				
Parents' restrictive attitudes	34.31 ***	(1,497)	3.81	3.47
Drunkenness	21.23 ***	(1, 687)	0.45	0.95
Drunkenness: early starters	7.48 **	(1, 116)	0.96	1.96
Delinquency	24.37 ***	(1, 681)	1.20	1.35
Delinquency: early starters	2.68	(1, 121)	1.53	1.77
Longitudinal sample with missing post-test measures imputed[b]				
Parents' restrictive attitudes	35.96 ***	(1,650)	3.74	3.47
Drunkenness	19.04 ***	(1, 810)	0.53	0.95
Drunkenness: early starters	7.15 **	(1, 146)	1.13	1.94
Delinquency	22.18 ***	(1, 808)	1.24	1.36
Delinquency: early starters	2.33	(1, 151)	1.61	1.80

**p*<.05; ***p*<.01; ****p*<.001; [a]Sample restricted to those participating at both baseline and post-test and then matched on numbers of frequent drinkers at baseline. [b]Sample including all baseline participants and with imputed values for those who had missing post-test measures.

Theoretical conceptualizations of the basic results

There are statistically significant and practically relevant differences between the prevention group and the control group with regard to alcohol drinking and delinquency. Because I have a quasi-experimental design with matched control groups, and can rule out pre-existing differences between the groups, I attribute the obtained differences to an effect of exposure to the preventive intervention. The critical question is, of course, whether such attribution is feasible.

The main objective of the intervention targeting the parents was to give information and incentives in a sufficiently clear and powerful way to enable them to maintain their restrictive attitudes towards underage drinking over time. The typical development of parental attitudes is that most parents are reluctant to give their youths alcohol when the youths are young, but that they become more lenient when the youths grow older. Hence, we expected parents' restrictive attitudes to be important in explaining any difference between the prevention and the control groups.

Explaining the intervention effect

One way of testing the importance of maintaining parents' restrictive attitudes towards underage drinking in explaining the intervention effect is to control for changes in parental attitudes between baseline and grade 9. If parental-attitude change is important, then the treatment condition per se would decrease in its predictive capacity to explain underage drunkenness, since parental attitude change competes as a predictor of drunkenness. I tested this in a hierarchical multiple regression analysis, using group (control vs. intervention) and change in parents' attitudes between grade 7 and grade 9 as predictors of drunkenness at grade 9. To adjust for skewness in the measure of parents' restrictive attitudes, I performed a natural-logarithm transformation of the parental attitude measures at grades 7 and 9. Next, I calculated a change score for parents' restrictive attitudes, by predicting the grade 9 restrictive-attitude measures from grade 7, and saving the residual. This residual was used in the subsequent analysis. In the hierarchical multiple regression analysis, the measures were entered in separate blocks. First, in order to test whether belonging to the experimental condition predicts drunkenness at grade 9, I entered the experimental condition as a predictor of drunkenness at grade 9. In the first block, group (intervention versus control) was found to be a significant predictor (ß $= -.12$, $p = .01$). This means that there is a significant difference between the prevention and control groups with regard to drunkenness at grade 9. In the second block, the measure of change in parents' restrictive attitudes was added. Both experimental condition and the residual change measure were entered simultaneously into the second block. As seen in Table 8, when both predictors are in the equation, only the change in attitudes contributes to explaining drunkenness (ß = -.11, p = .01), and group becomes non-significant (ß = -.09, p >.05). This analysis makes an important contribution to explaining the intervention results. Even though the model explains a limited part of the variance, it suggests that the intervention effect at post-test with regard to underage drunkenness was due to a change in parents' restrictive attitudes.

Table 8. Predictions of underage drunkenness at grade 9 from scores on parents' attitude changes towards underage drinking between grades 7 and 9 in the experimental condition.

	Step 1		Step 2	
	beta	sign.	beta	sign.
First step:				
experimental condition	-.12	**	-.09	ns
parental attitude change			-.11	**

Note. R^2 = .01: for step 1;ΔR^2 = .03
Step 2 (p < .01). ***p < .001; **p < .01; *p < .05.

There is an alternative way to interpret the results. The parenting literature suggests that parent' monitoring (their control and solicitation of youths´ activities outside home) affect youth problematic behaviors. Thus, it might be their monitoring, rather their attitudes, that mediates the link between the experimental condition and youth drinking. In order to test this alternative interpretation, I first examined whether parental solicitation and control predicted youth alcohol drinking at posttest. Parent solicitation was not related to youth drinking (r = -.002, *ns)*, but parental control was (r = -.12, p = .01). In order to test if parent solicitation mediates the link between the experimental condition and youth drinking,, I did a similar regression analysis as the one reported in table 8. In the first step the experimental condition was entered as a predictor, and in the second step experimental condition and parental control were entered as predictors. The results from the second step showed that parental control was a significant predictor (ß = -.10, p < .05), but there was still a significant influence of experimental condition (ß = -.11, p < .01). Thus, these results show that parents' control is associated with youth drinking, higher control is associated with less drinking, but parental control does not explain the link between the experimental condition and youth drinking. Hence, the alternative explanation does not receive support.

Are the effects of the intervention general or are they due to change in just a few parents in the intervention group?

Since we attempted to maintain the restrictive attitudes of parents of youths in some school classes over a transitional period during which change naturally occurs, I wanted to investigate whether the intervention affected the classes in the prevention condition systematically. If there is a general effect of the prevention program, then my interpretation is that we have established a consensus concerning parent restrictive attitudes towards underage drinking in the classes receiving the intervention. If so, it would entail a lesser degree of variability in parents' attitudes among parents in the prevention condition than among parents in the control condition.

Using the class as the analytic unit, I investigated variability in the restrictiveness of parental attitudes. I used the class variances (n = 38) as inputs, and tested the prevention and control classes at grade 9 with Levine's test for equality of variances. Levine's test indicated that the prevention and control groups differed significantly with respect to variance homogeneity. The mean variance of the prevention classes was .54, while the corresponding mean of the control classes was .88. (Levene's $F = 6.63$, $p > .01$). This suggest that, at average classroom level, the parents who received the intervention held more restrictive attitudes and the variation around the mean was relatively small. By contrast, at average classroom level, the mean of the parents in the control condition means was on the more permissive side, and there was greater variation. Overall, it can be concluded that the intervention had the effects that attitudes among the parents in the prevention condition were more restrictive at mean level, and that agreement between parents' attitudes was significantly greater in the prevention classes than among the untreated parents in the control classes.

Latent growth curve analysis

Since the ÖPP was delivered to groups of parents of youths who share the same classroom, the parents are not independent of each other; rather, they are nested or clustered in classrooms within the schools. This is a convenient way of delivering a prevention program, and perhaps the most common way when it comes to universal prevention. A methodological advantage of having clustered samples is that it makes it possible to avoid any contagion effects of the program. However, applying standard parametric statistical techniques, such as ordinary least square regression or ANOVA, to clustered data can be problematic, since it may lead to underestimation of variances and standard errors. Parametric statistical techniques typically assume independence of observations, an assumption that is violated in clustered samples. Dependency of observations may bias test statistics, such as variance estimates and standard errors, which might increase the risk of type-I errors.

Multi-level models are tailor-made to handle clustered data. The statistical models can be specified at individual and cluster level, and the models therefore provide accurate estimates of standard errors at different levels. Such techniques are particularly relevant when data are specific at both individual and cluster level, such as a classroom, school or neighborhood. Estimation of corrected standard errors and model-fit statistics using regular parametric statistical methods is efficient in providing unbiased test statistics when the variation due to clustering is relatively low (Muthén & Muthén, 2007). The corrections may not be efficient when across-cluster variations are high. In these cases, multilevel models are recommended. In sum, the effect of clustering on the data is a concern when deciding on the analytic technique to use.

Across-cluster variations can be estimated using intra-class correlation (ICC). But, in some data structures, cluster sizes may vary, and the variation in cluster size may complicate interpretation of the ICC estimates. A measure of the design effect can be used to assess the impact of clustering on the data. The design-effect estimate takes into account both the magnitude of the ICC and the average cluster size in the data set. The design effect formula is:

$$DEFF \;=\; 1 + (average\ cluster\ size - 1) \times ICC$$

There is a convention that a design effect equal to or higher than 2 indicates that clustering in the data needs to be taken into account in order to obtain accurate statistical estimates and draw conclusions (Muthén & Satorra, 1995). A design effect of less than 2 indicates that bias in a sample due to clustering is not substantially higher than in a simple random sample. According to Muthén and Satorra (1995), a data set with a design effect of less than 2 may be analyzed using corrected standard errors and model-fit estimates as an alternative to multilevel modeling. Corrected standard errors are robust in relation to clustering effects, and, in turn, protect against type-I error.

In this section, I report on a re-analysis of the intervention results using stringent techniques that takes the clustered nature of the data into account. In addition, I will use Latent Growth Curve (LGC) modeling, which provides for more precise estimation of change over time than the repeated-measures analysis of variance that I reported on earlier and in a separate journal article (Koutakis, Stattin & Kerr, 2008).

Clustering in the ÖPP Data

The ÖPP was implemented in 8 schools in a total of 38 classrooms. There were four schools in each of the control and experimental conditions. The control schools had 18 classrooms, and the experimental schools had 20. The numbers of participating youths and parents in the prevention condition with complete data on the three waves were 339 and 264 respectively, compared with 366 and 242 in the control condition. These figures represent 86% of the youths in the intervention condition and 87% in the control condition, and 78% of parents in the intervention condition and 76% in the control condition (Koutakis, Stattin & Kerr, 2008).

The small number of schools involved in the ÖPP does not permit a school-level analysis. The number of classrooms where the ÖPP was implemented is also insufficient to provide enough power to test for classroom-level effects. However, applying a multilevel modeling approach where the classroom is the clustering unit ought to provide robust estimates for program effects while controlling for across-classroom variations.

The main reason to prefer the classroom as clustering unit rather than the school is that the program was implemented in sampled classrooms within the schools. Since drinking and delinquency are influenced by peers (Dishion & Dodge, 2005; Kandel & Andrews, 1987), those behaviors should be more similar among classmates than they are to the behaviors of other students in other classes in the same school. A recent Swedish study (Kerr, Stattin & Kiesner, 2007) reveals that adolescents of junior high school ages hang out to a large extent with their classmates. About 50% of their self-reported peers and 60% of their most important peers comes from their own class. Thus, we may expect similarities within classrooms, and variations across classrooms. As a consequence, classroom effects should be taken into account in order to obtain unbiased estimates of the ÖPP outcomes.

As discussed earlier, ICCs and the design effect should be computed to make an informed decision on what data analytic technique is appropriate. The ICCs for parents' attitudes, youth drunkenness, and youth delinquency ranged between .002 and .012, suggesting low variations across classrooms. The design effects computed for each of these variables ranged between 1.15 and 1.49. These ranges of design effects suggest that robust standard errors are appropriate to adequately reduce bias due to the clustered nature of the data. I used the maximum likelihood robust (MLR) estimator, which provides standard errors, and a scaled chi-square test statistic that is robust in relation to the non-independence (clustering) of observations, in the MPlus 4.21 statistical software (Muthén & Muthén, 2007).

Specification of LGC models

There are several advantages to the Latent Growth Curve (LGC) modeling of longitudinal data with three waves of data collection in comparison with using repeated measures ANOVA. For example, LGC modeling allows the researcher to specify the exact time intervals between measurements points, as opposed to ANOVA where intervals between measurements are assumed to be exactly equal. In the current LGC analyses, precise measurement intervals were used. The data for the evaluations were not collected at equal time intervals. For simplicity of interpretation, the intervals in the analysis were converted into yearly units: baseline, 1.5 years after baseline, and 2.5 years after baseline.

Multi-group LGC modeling is recommended for the testing of the treatment effects of intervention programs with experimental designs (Cheong, MacKinnon & Khoo, 2003; Curran & Muthén, 1999). In multi-group LGC modeling, growth models for both control and experimental groups are tested simultaneously. The LCG approach allows the researcher to constrain estimates and compare model-fit estimates to test whether initial level and rate of change varies across the control and experimental groups. In the current analyses, three multi-group LGC models were fitted separately for parents' attitudes towards underage drinking, youth drunkenness, and youth delinquency.

Research questions

The following research questions were posed. First, were the levels of parental attitudes towards underage drinking; youth drunkenness and delinquency equal in the prevention and control groups at baseline? Second, were the developmental trajectories of parents' attitudes towards underage drinking different between parents in the two groups? Parents in the prevention condition were expected to maintain their restrictive attitudes towards underage drinking, whereas parents in the control condition were expected to become more lenient over time. Third, did the adolescents in the control group get drunk more often and become more delinquent over time than the youths in the prevention condition? We expected that the youths whose parents were involved in the program would report fewer episodes of drunkenness and lower levels of delinquency.

Testing program effects

Since we expected initial levels to be equal in both experimental conditions, we imposed equality constraints on the intercepts in both the baseline and the nested model. Because we had no hypothesis regarding the covariance between the intercepts and slopes we did not constrain covariances in any of the models.

In multi-group parallel-process LGC models, hypotheses are tested by imposing or releasing constraints on relevant parameter estimates (e.g. Cheong, MacKinnon & Khoo, 2003, Curran & Muthén, 1999, Muthén & Curran, 1997). For example, to address the first research question, we added an equality constraint to the intercepts of the growth models for both the experimental and control groups. If the baseline level of parental attitudes, drunkenness, and delinquency did not differ, the model with equality constraints would fit the data well. Following the same logic, equality constraints on the slope factors were added to test whether changes in parental attitudes, drunkenness, and delinquency followed a similar pattern in both the experimental and control groups. If the program was effective in altering parental attitudes, and reducing drunkenness and delinquency, the model with equality constraints would fit poorly, suggesting that the pattern of change in the experimental group had a different trajectory. A well-fitting model with equality constraints on slope factors suggests no significant group differences and thereby no program effects.

Program effects were tested in two steps. First, we specified a baseline model where the means of the intercept and slope factors of both groups were constrained to be equal for each of the three variables. Then, the variances of the intercepts and slopes, and covariance between intercepts and slopes were allowed to vary. Next, the constraint on the slope factor was released. The model fit estimates of these two nested models were compared using the Satorra-Bentler scaled chi-square difference test, which adjusts model chi-square for non-normality (Muthén & Muthén, 2007). A significant chi-square difference suggests that the model with freely estimated slope factors fits the data better; hence, the change trajectories in the control and experimental groups are different. A change in trajectory consistent with the expectation of an intervention effect suggests that the program had an effect on the target variable.

Before testing the program effects, we fitted a series of multi-group models with no equality constraints on the growth factors: intercepts and slopes. Both linear and quadratic growth models were compared on model-fit indices in order to determine which growth pattern fitted the data best. Linear growth models for parents' attitudes and youths' delinquency fitted the data best, whereas a quadratic model fitted the data best for adolescents' drunkenness.

Parents' attitudes towards youth drinking

As described above, an objective of the parent-directed activities was to maintain parents' restrictive attitudes towards underage drinking as their children grew older. Parents in the control group, on the other hand, were expected gradually to become more lenient towards drinking over time. Consistently, the linear LGC model with equality constraints on both the intercepts and slopes failed to fit the data with a significant chi-square model-fit estimate, $\chi^2(4) = 26.821$, $p < .001$. That is, attitude change followed different change trajectories for parents in the two experimental conditions. The model with a freely estimated slope coefficient fitted the data well, as was indicated by a non-significant chi-square model-fit estimate, $\chi^2(3) = 22.519$, $p = .472$. In addition, releasing the equality constraints on the slope coefficients improved the model fit significantly, as was indicated by a significant chi-square change in model fit, $\chi^2(1) = 88.242$, $p < .001$. This suggests that the pattern of change in parents' attitudes in the experimental group over time had a different trajectory than that of parents in the control group, and that there was no difference in the initial level of parents' attitudes at baseline (see Table 9).

Inspection of the growth estimates suggested that parents who were exposed to the ÖPP did not change their attitudes over time (.036, $p > .05$), but that the parents in the control group became more tolerant to teenage drinking (slope -.096, $p < .05$) over the same time period (see Table 10 and Figure 16). In addition, there were significant variations among parents in their initial level of attitudes in both the experimental (.076, $p < .05$) and control (.132, $p <.05$) groups, whereas rate of change over time increased the variation only among parents in the control group (.050, $p < .05$). Finally, there was no association between the initial level and rate of change in attitudes over time in either the experimental (-.020, $p > .05$) or the control group (-.011, $p > .05$).

Table 9. Model fit estimates for the constrained and unconstrained models and chi-square model fit comparison.

	Parents' Attitudes (N = 376)		Drinking[1] (N = 578)		Delinquency (N = 571)	
Estimates	Constrained	Unconstrained	Constrained	Unconstrained	Constrained	Unconstrained
Model fit						
χ^2 (df)	26.821 (4)	2.519 (3)	12.017 (6)	5.053 (5)	18.162 (4)	7.970 (3)
p	< .001	.472	.062	.409	.001	.046
CFI	.524	1.000	.937	.999	.917	.971
RMSEA	.174	.000	.059	.006	.111	.076
SRMR	.083	.025	.079	.054	.068	.041
Model fit comparison						
$\Delta\chi^2$/(df)[1]	88.242 (1)		6.742		6.386	
p	< .001		.009		.012	

[1] The growth pattern for teenage drinking was quadratic, unlike the patterns for parents' attitudes and adolescent delinquency, which were linear. In addition, the t1 measure of teen drinking was set at .001 due to negative variance extraction, which in turn increased df by 1.
[2] Because the models were tested using MLR estimators, which report scaled chi-square values, improvements from the constrained models to the unconstrained rate-of-change models were tested using the Satorra-Bentler scaled chi-square difference test.

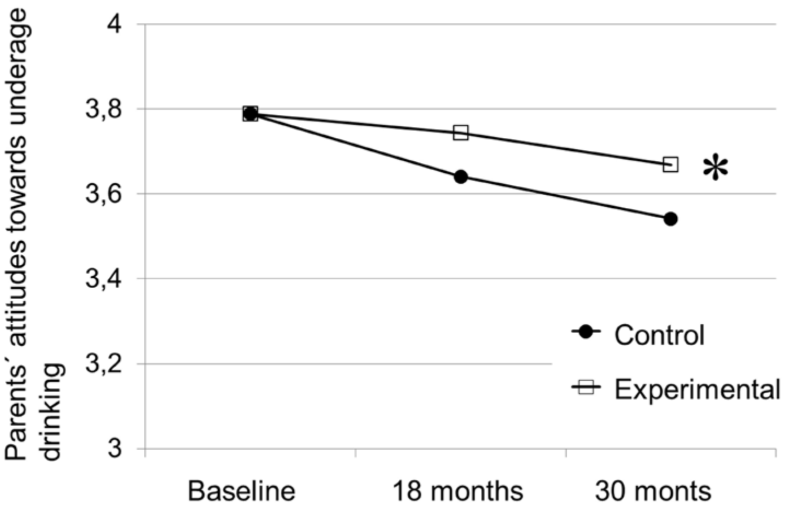

Figure 16. LGC model estimates of patterns of change in parents' attitudes.

* *Designates the significant simple slopes.*

In conclusion, parents in the prevention and control conditions did not show significantly different levels of parental attitudes towards underage drinking before the intervention started (see Table 10). This is inconsistent with earlier findings (Koutakis, Stattin & Kerr, 2008). The inconsistency is explained by the use of different n's due to the different analytic strategies. Parents in the control condition changed their attitudes over time and became gradually more lenient towards underage drinking, whereas parents in the prevention condition maintained their attitudes, which lends support to the ÖPP having a positive effect in terms of influencing parental attitudes towards youth drinking.

Table 10. Unstandardized growth factors, covariances and variances in the latent growth curve models.

Estimates	Parents' Attitudes		Drinking[2]		Delinquency	
	Experimental (n = 186)	Control (n = 190)	Experimental (n = 278)	Control (n = 300)	Experimental (n = 273)	Control (n = 298)
Estimates of growth components						
Initial level	3.789*	3.789*	.036*	.036*	1.118*	1.118*
Rate of growth	-.030	-.096*	.065*	.138*	.023*	.049*
Covariances						
b w. Initial level and slope	-.020	-.011	.001	.004	-.003	.008
Variances						
Initial level	.076*	.132*	.083*	.035	.033*	.012
Rate of growth	.016	.050*	.010	.040*	.002	-.001
Residual variances						
Time 1	.106*	.057	.001[1]	.002	.001	.013
Time 2	.105*	.268*	.347	.433	.015	.008*
Time 3	.193*	.274*	.918	1.039	.044	.159*

* $p < .05$
[1] Due to negative error variance, the variance of Time 1 teen drinking was fixed at .001.
[2] The pattern of growth in both control and experimental groups were quadratic with an accelerated rate of change from Time 2 to Time 3.

Adolescent drinking

We assumed that getting parents to maintain their restrictive attitudes towards teen drinking would lead to a decrease in underage drunkenness. Hence, over time, the adolescents of the parents who were exposed to the ÖPP were expected to drink less than their counterparts whose parents did not take part in the intervention. As expected, the quadratic LGC model with equality constraints on both intercepts and slopes provided a poor fit. This was indicated by a marginally significant chi-square test of model fit, $\chi^2(6) = 12.017$, $p = .062$, a relatively low CFI = .937, and a high SRMR = .079. The model with freely estimated slope coefficients fitted the data better, as indicated by a non-significant chi-square model-fit estimate, $\chi^2(5) = 5.053$, $p = .409$, and improved fit indices, CFI = .99, RMSEA = .006, and SRMR = .054. Also, a chi-square difference test of model fit showed that releasing the constraints on the slope coefficients improved the model fit significantly, $\chi^2(1) = 6.742$, $p < .01$.

The growth estimates suggested that adolescents whose parents were exposed to the ÖPP showed an increase in drunkenness over time, most pronounced from grade 8 to grade 9, as indicated by quadratic growth and a significant slope coefficient (.065, $p < .05$). On the other hand, adolescents whose parents were in the control group showed a larger increase in drinking (.138, $p < .05$); the increase was about twice as high as the increase in the experimental group: see Table 10 and Figure 17.

To further examine possible differences in the change patterns in drunkenness, a model that assumes quadratic growth for the control group and linear for the prevention group was tested. This model did not fit the data at all, $\chi^2(5) = 11.835$, $p = .037$, CFI = .920, RMSEA = .069, SRMR = .059, and its measured fit was no better than the model that assumed quadratic growth for both groups (estimates not shown in the table or figure).

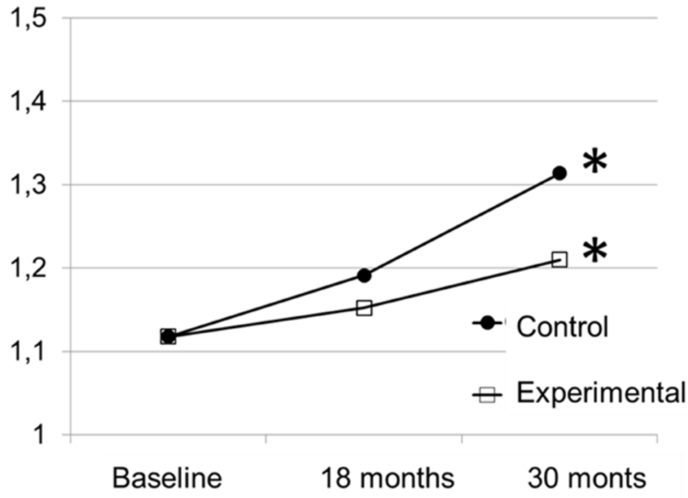

Figure 17. LGC model estimates of patterns of change in delinquency.

* *Designates the significant simple slopes.*

In conclusion, even though the youths in both experimental conditions increased in drunkenness over the course of the program, the increase was about half as large among youths in the prevention condition than among youths in the control group. This finding lends support for the effectiveness of the ÖPP intervention on youth drunkenness.

Delinquency

We expected group differences in delinquency as a consequence of the program's effect on drunkenness (Hair, Park, Ling & Moore, 2009). In line with this expectation, the linear LGC model with equality constraints on both intercepts and slopes did not fit the data, indicated by a significant chi-square model fit, $\chi^2(4) = 18.162$, $p < .001$, and poor relative fit indices, CFI = .917, RMSEA = .111, SRMR = .068). The model with a freely estimated slope coefficient, however, fitted the data better. This was indicated by a marginally significant chi-square model fit estimate, $\chi^2(3) = 7.970$, $p = .046$, and improved relative fit indices, CFI = .971, RMSEA = .076, SRMR = .041. In addition, releasing the constraint on the slope coefficient improved the model fit significantly, $\chi^2(1) = 6.386$, $p < .01$. This suggests that the level of change in delinquency among youths whose parents were exposed to the ÖPP was significantly different from that for the control group. There was no difference in the initial level of adolescents' delinquency at baseline (see Table 10).

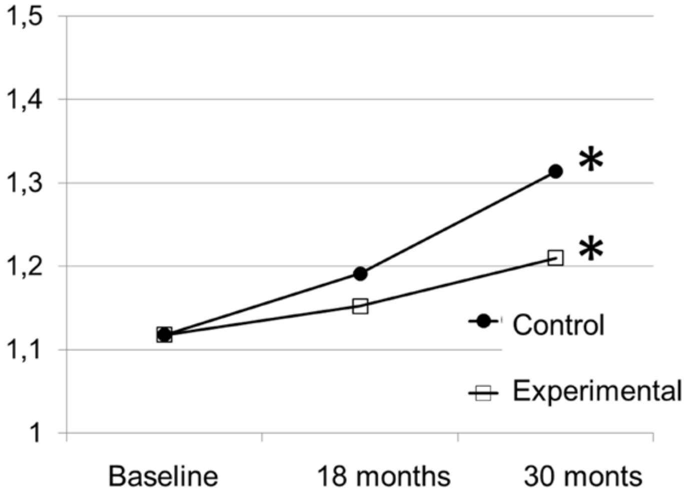

Figure 18. LGC model estimates of patterns of change in delinquency.

* *Designates the significant simple slopes.*

The growth estimates suggest that adolescents whose parents were exposed to the ÖPP intervention had a less steep increase in delinquency over time, .023, $p < .05$, than adolescents in the control group (.049, $p < .05$). The increase among untreated control youths was about twice as high as that in the experimental group, lending support for the presence of a spillover effect of the ÖPP intervention on adolescent delinquency (see Table 10 and Figure 18).

Conclusion

In the analyses above, LGC models were applied because they are tailor-made to handle clustered data of the kind in the ÖPP study. The main purpose of the analyses was to try to replicate the previously reported results that were based on ordinary parametric statistics. The results clearly show that the pattern of change in parents' attitudes towards drinking, teen drinking and delinquency from 7th to 9th grade were different in the experimental and control groups, and in the expected direction. Parents in the prevention condition maintained their restrictive view on underage drinking over time. Youth drunkenness and delinquency were less prevalent among youths in the prevention condition than among youths in the control condition. Hence, the main results of LGC modeling are identical to the previously reported results, based on parametric statistics. This suggests that the ÖPP had robust program effects.

Discussion

The time from childhood to adolescence is characterized by change in physical, cognitive, social, emotional, and behavioral domains. Individual change, or development, is a bidirectional process. Young people develop in social contexts, which affect their behaviors, at the same time as the contexts are shaped by the young people themselves. The family, and particularly, parents are perhaps the most important social context for most youths. The influence of parents is not expressed just in sheer imitation. Norms, attitudes, values, and expectations are transferred from the parent to the child (Lepper, 1983). There are large differences in how much parents try to influence their child. Some parents consciously try to shape their child, whereas others practice laissez-faire (Jenkins, 1996). Parents' parenting style is a reflection of parental characteristics, but is also influenced by the child's personality and behavior (Kerr & Stattin, 2003). An easy-going adolescent receives different kinds of attention and feedback from parents than a grumpy and ill-tempered adolescent.

Many parents are involved in and knowledgeable about their young child's whereabouts outside the home. The involvement typically diminishes as children grow older and want to decide themselves about their activities and peer associations in their free time. This is a natural developmental process, and it typically encourages the child to become an independent young adult. In most cases, parents are sensitive to the child's maturation and grant their youth's autonomy gradually, and in concert with his or her maturation. For example, most parents do not let their children have their own keys to the house and let them go home on their own in the preschool years. This responsibility, however, is not uncommon for 14 year-olds. The transferring of responsibility is often something parents and adolescents negotiate and decide on together. In most families this works fine, but in some it does not.

Parents of children in a typical school differ with respect to their parenting practices. The children in a typical school also differ in their ways of thinking, feeling, and behaving. If a systematic campaign designed to make all parents behave in a specific and uniform way, in this case in order to reduce future underage drinking, has taken place, effects over and above the already existing variations in parents' and youths' personalities and behaviors would be expected. This seems to be the case for this prevention trial. Parents in the prevention condition not only held stricter attitudes towards underage drinking, but also the variability in attitudes was considerably than among the untreated parents in the prevention condition.

Concerning underage drinking, we know from several studies that a lenient stance on the part of parents is related to more drinking and increased levels of drunkenness among youths over time, compared with a situation in which parents are more restrictive. In our discussions with parents in the ÖPP implementation, many parents said that they did not know that their attitudes to underage drinking had any impact on their youths, and many doubted that they did. A common idea that many parents expressed was that they, as parents, could take away the thrill or excitement of alcohol-drinking by letting their child drink alcohol at home, perhaps together with them. Hence, many parents tried to get their children not to drink by, in fact, letting them drink. This is a paradox. The available research rather conclusively shows that parents who have clear house rules against underage drinking are more likely to have children who drink less alcohol during adolescence. Giving the child alcohol at home is likely to undermine parents' attempts to express restrictive attitudes to underage drinking.

The logic behind the prevention approach

The research I present in this study paves a new way for understanding the role that parents can have in preventing youth drinking. First, the basic idea put forward is not one that presupposes changing parents' views on drinking. Rather than trying to *change* the attitudes and behaviors of parents, the idea put forward here is that parents should *maintain* the attitudes to youth drinking that they typically have when their children are in their early teens. Among parents in general, these attitudes *do* tend to change over time; that is, they become more tolerant of youth drinking. This is unfortunate, since parents' attitudes and change in attitudes are related to drinking among youths. Interestingly, the preserving-attitudes approach proved to work, and had effects even on youths who had already been drunk before the intervention began and those who had high levels of antisocial behaviors at age 13. Advocating restrictiveness to parents had substantial effects in reducing their youths' drunkenness and antisocial behaviors. This is probably because parents are legitimate authorities for most youths when it concerns youth drinking and norm-breaking behaviors (Smetana, 1994). However, that we showed strong effects among the "early starters" was certainly not expected by school personnel. There is a common saying among teachers that the parents they are most eager to reach at class meetings are the ones who do not show up. Between the lines, they are referring to parents of children who have problematic adjustment. Unfortunately, we were advised not to collect data on individual attendance at the parent meetings, and I cannot say anything about the truth of that saying. What I can say, however, is that parents of youths at risk benefited from the prevention as well as youths who did not drink initially or did not score high on delinquency. My explanation for this lies in our strategy of giving clear and easy-to-understand messages that were repeated over time, accompanied by letters that were sent out after each class meeting.

The first parent meeting at grade 7 is typically attended by most parents. This is due to a transition occurring between grades 6 and 7, and parents wanting to be informed about what this implies for their children. That we launched the program both in person and by mail at the first parent meeting at grade 7, and continued at all forthcoming parent meetings throughout the junior high school years, seemed to pay off. This is encouraging, particularly as it suggests that it is possible to achieve the ambitious goal of reducing drinking in a normal population with relatively small effort and within a tight budget. In light of the minimal effort and cost, the magnitude of our obtained effect becomes even more impressive (Prentice & Dale, 1992). The approach of putting efforts into maintaining parental attitudes throughout transitional periods may have implications in other areas as well. Figure 19 depicts both a normative trajectory and a trajectory influenced by an intervention. The normative trajectory is that parents become more lenient towards underage drinking as their children become teenagers (see Figure 7 on page 54). One objective of the ÖPP-intervention was to provide convincing arguments to parents to prevent this change.

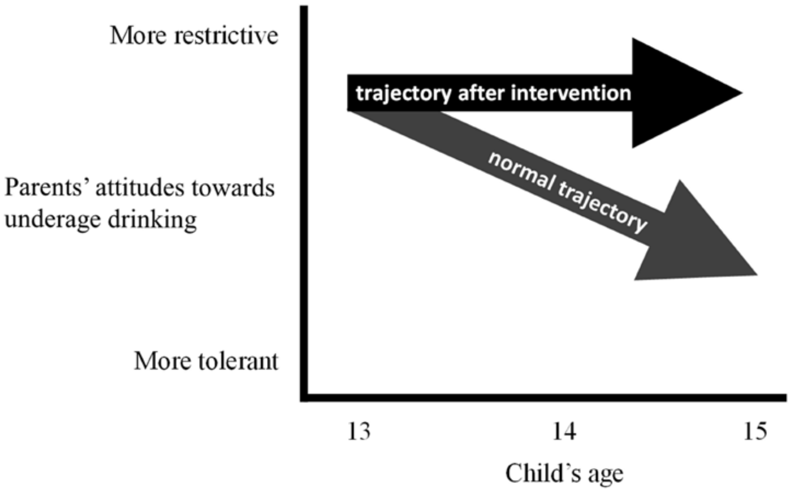

Figure 19. Normal trajectory, where parents change their attitudes towards underage drinking, and trajectory after intervention, where parents maintain their restrictive attitudes.

The background to this comes from the findings of basic research, where a strong relationship between parents' attitudes towards underage drinking and children's levels of drunkenness was observed. Many prevention programs strive to delay the onset of behaviors. The strategy of trying to "freeze" parental attitudes towards a behavior might be utilized in several other areas, in relation, for example, to delaying sexual debut, preventing tobacco use or violence, or decreasing truancy. Even though alcohol drinking and sexual behavior are normative among youths in our culture, engaging in high levels of problem behaviors and skipping classes are not regarded as normative and certainly not desired. Of course, the behaviors are different, but they have it in common that at certain ages they are predictive of problematic development. In so far as undesired child behaviors are related to parents' attitudes and behaviors, it might be worthwhile testing the ÖPP kind of strategy to prevent them. The fact that parents are legitimate authorities with regard to these kinds of behaviors makes this argument stronger (see Table 1 on page 29).

The results of the prevention trial showed clear differences in drinking and other problem behaviors between the youths who received the prevention program and their matched controls. These differences remained after controlling for pre-test differences between the groups. Sometimes, it is hard to explain in plain language the size of a difference between groups. In the case of this study, however, one of its outcome variables can be described in a simple way, namely the measure of drunkenness during the latest month. As seen in Figure 12, with regard to drunkenness, the mean difference between the groups was .47 at grade 9 – .92 for the control group and .45 for the intervention group, i.e., almost half a unit. In this particular case, a unit corresponds to the number of occasions the students were drunk during the latest month, which can be translated into a binge drinking occasion every two months. By contrast, the measure of delinquency is an aggregate of various behaviors, and it is more complicated to explain the size of the effect in a verbally meaningful way.

The ÖPP had quite substantial effects. The effect sizes were .35 for drunkenness and .38 for delinquency in the whole sample. As reference, Tobler's (1986) review of 143 drug prevention programs found an average effect size of .17 for alcohol drinking. Bangert-Drowns' (1988) meta-analysis of 33 programs found an average effect size of .22, and Rundall and Bruvold´s (1988) meta-analysis of 29 studies reported an average effect size of .12. The mean effect size for studies in meta-analyses reviewing more than 200 studies is .17. In conclusion, the effect sizes obtained for the present prevention program are considerably higher than for other comparable programs, many of which are extensively cited and used as templates for effective prevention. The studies in the cited meta-analyses are in Cohen's terminology low in effectiveness. Our program has the status of having medium effective in reducing drunkenness.[1] The effects on high-risk subgroups are quite high: .52 for underage drinking but, at .32, about the same as for the whole sample for delinquency.

The objective of implementation was two-fold. One goal was to maintain the restrictive attitudes towards underage drinking that parents typically have when their children are 13 years-old. This component was delivered through presentations during the school's regular parent meetings and through newsletters sent by mail. The other goal was to increase youth engagement in organized leisure activities. This was to be achieved through activity days in the schools, through the production of an activity catalogue where organized youth activities in the neighborhood were presented together with contact information, and through individual correspondence and a guidance program. Pursuing the goal of leisure-time involvement did not lead to an increase in participation in organized leisure-time activities. Although we worked intensely in order to reach an increase in organized youth-activity participation, we could not detect any difference in youth participation rates between the youths in the intervention and the control groups at the end. The reasons are probably manifold. It should be noted that attending club and organization events tends to decrease rather than increase in the high school years. Perhaps, the correct question is not whether youths want to engage in structured activities, but rather how willing they are to stick with the activities that they are already engaged in before high school (Persson, Kerr & Stattin, 2007). Potentially, rather than trying to encourage youths to take part in *new* free-time activities, a better strategy for us would have been to try to convince youths to continue being involved in the structured activities that a majority of them were already involved in at the beginning of high school.

The prevention literature provides several examples of well-conducted and structured prevention programs that have been shown to be effective after thorough evaluation. However, most of the well-known prevention programs in the literature target specific subgroups; that is, they are founded in a selective or indicated approach, and are typically delivered by trained professionals. These programs include Multisystemic Therapy, MST (Henggeler, Mihalic, Rone, Thomas & Timmons-Mitchell,1998), Focus on Families (Catalano, Gainey, Fleming,

[1] Delinquency measures were not included in the above-mentioned meta-analyses.

Haggerty & Johnson, 1999), The Incredible Years Series (Reid, Webster-Stratton & Beauchaine, 2001), Brief Strategic Family Therapy (Szapocznik & Williams, 2000), Reconnecting Youth (Eggert, Thomson, Herting & Nicholas, 1995), Functional Family Therapy (Alexander et al., 1998) Multidimensional Treatment Foster Care (Chamberlain & Mihalic, 1998), and Multidimensional Family Therapy (Liddle, Dakof, Parker, Diamond, Barrett & Tejeda, 2001). The Örebro Prevention Program stands out from those programs in two ways. First, the ÖPP is universal; it targets all youths, including high-risk subgroups. Second, the preventive content of the ÖPP is designed to be delivered by trained adults and does not require any formal expertise (such as a formal education in social work, psychology, or psychiatry). Consequently, the ÖPP reaches a larger group than the selective or indicated programs mentioned above. The program is delivered by trained professionals, i.e., teachers or other personnel at school, as part of their regular tasks. This makes the ÖPP easy to implement and cost-effective.

Although we chose a universal approach to delivery of the program, its benefits were not restricted to "average" youths. Indeed, the biggest effects of the intervention were found among adolescents at risk. Another universal program, the Life Skills Program (Griffin & Botvin, 2003), also claims to affect high-risk groups. However, the ÖPP's claim to do so is based on tougher criteria for defining a high-risk group. We conducted empirical studies of a subsample of early starters, i.e., of youths with *manifested* problem behaviors, rather than reported problems as in Griffin & Botvin (2003). The latter make up a relatively large group of youths who are *expected* to be at risk because they do not do well in school, or because they have friends who have tried drugs (Griffin & Botvin, 2003). I argue that there is an important difference between showing that a program has actually changed a drinking trajectory that has already been embarked upon and affecting youths deemed to be at risk in general on the basis of their school achievement or peer characteristics. Our results are to some extent in line with other research from the prevention literature, which shows that universal school-based prevention programs can yield the largest effect sizes among youths displaying a problematic behavior. Similar effects are reported for at least two programs: the Good Behavior Game (Kellam, Ling, Mersica, Brown & Ialongo, 1998), and the Linking Families and Teachers program (Reid, Eddy, Fetrow & Stoolmiller, 1999).

For most youths, parents are legitimate authorities and have a strong influence on their alcohol drinking (Ary, Tildesley, Hops & Andrews, 1993; Barnes & Welte, 1986; Bogenschneider, Wu, Raffaelli & Tsay,1998; Hawkins, Catalano & Miller, 1992; Hops, Ary & Tildesley, 1993; Van der Vorst, Engels, Meeus &

Dekovic, 2006; Van der Vorst, Engels, Dekovic, Meeus & Vermulst, 2007; Yu, 2003; Fergusson, Lynskey & Horwood, 1994; Smetana et al. 2006). This is a central point to our prevention approach. Most studies that reach this conclusion have been cross-sectional, and have merely reported associations between parental and child characteristics. They offer little insight into causality. Longitudinal studies are more informative in this respect. Causality, or at least the temporal order of the appearance of parent and child characteristics, can better be examined. But there is conceptually a difference between trying to understand what parents *actually do* when they are faced with youth drinking, and what they *can do*. In most longitudinal studies, it is answers to the first question that researchers seek. Using cross-lag designs, or by other means, it is possible to determine whether associations between parent and youth characteristics are primarily driven by parents or youths, or both. If parental influences are significant, the correlations suggest that what parents do has an impact on youths' behaviors. Here, by adopting an experimental approach, we obtained better insights into what parents *can do* to impact on their youths' drinking. Using a quasi-experimental design, I manipulated parental attitudes in order to obtain an effect on a youth behavior. My focus has been more explicitly on the question "What *can* parents do?" This experimental, longitudinal design has revealed that it is possible to affect parents' attitudes, and that such manipulation has consequences for their children's drinking and delinquency. In this way, the present design is potentially stronger than ordinary longitudinal studies of normal samples, since these at best only give indications of what parents typically do.

Why does the ÖPP work?

Several prevention trials aiming at preventing youth drinking have been reported in the research literature. Some have proven to be successful, others not. According to a Cochrane literature review, when applying strict criteria, there are very few prevention trials in the literature that have been proven to be successful (Foxcroft, Ireland, Lister-Sharp, Lowe & Breen, 2003).

The ÖPP is a specific program that targets specific issues. The program makes use of a simple implementation design and focuses on just one problem behavior – youth drinking. The preventive message, to parents, is very straight-forward and simple to understand: Make your non-acceptance of underage drinking clear. For parents of a school class, this message entails sticking to existing attitudes to youth drinking, and trying to reach consensus on common practices and rules, such as not providing the children with alcohol, or having common curfew times, or agreeing to notify each other if any of the children are seen in undesired situations. These issues are not controversial; hence, they are fairly easy to introduce and obtain acceptance for among the ordinary parents of youths.

The implementation of the ÖPP was effected following approval at central level with the school boards and politicians. The ÖPP was delivered as a natural ingredient in the ordinary parent meetings to which all parents are invited and expected to attend. All parents received mailings after each parent meeting. In this way, we reached all parents, not just a selective subsample. The evaluation was based on the total sample, i.e. the parents and youths registered as belonging to a certain school, regardless of their participation in certain parent meetings. This procedure is very different from the normal procedures adopted when offering prevention to the public, where the effectiveness analyses are based on those parents who express an interest in the program.

How does the program idea fit in with developmental theories? According to social control theory and Moffit's theory, a successful implementation is one that entails that social control in the community or neighborhood will increase. If this goes together with youths having good relations with their parents and other adults, it will mean that youths who violate the explicit norms run a risk of jeopardizing those good relations. As a consequence, relatively few youths will become early starters. This is a goal per se, but achieving that goal also means that there will be fewer delinquent role models for the large group of *adolescence-limited* youth offenders who might be *ensnared* into committing acts that may have negative long-term consequences.

One way of viewing prevention programs is to perceive them as units containing several ingredients or kernels. Kernels are defined as the smallest scientific units in proven methods to influence behavior (Embry & Biglan, 2008). Although the concept of kernels in preventive interventions had not been introduced when the present program was designed, we can identify at least one of the components of our program as a kernel. The ideas behind our implementation plan can be interpreted in terms of Embry's and Biglan's concept of kernel. Simply stated, our implementation consisted of a few components that we thought of as active ingredients in decreasing underage drinking. One consisted in the activity fairs at school that had the objective of increasing the interest in and eventually the involvement of youths in organized leisure activities. Another was the idea of consensus agreements among parents at the class meetings in school. A third was the specific information given to parents to maintain their attitudes towards youth drinking. Some of the components were found to be successful, whereas others were not. For example, the activities that were intended to stimulate involvement in organized activities did not result in the desired effects. Because the intervention was thought to operate as a treatment in its totality, we did not design the evaluation to capture the unique effects of each active ingredient separately. Therefore, we cannot be totally confident about the relative contribution of each ingredient in the prevention program. However, there is at least one kernel in the implementation that has been shown to live up to the definition, which is that inter-parent communication leads parents to maintain their restrictive attitudes towards underage drinking. It seems that achieving this goal explained the intervention results.

It is one thing to conclude that a prevention program is effective, and to demonstrate differences in drinking habits between experimental and control subjects. It is another thing to explain why and through which mechanisms a program obtains positive results. I have tried to explain and empirically test how and by which means our prevention program worked. The prevention results seem to be explained by the successful attempt to maintain parents' restrictive attitudes to alcohol over time. The significant difference found in youths' drunkenness between the prevention and control groups became insignificant after I controlled for changes in parents' attitudes towards underage drinking.

Another central issue to be discussed is that relatively few parents seem to be worried or concerned about underage drunkenness, which is true even among parents who have first-hand experiences of their child being drunk. This represents a challenge to prevention programs that are designed to work through parents, because if parents are not concerned about a particular matter, they are not likely to be motivated to try to prevent the occurrence of it. A successful program that targets parents needs to operate as a strategy, in a sequence of steps. A three-step procedure for preventive work involving parents can be outlined, and was part of the implementation the ÖPP.

First, *open parents' eyes*. At the start of a prevention program, the program should focus its attention on making parents aware of the problems, even to the extent that negative emotions, like worry and anxiousness, might be evoked. This should be done before any specific preventive implementations are instigated. The purpose is to make parents more open to suggestions for change. It is often taken for granted that parents are spontaneously motivated to prevent their children engaging in norm-breaking activities. This assumption might be a reason for failure in implementing programs among ordinary parents.

We achieved this by informing parents about normal levels of underage drunkenness. We also brought up different aspects of why and how early drinking might be problematic, that it is related to accidents and violence, and that it has biological, social and other negative consequences.

Second, *empower parents' in their ways of thinking about norm-breaking activities* Parents can make a difference. There is a need to tear down parental misconceptions about youth drinking, e.g. that most youths drink and that it is impossible for parents to change the situation. At this step, parents should be made aware that their attitudes and behaviors do matter. If they are passive or permissive, increased drinking among their youths is likely. If they are active and restrictive, they may change their son's or daughter's drinking behavior. Arguments should be based on the available evidence in the literature on the parental role in youth drinking. At this stage, some parents' sense of powerlessness should be replaced with optimism and hope, i.e., positive emotions; parents have the opportunity to make changes if they aspire to them.

At this stage, we tried to empower parents by giving them information about their own role and what they can do, emphasizing that they as parents matter. I have brought up issues that challenge parents' views on normality. This is often referred to as a central issue in school-based drug education directed at youth. But the issue of majority deception is certainly evident among parents. They sometimes permit their youths to do things even though they have a gut feeling that tells them to restrict the behavior. One reason for this is that they may think that other parents typically think about the issues in different ways. When parents are open with each other and talk about their thoughts and concerns, they realize that they share many normative values. I instigated the process by bringing up the question about common rules. In the discussions, parents did not restrict themselves to alcohol-related issues, but they also talked about other issues, such as curfew times, and tobacco use.

Third and finally, *implement specific techniques*. Parents should be taught clear and simple rules about how to handle their youths' drinking behavior. Simple guiding principles aimed at connecting parental behaviors and positive outcomes for youths should be formulated. I provided parents with specific tools, such as parental consensus agreements, and encouragements to state clear and non-permissive house rules concerning underage drinking.

Why utilize the ÖPP approach?

The ÖPP is efficient with regard to time. It is not a tedious program that takes hours each week from the parents of teenagers. It takes place at ordinary parents' evening meetings in school, a well-established tradition in the school system with which parents are familiar.

ÖPP is cost-effective. A comprehensive review of available parent-support approaches in Sweden for parents of children aged 10-15, performed by the Swedish National Institute of Public Health (Bremberg, 2004) recommends Swedish communities to utilize two programs: one of them is the ÖPP; the other is an adapted version of the Iowa Strengthening Families Program (ISFP) (Molgaard, Kumpfer & Fleming, 1997). Independent reviewers have estimated the implementation cost of ÖPP to be equivalent to 8.9 euros per person. The other recommended program has an implementation cost that exceeds ÖPP by 500% (equivalent to 44.4 euros) (Bremberg, 2004, p. 229). Hence, it is not surprising that the ÖPP has become the most popular parent-support program in Sweden. It is reported that 65% of Sweden's municipalities made use of the ÖPP in 2008 (Swedish National Audit Office, 2010).

The ÖPP has been shown to have a substantial effect in delaying the debut of drunkenness and decreasing levels of delinquency among participating youths, as compared with equivalent youths in the control condition. This effect is not limited to the vast majority with an average individual risk profile, but also includes individuals with elevated risk, e.g. with early onset of drunkenness or other problem behaviors.

The ÖPP has features that have been identified as important for reaching out and spreading in society. These features were identified by Rogers (1995) in his classic work *Diffusion of Innovations*, and jointly serve as a template for many professionals concerned with the implementation of new ideas and practices in society. Features that enhance dissemination include having a method that is perceived to be simple and easily tested. Other important features are that the proposed method has advantages over existing practices, that it fits into existing traditions and organizational structures, and that it addresses an important problem (Rogers, 1995). The ÖPP method is presented as a low-dose program that is easily presented in well-established forums, namely parent meetings at school. All teachers are expected to attend parent meetings on a regular basis, although they sometimes do not have clear ideas of the purposes of these meetings. Teachers and other youth workers typically perceive a need to have good dialogue with parents, especially if it can lead to decreasing levels of problem behaviors among youths.

Strengths and limitations

I made use of a longitudinal quasi-experimental design, including pre-test, intermediate, and post-test measurements. Four different junior high schools out of many available were approached. The choice of schools we approached was made thoughtfully on the basis of a county-wide data collection (n = 2,314) that had been launched a year before the pre-test. We picked out schools in three different settings in order to cover the most common school settings: inner city, housing area, and rural small town. An empirical verification of the matching was presented above, in discussing establishment of the baseline in the Results section. Thus, to my mind, I have about the best possible pairs of schools to compare. Furthermore, the statistical analyses involving the targeted behaviors, such as drunkenness and delinquency, controlled for initial differences. Consequently, I have controlled for possible sampling flaws. This procedure provides for greater control than that achieved by most of the intervention programs described in the literature. In some cases, when a randomized control trial (RCT) is performed, the randomization is often done at an aggregated level, such as school level, in a very limited number of settings. There may have been only ten schools to randomize from. In such cases, it is likely that the pairs of experimental and control groups obtained are different in relevant respects, even at baseline. These initial differences are sometimes neglected, and not taken into account in the post-test analyses. In randomizing, it has to be assumed that all entities in the randomization pool are willing to accept referral to the experimental condition. In other words, all the entities, schools in this case, have to be willing to adopt a concept presented by external researchers. It is rarely reported in the literature whether all the entities approached did accept, and, if not, what kind of randomization was undertaken to replace entities that, for whatever reason, had refused to participate. I argue that the present approach, with its thorough mapping of the county in question to select similar twin sites that represent different urban and suburban schools, and also to control for initial differences, is a viable way of properly testing a prevention program, especially since the schools that were matched all agreed to take part in the implementation and evaluation. Still, it has to be acknowledged that, despite, all our attempts to create comparable sites, the design does not meet the unbiased gold standard of a randomized control trial.

We had a nested design, where the program was implemented in classrooms that are nested within schools. We tested the intervention effects using latent growth models, where the clustered nature of the data was taken into account. These stringent analyses replicated the results based on ordinary analysis of variance. All analyses, at the individual level and when taking classroom effects into account, revealed the same main result pattern concerning change in parental attitudes, and youth drunkenness and delinquency from age 13 to 15. The changes were different for the intervention and control groups of parents and youths. This suggests a robust effect of the ÖPP.

We also inspected the variability in parental attitudes in the control and prevention groups, and found that the variability in alcohol-related attitudes was significantly smaller at class level in the prevention group than it was among the untreated control parents. Thus, we analyzed the program's effects at both an individual and a classroom level.

Another limitation is that I base my conclusions about the ÖPP-concept on a single preventive study – an efficacy trial. One must be careful in drawing firm conclusions, and replications are needed in order to rule out serendipity. In our case, however, it is unreasonable to presume that the results obtained are a sheer artifact. The results from the four separate implementation sites consistently show evidence of treatment effects as compared with their matched control sites. The results are also consistent with regard to affecting both underage drunkenness and delinquency. Nevertheless, our findings need to be cross-validated in new samples.

An independently run cluster randomized trial involving 40 schools in 11 counties throughout Sweden has just been completed (Bodin & Strandberg, in press). The prevention schools in the study were selected to make sure that they had had no direct contact with the program makers. The purpose of the study was to try to replicate results I have previously reported (Koutakis et al., 2008). The results from the study failed to replicate clear intervention effects. One year after program onset, one out of four theoretical attrition patterns yielded significant program effects for frequent drunkenness and being served alcohol at home, but not for weekly drinking or lifetime drunkenness. Thirty months after program onset a clear effect was revealed for being served alcohol in the home, but not for the other three outcomes. However, due to some problems with the implementation and data analyses, it is problematic to draw any firm conclusions from the results of this study. One reason to be careful concerns the statistical procedure adopted. Bodin and Strandberg used logistic regression with categorical data rather than continuous data, as in Koutakis et al. (2008). This restricts the outcome measures, and makes it impossible to report the degrees of treatment effects. But, most importantly, the dosage and quality of presentations were not adequate. The program dosage was lower than intended, since only 20% of the schools delivered program presentations to the parents. But perhaps the most problematic flaw of the study is that one-third of the ÖPP presenters were not properly trained in delivery of the ÖPP to the parents; only two-thirds were trained ÖPP presenters, one-third were not.

An experimental study conducted in the Netherlands (Koning, et.al, 2009) reported treatment effects on heavy drinking from implementation of a modified and shortened version of the ÖPP, paired with classroom education directed at youth. The shortened version as a standalone program did not yield effects on heavy drinking; nor did classroom education on its own. It was only when ÖPP was paired with classroom education that effects were found on youth heavy drinking. Two years after implementation, the combination of ÖPP and classroom education was found to have lowered the onset of weekly drinking by 10%. This study is not a direct test of the effectiveness of the ÖPP, since the intervention was short on dosage as compared with the original intentions of program; parents were given only two ÖPP-like presentations. Furthermore, the outcome addressed was heavy drinking, not a continuous measure of drunkenness. Nonetheless, the results from this study are interesting and challenging, especially because they are from the Netherlands, a country with a considerably more tolerant alcohol (and narcotics) culture.

Another Dutch study (Koning, van den Eijden, Engels, Verdurmen & Volleberg, 2010), using the same kind of design and the same modification of ÖPP, yielded theoretically interesting results. The ÖPP parental intervention made parents more restrictive towards underage drinking, both in attitudes and in rule setting, on parent-report measures. The combined intervention, similar to the one described above, made parents more restrictive towards underage drinking, both in attitudes and in rule setting, on both parent-report and youth-report measures. Youth-reported alcohol-specific rules and self-efficacy and parent-reported attitudes towards underage drunkenness mediated the association between the combined intervention and the onset of weekly alcohol drinking. Interestingly enough, there was no significant link involving the mediation of youth-reported attitudes towards alcohol use after controlling for perceived parental rules. Koning and colleagues (2010) discuss this issue, and suggest that just changing adolescents' attitudes may not be enough to prevent underage drinking, but perceived parental rules seem to be of great importance in delaying underage drunkenness. This line of reasoning gives support to the program idea of the ÖPP. A potential limitation concerns statistical power. This study was based on a limited number of participants, about 900 students who were followed from age 12 to age 15, as well as their parents. The study certainly would have had more power if it had included more participants, both youths and parents. However, the study was conducted within the scope of a doctoral dissertation with a limited budget. In our initial discussions about the scope of the study, we came to the conclusion that it would have been better to have conducted the intervention in a smaller number of schools, and have had control over implementation, rather than collecting data for a wider set of communities and schools, and having less say over implementation. We believe that our choice of intervention model gave us good opportunities to control all aspects of relevance to the study. For example, we are certain that we covered all major clubs and associations in the communities in our attempts to promote active leisure time. We were aware of the limitations of having small groups. For example, we envisioned that we would have had problems when breaking down the results and looking separately at subgroups, based, for example, on gender or ethnicity. Despite this, we believe that we generated data of good quality. The attrition rate was quite low, especially in comparison with other universal prevention studies. This is especially striking when looking at the high attendance of parents in our study.

The response options for the measure tapping parents' restrictive attitudes towards underage drinking are supposed to distinguish among four types of typical reasoning and related behaviors of parents. They range from a very relaxed and no concerned attitude over to a very clear and restrictive one. The most restrictive response option signifies a clear non-tolerant attitude. The other three options signifies different levels of more lenient attitudes. The third response option can be said to be restrictive, but since it allows for parents to give their children alcohol to taste at home, this response option does not signify clear and restrictive parents.

The response options for my measure of parents' restrictive attitudes mixes attitudes to youth drinking (from restrictive to permissive) and parental behaviors (from giving youths alcohol to taste at home to not giving). It is always risky to mix different aspects of human functioning into a single response option. However, pilot studies suggested that a pure attitude measure and a pure behavioral measure both uniquely predicted adolescent drinking, and that the attitude measure did not yield enough variability among parents. In order to deal with this, I used the four-point restrictiveness measure where parental attitudes to youth drinking were added with a behavioral dimension in order to yield maximum interindividual differences among parents. This four-point response scale is the one that I have been using to measure parents' restrictive attitudes.

Theoretically, youths' alcohol drinking should follow parents' attitudes to youth drinking. The more restrictive the parents are, the less youths are supposed to drink. In order to validate this proposition, I used the fifth wave of the 10-to-18 study. At this wave, youths responded on three measures of alcohol drinking and parents responded to the four-point attitude measure.

In the fifth wave of data collection in the 10-to-18 study, three different questions were asked about youth drinking. First, the youths were asked the following question: “Have you done the following things with your best friend”. One question was “Drank alcohol until you got drunk – during the last month”. The three-point response scale was “No”, “Yes, once”, and “Yes, several times”. The next question about alcohol drinking dealt with the youths’ peer group: “Consider the group of peers you are together with in free-time. Have you done the following things with this group of peers”. Youths responded on the same question “Drank alcohol until you got drunk – during the last month”, and this measure had the same response scale: “No”, “Yes, once”, and “Yes, several times”. The third question concerned drinking over the whole last year: “Have you been drinking beer, wine, or spirits to the point that you felt drunk – the last year?”. The response options were (1) no, it has not happened, (2) once, (3) 2-3 times (4) 4 – 10 times, and (5) more than 10 times. Parents responded to the four-point restrictive attitude measure used in my evaluation study. Option 1 refers to the most lenient parental attitudes and option 4 to the most restrictive. In Table 11 I report on youths’ drinking frequency for each option of the parental attitude measure. As shown in Table 11, without exceptions youths’ drinking follow parents’ attitudes. The stricter the parental attitudes, the less youth drink. This is true for all three measures of youth drinking. In summary, these analyses verify the construction of the measure of parents’ attitudes to youth drinking. They support the theoretical argument that the frequency of youths’ drinking closely follows the degree of restrictiveness of their parents’ attitudes.

Table 11. Alcohol drinking among youth as related to their parents’ attitudes to youth drinking.

	Alcohol drinking questions: Drinking with the best friend last month[1]		Drinking with the peer group last month[2]		Drinking last year[3]	
	Mean	N	Mean	N	Mean	N
Parental attitudes:						
Option 1	1.78[c]	72	2.08[c]	61	3.26[b]	72
Option 2	1.69[c]	42	1.82[b]	33	2.39[b]	44
Option 3	1.53[b]	127	1.72[a]	99	2.17[b]	127
Option 4	1.38[a]	591	1.54[a]	446	1.94[a]	605

Notes. Across columns, means with different subscripts significantly differ at $p < .05$ in posthoc (SNK) comparisons.
1 F (df = 3, 828) = 8.28, p<.001
2 F (df = 3, 635) = 8.79, p<.001
3 F(df = 3, 844) =17.49, p <.001

Another limitation of the evaluation is that I have not followed up the long-term effects of the program. The reason for this is that the implementation and evaluation of the ÖPP was funded by a time-limited grant. The grant was specific in its objective and time frame. The objective was to create a prevention program that targets alcohol and drug use that would be suitable in any Swedish community. The program should fit into an ordinary community structure and should be possible to implement without any significant expenses, to be effected by using existing personnel or actors within the community. The research grant financed a prevention trial for three years. These were the conditions that the ÖPP had to fulfill. Because a major task was to evaluate the program, and the time limit was three years, we were restricted to implementing and evaluating the program for youths at the ages where alcohol drinking normally starts, i.e. during the junior high school years, ages 13-15. This is an ideal time to attempt to influence youths' first experiences of drinking, but the time interval does not enable consideration of whether the effects will last, or that later experiences will diminish the differences between the intervention and the control youths. Indeed, problem behaviors increase with age from age 12 to age 17-18 on an aggregated level (Moffit, 1993b; Agnew, 2001). Ideally, a program targeting youth alcohol drinking should operate over this entire time frame. One of the research questions that will be central in the future, to my mind, is how to sustain the effects one might obtain in the longer term. It is beyond the scope of the present study to provide an answer to that question. Still, it is an essential one.

It might also be questioned whether the age period covered by the current study was too late. A rule of thumb in preventing problem behaviors is the earlier the implementation, the better (Griffin, Botvin, Scheier & Nichols, 2002; Yoshikawa, 1994), or as Cairns and Cairns formulated the issue: *"problem behaviors are more readily prevented than ameliorated"* (1994, p. 269). My post-hoc view is that age 13 might be too late for radically changing young persons' leisure habits, and this might be a major reason why we failed to reach the leisure-time goal of the implementation. Still, even if it is desirable to intervene as early as possible, this has to be counterbalanced against the perceived importance of the problem. Launching the ÖPP at, for example, the age of 10 of children, might be futile. At this age, underage drinking is not a central issue for parents. Hence, at this age of the child, parents are likely to attend to other matters that are more important for their children.

Nevertheless, the issue of long-term follow-up effects is critical. Lessons from the prevention literature have taught us that. The adult follow-up study of the Cambridge-Sommerville Youth Study revealed some (at that time) unexpected results (McCord 1978). The adult follow-up study showed that more of the participants in the treatment group compared with the untreated control group developed alcohol problems and mental illness, or suffered from stress-related diseases, or died early. Those results did not become evident until the follow-up was conducted. On the other hand, interventions can have a delayed impact and show results a long time after the treatment has been completed. The Perry Project (Beruetta-Clemet, Schweinhart, Barnett, Epstein & Weikhart, 1984) offers an illustrative example. The Perry Project was a preschool intellectual enrichment program. Concurrent evaluations of the program revealed that the children in the treatment group showed an increase in intelligence, but this tendency became gradually weaker. The true impact of the program became evident after a long-term follow-up study when the children had reached the age of 15 (Schweinhart & Weikhart, 1980). Furthermore, at ages 19 and 27, former members of the treatment group were less likely than the untreated controls to have been arrested, and they were more likely to be employed and to have graduated from high school (Schweinhart & Wallgren, 1993). Undoubtedly, a long-term follow-up of the ÖPP is needed.

Another limitation that I want to mention concerns attendance at the parent meetings. Theoretically, it would have been interesting to have known which parents attended a specific parent meeting. That would have made it possible to relate attendance to attitudes and behaviors at the parent and child levels. We would have been able to say something about the dosage effects of the program. The thought of registering parents who attended the parent meetings was considered to be offensive, but it should be noted that this rules out the full unpacking of program content. One way to resolve the issue in future studies is to ask parents in the questionnaires whether or not they attended a specific meeting. I did not do that. Furthermore, it would have been interesting to measure the sheer impact of the letters sent to parents. That would make it possible to establish the extent to which they were read and what preventive impact the written material had.

Unfortunately we have no data on individual exposure to the intervention, since we were advised not to record attendance at the parent meetings. Consequently, the evaluation applied an intention-to-treat approach, where all youths and parents were asked to participate in the evaluation. It is reasonable to assume that we might have obtained even better effect sizes if we only compared intervention parents with a high attendance at the parent meetings with the control parents. On the other hand, it is a strength to be able to show that the universal intervention had an impact at population level.

The questionnaires that provided the main basis of the evaluation of the ÖPP-program were sent by mail and addressed "to the caregiver of [the student's name]". We obtained the records of the students and their addresses from their school. In Sweden, all children have one primary address. By default, the mother is considered the primary caregiver even when the child lives alternately with both (separated) parents. Although I draw conclusions about both parents' attitudes and behaviors and their relationship to youth drinking, it is mostly from mothers that I draw these conclusions.

Only 20 (2.9 %) of the parent questionnaires were answered by fathers at all three waves. This issue is very seldom discussed. Researchers are drawing conclusions about parents, although the data mainly come from mothers. This raises the empirical questions of how coherent fathers' and mothers' attitudes to youth drinking are.

The role of free-time activities

One objective of this study was to create optimal conditions for youths to engage in organized leisure activities. We tried to instigate this through a series of activities. We initiated contacts and collaborations with clubs and organizations that offered organized activities to youth. We published and distributed catalogues of locally available leisure activities to all youths and their parents in the prevention condition. We initiated activity days each school term, where local youth activities were promoted and offers made to try out opportunities. They ranged from chess-playing and dancing to wall-climbing and horse riding. The clubs and organizations that participated either had or were developing explicit policies against alcohol drinking, and they were determined to be good role models regarding underage drinking. We had individual correspondence with each of the youths. Furthermore, parents were informed and exposed to the activities at parent-night meetings, and activity days took place simultaneously. We worked hard to realize the goal of increasing the participation rate for organized activities among youths in the prevention group. But this work was in vain. The statistical analyses showed zero results. They go against our observations, though. All signals from the clubs and organizations with which we collaborated reported a steady increase in new members. If we had based the results section on interview data, we would perhaps have drawn the conclusion that our attempts were successful. But the hard quantitative data speak against it. We can only speculate as to why we failed to involve more youth in the clubs and organizations.

So, why did we fail to increase the rate of organized-activity involvement? We have tapped this issue earlier. The main reason is likely to lie in developmental timing. The age span we chose is a developmental time period when youths are getting less and less dependent on their parents, and they typically want to spend more and more time hanging out with peers rather than committing themselves to a club or association. Furthermore, school work, including homework, requires more time at these ages, which results in less free time. The fact that it is important to consider developmental timing is very clear from Table 12, which shows that engagement in organized activities becomes less popular as youths get older.

I conclude that it might have been a better strategy to provide incentives for youths to maintain their involvement in the kind of structured activities that a majority of them were part of at the beginning of high school, rather than trying to get them involved in new activities at an age when many drop out from these kinds of activities. This would be a very different approach.

Table 12. Percentages of youths at different ages lacking involvement in organized leisure activities.

Age	% not participating in organized leisure activities
10	25
11	13
12	20
13	20
14	26
15	25
16	35
17	28
18	36

Future directions

Our prevention program and its scope are quite specific. The objective is to achieve a decrease in underage drinking. This approach seems fruitful. Also, it has consequences for delinquent activities more broadly. A question that comes to mind is whether the approach is also applicable to other conditions. One example is loitering. Hanging out with peers in the evenings in settings without adult supervision is one early precursor of later-to-come problem behaviors, like delinquency, early sex debut, and drinking (Dishion et al., 1995, 1997; Haynie & Osgood, 2005; Osgood, et.al, 1996). This seems to be equally true of early and later starters in delinquency (Stattin & Magnusson, 1995), and has been discussed in terms of deviance training in recent literature (Dishion, et. al., 1996). A natural continuation of the ÖPP is to target loitering. If parents can agree at class meetings on having roughly the same curfew times for their children, this would set the standard for times to come home in the evenings for early adolescents. The ÖPP could also be developed towards preventing bullying and violence in free time. We know from research that parents are legitimate authorities on issues dealing with how adolescents treat adults and age mates (see Table 1). Hence, similarly, parents' restrictive attitudes to these behaviors might decrease violence.

Our prevention program has been evaluated, and in a specific culture: Sweden. It needs to be cross-validated and tested to see whether it is also viable in other countries. Cross-validations of various kinds have started in the Netherlands, Norway, Russia, Island, Belarus and Finland, where large-scale implementations are now in progress. The program is delivered by ordinary employees in the community.

An interesting question is whether the mechanisms among parents will work in the stipulated way in future. This might seem an odd question, since mechanisms often are thought of as being invariant. The reason I pose this question is that the Nordic countries are going through some major changes with respect to the availability of and consumption of alcohol. This might ultimately lead to more lenient parental attitudes and practices regarding underage drinking. In order to be prepared for this, one might have to look at individual variations in alcohol drinking among youths in cultures where alcohol is more readily available, such as the wine-producing countries. Future research will shed some light on these issues.

Apparently, we have found a potent enough way of getting parents to adhere to the lawful view on how they should relate to youth alcohol drinking. Their restrictive attitudes have been shown to make a difference, in that they seem to influence their children's alcohol drinking as well as their commitments with regard to other problem behaviors. Our approach to basing a prevention program on empirical findings proved effective. Lewin had it right: "There is nothing as practical as a good theory" (Levin, 1951, p. 169). However I would like to add that it is crucial that the theory fits the reality, in addition to being grounded in empirical research.

I want to end with what I think is the most important finding of the evaluation: *Parents' attitudes towards underage alcohol drinking matter*. Youths who have parents with a permissive stance towards drinking alcohol get drunk more than youths who face stricter parental attitudes and practices. The typical trend among parents is that they get more permissive towards underage drinking as their children grow older. This tendency is not a natural law, however. Our program is tailor-made for maintaining parents' restrictive attitudes towards underage drinking, and can be delivered in a low dose by trained community staff. The effort to try to maintain restrictive parental attitudes is worthwhile, since it leads to lowered levels of both underage drunkenness and delinquency.

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