Influence of parental control and support on cannabis use adolescents

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Abstract

The purpose of this study is to find out whether parental support and parental control have a significant association with the use of cannabis among adolescents. Using a multiple regression analysis, this study analyzed the use of cannabis among adolescents between 12 and 18 years old. The results show that more parental support is associated with less cannabis use among adolescents. This finding suggests that good communication and mutual trust between parent and child has a strong protective effect from cannabis involvement. It seems that parental control has no significant association with cannabis use among adolescents. A warm and caring parenting style opposed to a cold and non-responsive parenting style has this desired protective effect on adolescents. Sitting down and talking to their children on a daily basis building up mutual trust should be encouraged amongst parents. Future research examining effective ways to teach parents how to support and communicate with their children regarding cannabis use may prove important in preventing cannabis misuse by adolescents.

Introduction

Cannabis is the world's most popular illicit drug, more prevalent than; opioids cocaine, ecstasy and amphetamines combined (United nations office on drugs and crime, 2010). Epidemiological data from Europe shows a high, but also increasing, prevalence of cannabis use by adolescents ((Europees Waarnemingscentrum, 2013). Although efforts against cannabis use have been made for quite some time, cannabis abuse is still a public health problem that impacts society (Wilkinson, Yarnell, Radhakrishnan, Ball, & D'Souza, 2016). A 2003 risk behavior survey shows that adolescent involvement in drug use is declining since 1991, except for cannabis use. In 2011, cannabis was reported as the second largest most commonly used drug after heroin for users who apply for specialized treatment in addiction care in Europe (Europees Waarnemingscentrum, 2013). In the Netherlands cannabis production is largely unregulated (MacCoun & Reuter, 1997). and its genetics are changing rapidly in the last 20 to 30 years (Pijlman, Rigter, Hoek, Goldschmidt & Niesink, 2005). Cannabis grown in the Netherlands is a lot more potent than imported cannabis, the level of the main psychoactive compound THC in Dutch weed (20,4%) is significantly higher than that of imported cannabis (7,0%). This means that a lot of people don't really know what they are buying and there are health consequences we are only beginning to understand (Pijlman, et al., 2005). Cannabis use among adolescents in the Netherlands is high in comparison with other European countries, about 25% of Dutch 15- to 16-year-olds have reportedly used cannabis at least once (Piontek, Kraus, Bjarnason, Demetrovics, & Ramstedt, 2013). These are alarming numbers and should be taken into consideration when we examine cannabis use in the Netherlands.

Adolescence is an eventful time typified by increased risk-taking behaviors, including substance use (Spear, 2000). Worldwide, most people are starting to experiment with cannabis during their teenage years (Degenhardt, Chiu, Sampson, Kessler, Anthony, Angermeyer, & Karam, 2008). Adolescence coincides with significant neurological changes in brain regions associated with executive functioning. This neuromaturation of the brain of adolescents represents a sensitive period during which drugs such as cannabis have a greater impact on neurocognition compared to exposure to cannabis in adulthood (Lisdahl, 2013). That is, the use of cannabis is associated with an increased likelihood of experiencing symptoms of schizophrenia in adulthood. Furthermore early cannabis use, by age 15, confers a greater risk for developing psychological disorders than later cannabis use, by age 18 (Lisdahl, 2013). These findings suggest that cannabis use at an early onset should be strongly

discouraged.

A number of important protective factors for adolescents have been identified at the
neighborhood, school, individual and family levels (Stone, Becker, Huber & Catalano, 2012).
Different studies have emphasized the role of parents in their children's substance use,
especially the role of parental support and parental control (e.g. Bahr, Hoffmann, & Yang,
2005; Becoña, Martínez, Calafat, Fernández-Hermida, Juan, Sumnall & Gabrhelík, 2013;
Stone, Becker, Huber, & Catalano, 2012; De Looze, Van den Eijnden, Verdurmen,
Vermeulen-Smit, Schulten, Vollebergh & Ter Bogt, 2012). It is expected that parental
support as well as parental control contribute to the best mental health outcomes for
youngsters (De Looze, et al., 2012) Additionally, more parental support and parental control
has been related to lower degrees of cannabis use among adolescents (Becoña et al., 2013;
Stone et al., 2012). Therefore this research focuses on parental support and parental control
and the association with cannabis use among adolescents.

Parental influence on adolescent cannabis use

According to the social learning theory children and adolescents alike learn
observationally through modelling and observing others. The social learning theory explains
human behavior in terms of continuous reciprocal interaction between cognitive, behavioral
and environmental influences (Bandura, 1977). Parents have an important socialization role
and serve as role models for their children (Jessor & Jessor, 1977). Research confirms a
strong and long lasting influence of parental practices on adolescent behavior (DeVore &
Ginsburg, 2005).

Most studies focus on two major dimensions of parenting; support and control
(Engels, Van der Vorst, Meeus, & Deković, 2006). Parental control is a social construct
whereby parents use supervision and communication to exert influence on their children
(Miller, Siegel, & Crano, 2017). Parental control ranges from restrictiveness to
permissiveness. Parents employ rules and restrictive measures in order to control their
children's behavior. Parental control includes supervision when children are in the proximity
of their parents. Additionally parental control extends to knowing the whereabouts of their
children when they are not under their supervision (DeVore & Ginsburg, 2005).
Parental control has a significant influence on the development of adolescent behavior
(Macaulay, Griffin, Gronewold, Williams & Botvin, 2005). Adolescents whose general
behavior is controlled by their parents display lower levels of cannabis use (Moore, Rothwell,
& Segrott, 2010). More parental control has been related to lower degrees of cannabis use

with adolescents (Chen, Storr, & Anthony, 2005).

In the following section parental support will be discussed. Parental support ranges from responsiveness to neglect. Supportive parenting include behaviors such as praising, encouraging and giving physical affection to their children (Becoña, Martínez, Calafat, Fernández-Hermida, Juan, Sumnall & Gabrhelík, 2013). Being responsive to children instead of neglectful typifies supportive parenting. Parents who take the time to sit down and talk to their children at least once a day is another sign of supportive parenting (Becona, et al., 2013). A longitudinal study shows that parental support has a positive influence on their children's behavior and decreases the chances of delinquent behavior (Keijsers, Frijns, Branje & Meeus, 2009). Adolescents who lack parental support are more likely to turn to drugs (Montgomery, Fisk & Craig, 2008).

The current study is interested in the processes by which parents influence children's cannabis use. On the basis of the literature parental control and parental support seem to be very important factors that influence adolescents. Therefore, this study investigates the association between parental support and use of cannabis among adolescents. Additionally this study examines the association between parental control and the use of cannabis among adolescents.

The current study

The aim of the current study is to examine the association of parental control and parental support with the frequency of cannabis use among adolescents. This aim is investigated among adolescents in the Netherlands between 12 and 17 years old. On the basis of the literature we expect that more support control is associated with less use of cannabis among adolescents (H1). Further, we expect that more parental control is associated with less use of cannabis among adolescents (H2). The research models are shown in Figure 1.
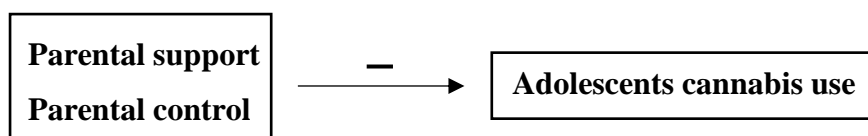
Figure 1. Research model

H1: Hypothesis: More parental support is associated with less use of cannabis among adolescents.

H2: Hypothesis: More parental control is associated with less use of cannabis among adolescents.

Methods

Procedure and participants

The current study makes use of the data from the LEF project where and community intervention was investigated. Two high schools participated in this study, including 2165 who participated. Students from all educational levels participated in this study, with exception the students who were doing their national exams (4th years VMBO, 5th year HAVO and 6th year VWO students). The current study used data from the first measurement wave, before any intervention was carried out. Hereafter the students filled in a digital questionnaire at school under supervision of a research assistant, before any interventions were carried out.

There were questions about: cannabis use, parental support and parental control. Additionally there were questions about the income of their parents and general information about the student themselves (age, level of education and gender).

The sample consists of a total of 1146 adolescents from two high schools. The participants had an average age of 14,76 years old (SD=1.33). About half of the participants were boys (46,3%). The level of education was also evenly split, about half (45%) were students from the VMBO level and roughly the other half (55%) were educated at HAVO- or VWO-level.

Measures

Cannabis use among adolescents was measured by asking adolescents how often they have used of cannabis in their lifetime. Answer categories were on a 7 point scale ranging from: 1. never, 2. 1 to 2 times, 3. 3 to 5 times, 4. 6 to 9 times, 5. 10 to 19 times, 6. 20 to 29 times and 7. 30 times and more.

Parental control is an independent variable and reflects how controlling parents are. This was measured by asking the adolescents five questions about their parents or 'caretakers' controlling behavior. For example: *Do your parents want to know where you are when you go out on Saturday night?* or *Do you need permission to go out on a normal week night?* The answer categories are on a 5 point scale ranging from 1. Never to 5. Always. The mean score of the five items reflects the level of parental control. A higher score indicates more parental control ($\alpha = .84$).

Parental support is an independent variable and reflects how helpful, encouraging and responsive parents are. This was measured by asking the adolescents to fill in an answer on six statements about communication with their parents or caretakers. For example: *I can talk*

about my problems at home. or *If I speak at home, I am being listened to.* Answer categories are on a 7 point scale ranging from 1. Totally disagree to 7. Totally agree. Four questions were recoded to make 7 the high score and 1 the low score on parental support. The means score of the six items reflects the level of parental support. A higher score indicates more parental support (α = .72).

Socioeconomic status of the parents is a control variable in this study. This variable reflects the income of the parents or 'caretakers'. This was measured by asking the adolescents: *How rich do you think your family is?* Answer categories ranging from 1. Not rich at all. to 5. Very rich. This question was recoded to make 1 the low score on socioeconomic status and 5 the high score of socioeconomic status.

Analysis

In the current study, IBM SPSS statistics Version 25 has been used to analyze the data. Descriptive analyses were conducted for the demographic variables (gender, level of education, age and socioeconomic status parents) to further describe participants in this research. A multiple regression analysis will be used to analyze the data. This form of analysis will be necessary in this study because of the multitude of independent variables (parental control and parental support) and a single dependent variable (cannabis use). This allows for the simultaneous comparison of more than one contrast. In the first model the control variables (gender, level of education, age and socioeconomic status parents) have been included. In the second model the independent variables (parental control and parental support) have been included. This way the analysis showed the relative influence of parental control and parental support while controlling for gender, level of education, age and socioeconomic status parents. Effects with a *p* value lower dan .05 were considered to be significant.

Results

Descriptive analysis

Table 1 shows the descriptive statistics for male and female participants. It is notable that the cannabis use life time of male participants is higher (m = 1.29, SD = 1.09) than the female participants (m = 1.12, SD = .66). Secondly, it is notable that about 92,8% of the adolescents never used cannabis in their lifetime.

Table 1

*Descriptive Statistics of the control variables, the cannabis use of
adolescents in their lifetime, parental control & parental support
(N=2151).*

	Female	Male	Total (N= 2165)
Age, *mean* (SD)	14.72 (1.33)	14.61 (1.34)	2165
Level of education, *mean* (SD)	3.80 (1.71)	3.78 (1.62)	2165
Socioeconomic status parents, *mean* (SD)	2.79 (.60)	2.61 (.67)	2165
Parental support, *mean* (SD)	4.82 (1.81)	5.43 (2.07)	2152
Parental control, *mean* (SD)	3.47 (1.05)	3.25 (1.05)	2155
Cannabis use lifetime, *mean* (SD)	1.12 (0.66)	1.29 (1.09)	2162

Note. SD = standard deviation

To test the hypothesis that parental control and support are predictive of adolescents' cannabis use, multiple regression analysis was used. In model 1, results show that 6% of the variance in cannabis use can be accounted for by the four control variables collectively, adjusted R^2(.06), $p < .05$. When the independent variables are added in model 2 the results show that 7% of the variance in cannabis use can be accounted for by the four control variables and the two independent variables, adjusted R^2(.07), $p < .05$.

The association between parental support and cannabis use among adolescents is significant *(β=.107, p < .05)*. The association between parental control and cannabis use among adolescents is not significant *((β=.01,. p >.05)*. Furthermore, results also reveal that older adolescents *(β = -.238, p < .05)*, adolescent boys *(β = .083, p < .05)* and adolescents with parents of a lower socioeconomic status *(β = -.049, p < .05)* are more likely to be using cannabis.

Table 2
Coefficients table of the multiple regression analysis.

Model		*B*	*SE*	*β*	*t*	*p*
1	Age	0.16	0.01	0.23	10.83	0.00**
	Gender	-1.75	0.04	-0.10	-4.62	0.00**
	Level of education	-0.02	0.01	-0.04	-1.75	0.08
	SES parents	-0.07	0.03	-0.05	-2.47	0.01*
2	Age	0.16	0.01	0.24	11.00	0.00*
	Gender	-0.15	0.04	-0.08	-3.89	0.00*
	Level of education	-0.01	0.01	-0.03	-1.24	0.24
	SES parents	-0.07	0.03	-0.05	-2.79	0.01*
	Parental control	0.01	0.02	0.01	0.76	0.45
	Parental support	-0.10	0.02	-0.19	-5.6	0.00**

Note. * = p < .05 ** = p < .001

Discussion

The aim of this study is to investigate the influence of parental control and parental support on cannabis use among adolescents. In line with our hypothesis, the results indicate that more parental support is related to less frequent cannabis use among adolescents. However, the results also indicate that parental control is unrelated to cannabis use of adolescents, this was not expected as previous research suggested that parental control does have significant influence on cannabis use among adolescents (Montgomery et al., 2008).

Parental control and support and cannabis use of adolescents

As predicted in the first hypothesis of this study a negative association between parental support and the frequency of cannabis use among adolescents was found. More parental support related with less frequent cannabis use among adolescents. Recent research investigated the influence of parental support on adolescent cannabis use and revealed that adolescents with parents, who show limited support, have an increased risk of cannabis use (Miller et al., 2017). Another recent study showed that highly supportive parents who exercise low control over their children have a protective effect over their children. This

suggests that the protective effect of parental support outweighs the effect of parental control in adolescents cannabis use (Calafat, García, Juan, Becoña & Fernández-Hermida, 2014). This finding suggests that good communication and mutual trust between parent and child has a strong protective effect from cannabis involvement. It is plausible that communicative, caring and nurturing parenting is consistently associated with lower rates of cannabis use among adolescents (Becoña et al., 2012; Miller et al., 2017; Montgomery et al., 2008). However, in contrast to our second hypothesis and to earlier research (Montgomery, 2008) we found no association between parental control and adolescent cannabis use, there can be several explanations for this. It is possible that supportive and trusting parenting leads to a willingness, with adolescents, to disclose information about their whereabouts and their cannabis use. Highly supportive parents would therefore have to exercise less control to get the same information from their children (Miller et al., 2017). It could be that supportive parenting is simply a better approach than controlling parenting in exert control over adolescents.

Another explanation for the fact that no association was found between parental control and adolescent cannabis use is that parental control in relation to cannabis is not as important as parental control in relation to alcohol. Research shows that more parental control leads to less alcohol use among adolescents (Van der Vorst et al., 2006), but this could differ for cannabis use among adolescents. The use of alcohol is more common, therefore parents often have more knowledge about and rules around the use of alcohol, which they do not have for cannabis. Possibly, parental control may be less important in relation to cannabis than parental control in relation to alcohol use. We could argue that parents who exercise high control have no significant impact when it comes to cannabis use compared to alcohol use of adolescents (Choquet, Hassler, Morin, Falissard, & Chau ,2008). Further research is needed to find out whether parental control by itself has significant impact on cannabis use among adolescents.

Strengths & Limitations

In this section we would like to discuss the strengths of this research. Firstly, as there is a gap in literature when examining parental control and parental support in relation to cannabis use of adolescents, this study fills in that gap. Secondly, another strength of this research is that it specifically focuses on the use of cannabis among adolescents while other research emphasized on drug use in general. This means we can zoom in and find out which parental practices should be encouraged when it comes to protecting adolescents from

cannabis use. Specific interventions can be developed for parents, whereby the focus can be on supportive behaviors towards their children. Thirdly, a strength is that this research controls for the effect of socioeconomic status of the parents, this has not been previously studied to the best of our knowledge.

In the following section this thesis would like to address the limitations of this study. Firstly, due to the cross sectional design of the study no inferences about causality can be made. Longitudinal studies are needed to investigate whether parenting can successfully influence the cannabis use among adolescents. Further, this research did not take into account the possible influence of adolescents on their parents behavior, and some research suggests that this relationship is reciprocal (Kerr, Stattin & Özdemir, 2012). Secondly, another limitation is the population of respondents. Almost all of the respondents come from one municipality in the Netherlands. Because of this it could be that the youth from this municipality is not a good representation of cannabis users in the Netherlands and therefore cannot be generalized to a wider population. As there are no coffeeshops in this municipality, cannabis is arguably more difficult to obtain in comparison to bigger cities in the Netherlands where coffeeshops are often abundant. Thirdly, parental practices may have different results in different cultures. For instance, parental control might have more or less influence on adolescent behavior in other cultures. According to research, strictness and control in parenting practices are perceived in a more negative way in southern European countries. More research is needed before conclusions can be drawn on the extent to which strict and controlling parental practices explain adolescent drug use (Garcia & Garcia, 2009). This could again be different for other regions around the world. At the same time, this study does back intervention strategies that encourage parents to support their children, for there is evidence that supportive parenting styles have a protective effect when it comes to drug use of adolescents (Calafat, et al., 2014). Fourth, other parental characteristics might have far more influence on adolescent cannabis use than parental control and parental support, such as mental health of parents (Spooner, 1999). Fifth, adolescent cannabis use is heavily linked with schizotypal personality traits of the individual, this could be a major influence on cannabis use among adolescents outweighing the influence of parental practices (Dumas, Saoud, Bouafia, Gutknecht, Ecochard, Dalery, Rochet & d'Amato, 2002).

Sixth, this study was based on self-reported data, therefore the results could be biased because of socially desirable answers. However, a self-administered questionnaire is seen as

an effective tool to study substance use behaviors with adolescents (Wills, Sandy & Yaeger, 2001)

Conclusion & implications

　　　　Parenting practices play an important role in lowering the risk of their children's cannabis use. In fulfilling this role, parents should be aware of how their behavior affects their children's cannabis use. Further parents should know which parental practices have a protective effect on their children's cannabis use, this entails a warm and caring parenting style opposed to a cold and non-responsive parenting style. Lastly parents should communicate with their children and give them the chance to build up mutual trust and ask questions about cannabis use. It seems that restrictive and controlling parental practices has no significant influence on cannabis use among adolescents. These

　　　　Government cannabis prevention programs can take these protective parental practices into account to educate parents. Supportive and responsive parenting are parental practices should be promoted by intervention programs aimed at strengthening parental skills in order to prevent cannabis misuse by adolescents. Future research should examine effective ways to teach parents the social skills to effectively protect their children from cannabis use and how to support and communicate with their children regarding cannabis use.

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Appendix 1: Syntax

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT V30_1
  /METHOD=ENTER V_age V4 V6 V10
  /METHOD=ENTER V_age V4 V6 V10 control Psupport.
```

Appendix 2: Interdisciplinary approach

According to Bronfenbrenner's Ecological model there are several layers of influence that can impact adolescents. Bronfenbrenner describes four systems of influence on adolescents: The micro system, the exosystem, the meso system and the macro system. The closer the system is to the individual the bigger the direct impact is on the individual. The further away a system is from the individual the bigger indirect influence is on the individual. It sounds like indirect influence signifies less influence, but an indirect influence can have an enormous impact on an individual (Van der Wal & de Wilde, 2017).

Firstly we will look at the direct surroundings of the adolescent, this is the microsystem. Here we will on the relationship between parenting and cannabis use. Cannabis use of friends predicts subsequent change in the cannabis use of an adolescent (Andrews, J.A. Tildesley, E. Hops, H. & Li, F. 2002). This is important because the influence of parenting on cannabis use of adolescents can have a mediating effect on the relationship between cannabis use and parenting.

Secondly we will look at the mesosystem, this system consists of the connections between the micro systems (Berk, 2000). The relationship between the parents and the school is another example of a mesosystem.

Thirdly we look at the exosystem, this encompasses the link and processes taking place between two or more settings, where at least one does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate settings that does contain that person (Bronfenbrenner, 1989). This could be the relationship of the parents and their workplace for example. A parent who is happy at their work and not stressed can create better conditions for their children and their microsystems (Berk, 2000).

Lastly we look at the macrosystem, this could be described as the sociocultural context in which a person grows up. The macrosystem consists of the overarching pattern of micro-, meso and exosystems characteristics of a given social context (Bronfenbrenner, 1989). The macrosystem is the outmost layer for a developing person, there is no distinct framework but it hold the cultural values, traditions and laws. For example, if the believe within the culture is that parents are responsible for their children's behavior you might see more strict parenting which influences the microsystem of the developing person. The macrosystem can influence parents to choose a certain parenting style because this is more accepted in their culture (Berk, 2000). Therefore the influence of the macrosystem on the relationship between parenting and cannabis use can be significant. The impact of the

macrosystem can be noticed after making comparisons between young people growing up in different societies (Bronfenbrenner, 2002).

This research focuses on the intersection of the parenting and peer context. Parents can have significant influence on the potential cannabis use of an adolescent. The interaction between these contexts, which is part of the exosystem, can also have influence on the cannabis use of an adolescent.

Appendix 3: Contract data use (TED)

Utrecht, 2019 This letter constitutes formal confirmation of the fact that the data from the

Utrecht University Youth Studies 2019 have been made available to Max Groot of Utrecht

University. These data will not be made available to others, and the data may be used only for

analysis and reporting on topics for the thesis, about which agreement has been reached with

Ina Koning. Max Groot will receive access to the data from the dataset in order to answer the

following research questions within the framework of the thesis: What is the effect of

parental support and control on the use of cannabis among adolescents and how is this effect

influenced by socioeconomic status of the parents.

The following variables will be used:

The dependent variable **Cannabis use of adolescent** (question 26).

The independent variable **parental control** (question 32).

The independent variable **parental support** (question 33)

Moderating variables: Socioeconomic status parents (question 8)

No report based on the data from the project entitled *LEF-A Community Intervention* may be

made public, unless permission has been obtained in advance from the Project Coordinator

for the Prevention Alcohol Use in School Children.

After the expiration of this contract, dated 01-09-2020 Max Groot shall delete data *LEF-A

Community Intervention.*

Appendix 4: Registration Form: Research Activities for TED-students (in total 60 hrs)

Max Groot
5920256

Research Activities	Total number of Hours	Signature YS staff
In May and June 2017 I taught first-year students at Algemene Sociale Wetenschappen. These were workshops to help students with doing their first research.	2 x 30 hours	Vincent Duindam
Total	**60 hours**	