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TO USE OR NOT TO USE?

THE RELATIONSHIP BETWEEN POSITIVE AND NEGATIVE EXPECTATIONS
WITH THE INTENTION TO CONTINUE THE USE OF ALCOHOL AND XTC

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Abstract

Emerging adulthood (18 – 25 years old) is a period of many changes. The use of alcohol and drugs is normalized and access to these substances increases, which leads to more opportunities to use drugs (Arria et al., 2013). Therefore, this study investigated how positive and negative expectations are related to the intention to use alcohol or XTC and if this relation is moderated by the use of other drugs. The cross-sectional Drug Use Personas (DUP) dataset with 3264 participants ($M_{age} = 21.140$ years, $SD = 1.910$ years, 73.7% women) is used to answer these questions. Positive expectations were found to have a significant positive relation with intention to use alcohol as well as XTC and negative expectations were negatively related to intention to use both substances. For both substances, the expected positive relation of the use of other drugs on the relations between expectations and intention was not found to be significant. In conclusion, though there are negative expectations for using alcohol and XTC, positive expectations also play an important role in the future intention to use. As such, it is important in future research and interventions to focus on the role of positive expectations as well.

Keywords: positive expectations, negative expectations, intention, alcohol use, XTC use, other drug use

Samenvatting

Jongvolwassenheid (18 - 25 jaar) is een periode voor veel veranderingen. Het gebruik van alcohol en drugs wordt genormaliseerd en de toegang tot alcohol en andere middelen stijgt. Dit leidt tot meer mogelijkheden om daadwerkelijk die middelen te gebruiken (Arria et al., 2013). Deze studie onderzocht daarom hoe positieve en negatieve verwachtingen gerelateerd waren aan de intentie tot het doorgaan met het gebruik van alcohol of XTC en of deze relatie wellicht gemodereerd werd door het gebruik van andere drugs. De Drug Use Personae (DUP)-dataset met 3264 participanten ($M_{leeftijd} = 21.140$ jaar, $SD = 1.910$ jaar, 73.7% vrouw) is gebruikt om deze vragen beantwoorden. Positieve verwachtingen bleken significant positief gerelateerd aan de intentie tot het gebruik van alcohol en XTC en negatieve verwachtingen waren significant negatief gerelateerd aan de intentie tot het gebruik van beide middelen. Voor beide middelen gold dat de verwachte positieve relatie van het gebruik van andere middelen op de relatie tussen verwachtingen en intentie niet significant werd bevonden. Ondanks negatieve verwachtingen van het gebruik van alcohol en XTC spelen positieve verwachtingen een belangrijke rol in de intentie tot gebruik. Het is daarom belangrijk voor vervolgonderzoek en interventies om ook op deze positieve verwachtingen te focussen.

Kernwoorden: positieve verwachtingen, negatieve verwachtingen, intentie, alcoholgebruik, XTC gebruik en gebruik andere drugs.

The relationship between positive and negative expectations with the intention to continue the use of alcohol and XTC.

Emerging adulthood (18 – 25 years old) is a period of many changes, like moving to a new city, getting more responsibilities and receiving less parental supervision. This period is, therefore, one of the most critical phases for changes in substance use (Arnett, 2000). In addition, for many adolescents, this means going to university and entering student life. In the Netherlands, there are 1,2 million students in total (CBS, 2018). During student life, the use of alcohol and drugs is normalized and access to alcohol and other drugs increases, which leads to more opportunities to actually use drugs (Arria et al., 2013). Among emerging adults in the Netherlands, between 13.9% - 19.0% indicate heavy alcohol consumption, which means drinking at least 4 or 6 glasses (for women and men, respectively) once a week (Trimbos Institute, 2018). In addition to the use of alcohol, the Trimbos Drug Monitor (2019) indicates that ecstasy (XTC) appears to be the most important nightlife drug by far in the Netherlands. About 5% of the 18- and 19-year-olds have used XTC and for 20 to 24-year-olds, this percentage rises to almost 25%. Although there are several risks involved in using alcohol and XTC, many emerging adults still intend to continue to use them. Does this mean that the positive consequences outweigh the negative consequences or are there more positive consequences than negative ones? This study investigates the relationship between these perceived negative and positive expectations of using alcohol or XTC and how this is linked to emerging adults' continued use of alcohol and XTC.

Consequences

Positive consequences, so-called motives to drink alcohol have been categorized by Cooper (1994) into the following categories: having fun, having fun with others, conforming to the group and coping motives. For XTC, there are additional motives to use the substance. For example, the possibility of experiencing euphoria, delaying tiredness, a sharpened sensory perception, feeling pleasant and an increased sense of connection with other people (Kernan & Keenan, 2008; Peters, Kok, & Abraham, 2008). Besides positive consequences, there are negative consequences to drinking alcohol or taking XTC as well. For example, some negative consequences of consuming alcohol are: psychological and psychosocial problems, health problems, impaired cognitive ability and an increased risk of sexual assault and sexually transmitted diseases (Foster, Dukes, & Sartor, 2016; Hingson, 2010). In addition, the use of alcohol amongst young people is even riskier because their bodies are still in full development, which means they are more susceptible to the risks of alcohol (Kuunders & Van Laar, 2010). Finally, alcohol consumption carries a high risk of alcohol dependence (Franken

& Van den Brink, 2009). Like alcohol, XTC comes with various negative short- and long-term consequences (Scheier, Abdallah, Inciardi, Copeland, & Cottler, 2008). Short-term consequences, for example, are: getting overheated and suffering from psychosis and in the long term, someone can suffer brain damage and permanent psychological problems (Kerssemakers, Van Meerten, Vervaeke, & Noorlander, 2015). Furthermore, polysubstance or multiple drug use is related to even greater risks and worse health consequences than when only one substance is used (Kelly et al., 2015; Smith, Farrell, Bunting, Houston, & Shevlin, 2011).

Clearly, there are many negative consequences to using alcohol and XTC. Their abundance demonstrates that it is important to prevent single as well as poly substance use as much as possible. Knowledge about these possible consequences of drug use might lead to certain expectations (Müller & Schumann, 2011). These expectations, both negative and positive, lead to specific reasons to (dis)continue the use of alcohol and XTC.

Intention For Behavior

Based on the theory of planned behavior (Ajzen, 1985; Foster, Dukes, & Sartor, 2016), human behavior is determined by the intention to conduct a certain behavior. This intention is therefore a strong predictor of actual behavior, which in this study refers to the actual use of alcohol and/or XTC (Sheeran, 2002). This intention is influenced by beliefs about the probable outcomes of the use and the evaluations of the outcomes of the use. Positive beliefs or positive evaluations will result in an increase in intention of using alcohol or XTC and the actual performance of the behavior.

In addition, the expectancy theory (Bandura, 1977) explains intention for behavior partly as a result of expectations. In this study, this so-called intention to use is fueled by expectations of the use of the substances alcohol and XTC, more so than if these expectations are logical or based on actual experience. Thus, according to both theories: expectations, both positive and negative, relate to the intention to continue the use of alcohol or XTC.

Expectations

Much research has used the expectancy theory to look at a link between expectations and alcohol use by college students (Labbe & Maisto, 2011; Nicolai & Demmel, 2018). Clear indications have been found that expectations are an important factor in the initiation and maintenance of alcohol consumption (Christiansen, Goldman, & Inn, 1982; Kuntsche, Knibbe, Gmel, & Engels, 2005). Expectations are also connected to the prediction of future alcohol consumption (Brown, 1985; Christiansen, Smith, Roehling, & Goldman, 1989). Settles, Zapolski and Smith (2014) even found that alcohol-related expectations were strong

predictors for alcohol-related behavior, including the intention and maintenance of drinking alcohol (Jester et al., 2015). Overall, it can be concluded that expectations play an important role when it comes to alcohol use.

Negative expectations are related to beliefs that unpleasant or undesirable effects will occur as a result of consumption, which seems to reduce consumption (Paswan, Gai, & Jeon, 2015). Negative expectations can predict abstentions as well (Leigh & Stacy, 2004). This indicates that when people have negative expectations, this will then result in a lower intention to use this substance again. Positive expectations, on the other hand, are related to beliefs that pleasant or desired effects will occur as a result of use and are therefore a (robust) predictor of drinking patterns (Brown, 1985; Madden & Clapp, 2019). This indicates that students who have used alcohol have a greater intention to use this substance again, because of their previous positive experiences and the expected effect of it when using again (Madden & Clapp, 2019).

Therefore, current research explores the relation between expectations of using the drug and the intention of continuation of using alcohol or XTC. Based on the articles mentioned above, it is expected that positive expectations relate to a higher intention to continue the use of alcohol and negative expectations relate to a lower intention. When there are more positive expectations than negative expectations, the intention to use the substance increases even further. Peters and Kok (2009) have conducted a review which sums up all the reasons that are mentioned in articles when it comes to using XTC, but the studies quoted in this review are not very recent and do not take into account the possible relationship between expectations. Therefore, present research is taking this drug into account. Since the expectancy theory is used in the studies on alcohol and this theory is found suitable for explaining this relationship, it is expected to find a similar connection for XTC as for alcohol, because both are risky substances.

Other Drug Use

As mentioned earlier, polysubstance, using different drugs in the past year, is related to more negative consequences than when only one drug is used (Kelly et al., 2015; Smith et al., 2011). When an adolescent makes the transition to use other drugs, which is harmful by itself, they will use more harmful drugs later on (Choi, Lu, Schulte, & Temple, 2018) and the use of multiple substances can lead to using illegal substances (Maldonado-Molina & Lanza, 2010), such as XTC. It can be concluded that the use of other drugs leads to an increase of negative consequences. Thereby, the present study looks at the influence of the use of other drugs on the relationship between positive and negative expectations and intention to use

alcohol or XTC. It is expected that the use of other drugs will strengthen the relation of negative expectations and the intention to continue to use of alcohol and/or XTC, because of the relation with more negative consequences and therefore more negative expectations (Kelly et al., 2015; Müller & Schumann, 2011; Smith et al., 2011). On the other hand, using other drugs leads to more normalization of drug use and to using more other drugs as well, sometimes even to combining them at the same time (Østergaard, Østergaard, & Fletcher, 2016). In addition, a number of positive expectations, such as enhancing abilities or pleasures, are mentioned when people are asked why they use multiple drugs (Kataja, Karjalainen, Savonen, Hakkarainen, & Hautala, 2018). It is therefore expected that using other drugs will strengthen the relation of positive expectations with the intention to continue to use alcohol and/or XTC. Therefore, does the use of other drugs have a positive relation on the relations between both expectations and intention to continue the use of both alcohol and XTC?

Present Study

In the present study, we will explore the relationship between positive and negative expectations on one hand, and the intention to continue using alcohol and/or XTC on the other. This is done, because intention is a strong predictor of the actual behavior to use these substances. Another research question revolves around the extent to which this relationship is moderated by the use of other drugs, like cocaine or LSD (see Figure 1). Specifically, this study focuses on emerging adults from 18 to 25 years old. It is expected that positive expectations increase intentions to use again, while negative expectations decrease intentions to use. Compared to negative expectations, positive ones have a stronger influence on the intention. These expectations can be seen as a predictor for the intention to use alcohol and XTC. When other substances are used by the individual as well, both expectations are expected to have an even greater influence on the intention.

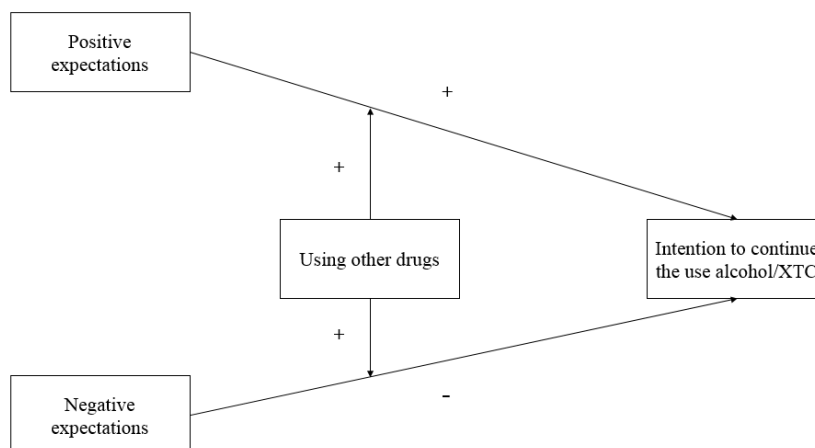


Figure 1. The conceptual research model.

Method

Procedure and Participants

The Drug Use Personas (DUP) dataset, which include data from adolescents between the age of 18 and 25 from all over the Netherlands, is used to investigate the research questions. The adolescents were approached on social media by the Trimbos Institute and the researchers to participate. A company provided advertised messages about participation. During a period of 11 weeks, adolescents could participate in the online survey, which took about 15 minutes to fill out. Prior to the survey, the participant was informed about the purpose of the survey, data storage and had actively consented to participate. After completing the questionnaire, the participants had the opportunity to fill in their e-mail address if they wanted to participate in the draw of the prizes, such as a GoPro Hero or a voucher for the website Bol.com. The data and the e-mail addresses were stored separately and therefore anonymity is guaranteed. This research (65-1807) has been approved in advance by the Ethics Committee of the Trimbos Institute (TET). From the DUP-dataset, which had 3969 participants, 705 participants were excluded from the analysis for several reasons, such as not being a student and not having experiences with alcohol or XTC. There were 3264 participants ($M_{age} = 21.140$ years, $SD = 1.910$ years) included in the analysis, of whom 859 were male ($M_{age} = 21.420$ years, $SD = 2.024$ years) and 2405 were female ($M_{age} = 20.86$ years, $SD = 1.878$ years). From these participants, 10.3% had the educational level ‘‘MBO’’, 38.3% had ‘‘HBO bachelor’’, 37.4% had ‘‘WO bachelor’’ and 13.9% had ‘‘WO master’’. With regards to the question about alcohol, people who had never used alcohol were excluded from the analysis. This was the case with 94 participants, so 3170 participants were included in the analysis for alcohol. Similarly, 2113 participants who had never used XTC were excluded from the analysis for XTC, leaving a total of 1151 participants for the analysis.

Measurements

Demographic data. In this study, demographic information was asked for gender, age, level of education. For gender, women was coded with 0 and men with 1. For educational level, ‘‘MBO’’ was coded with 0, ‘‘HBO bachelor’’ with 1, ‘‘WO bachelor’’ with 2 and ‘‘WO master’’ was coded with 3.

Intention to continue the use. This study inquired about the participant’s intention to use alcohol and XTC by asking ‘‘What substances do you think you are going to use in the coming year?’’. The two items referring to alcohol and XTC were included in this study. Answer categories were coded with 0 for no intention and 1 for intention.

Expectations. In preliminary research, interviews were used to obtain answer options for the questions about expectations. The questions for these interviews were based on the Theory of Reasoned Action from Fishbein (2006). These interviews were checked by the Ethics Committee of the Trimbos Institute (TET; 201611_65_1517). Answers that were collected by these open interviews were analyzed with MAXQDA and were used for the answer options of the present study. For positive expectations, the question was: “What are the positive expectations that you have for the use of substance X?” Adolescents could indicate 17 different positive expectancies they have with the use of alcohol and XTC, e.g. “a nice time with (new) friends”, “relaxing” etc. If the adolescent did not have any positive expectancies for alcohol or XTC, they could choose the option “I don’t have positive expectations for the use of the substance X”. The 17 positive expectations are summed up for a final total score, with a higher score indicating more positive expectations. The same procedure is followed for negative expectations, but with 14 options, e.g. “loss of control/ behave differently”, “costs too much money” and 1 “I don’t have negative expectancies” option. Here, a higher score for negative expectations indicates more negative expectations. For both expectations, the “I don’t have..” answer options were not included with the summed score. All the variables were reliable: positive expectations alcohol (Cronbach’s $\alpha = 0.659$), negative expectations alcohol (Cronbach’s $\alpha = 0.596$), positive expectations XTC (Cronbach’s $\alpha = 0.666$) and negative expectations XTC (Cronbach’s $\alpha = 0.584$).

Using other drugs. The participants were asked which drugs they had used in their life by asking “Which drug(s) have you used at any point in your life?” with 14 answer options. Examples of the 13 different drugs referred to were alcohol, XTC, LSD and ketamine. When a substance is not used, it is coded with 0 and when the substance has ever been used at any point by the participant, it is coded 1. For the moderation effect, a summed score of 13 items is used, where alcohol was excluded in the analysis on intention to use alcohol and XTC was excluded in the analysis on intention to use XTC. Reliability was checked, the item is proved reliable for alcohol (Cronbach’s $\alpha = 0.855$) and for XTC (Cronbach’s $\alpha = 0.775$).

Analysis plan

All the analyses were done with IBM SPSS 25. Participants who filled in that they were studying or studying and working in combination with the educational level MBO, HBO (bachelor), WO (bachelor) and WO (master) are taken into account because this study looks at students. Descriptive analyses were conducted on gender, age, and educational level. A

Spearman correlation was used to look at the correlations between all the variables. Because of the dichotomous outcome variable, the intention to continue, a logistic regression is used to answer the research question. The reported use of other drugs was relevant to the question about a possible moderation.

Separate models for alcohol and XTC were run with different sample sizes, depending on the number of participants who had had experience with each of the substances. The first model for both alcohol and XTC investigated the relationship between expectations and the intention to continue the use. Next, in order to test whether the moderator of using other drugs had an influence on the relationships between both expectations and intention, two models were conducted for testing these interactions: one model for alcohol and one for XTC. For these analyses, a centered score of both expectations and centered sum score of using other drugs was used. Positive and negative interaction terms were added separately to the first existing models for both alcohol and XTC. All assumptions were checked. A CI of 95% was used to determine the significance level.

Results

Descriptive Results

Intention to use alcohol. Of the 3170 participants ($M = 20.94$, $SD = 1.891$) who had experience with drinking alcohol, 3042 participants (96.0%) had intention of continuing to use alcohol. Frequencies and descriptive results on the variables of interest are shown in Table 1 and 2.

Table 1

Frequencies Participants Included in Alcohol Analysis

	N	%
<i>Gender</i>		
women	2329	73.5%
<i>Educational level</i>		
MBO	326	10.3%
HBO bachelor	1214	38.3%
WO bachelor	1184	37.4%
WO master	446	14.1%
Intention to use alcohol	3042	96.0%

Note. N = 3170.

Table 2

Descriptive Statistics of Expectations and Use of Other Drugs

	<i>M</i>	<i>SD</i>	Min	Max
Positive expectations about alcohol	4.9260	2.43521	1	15
Negative expectations about alcohol	3.6698	2.11751	1	14
Other drugs use among alcohol users	2.3893	2.69296	0	12
Positive expectations about XTC	6.2034	2.31066	1	16
Negative expectations about XTC	3.6804	2.02602	1	13
Other drugs use among XTC users	5.1129	2.60356	0	12

Note. *M* = mean; *SD* = standard deviation.

Intention to use XTC. Of the 1151 participants ($M = 21.44$, $SD = 1.811$) who had experience with using XTC, 965 participants (83.8%) had the intention to continue using XTC. Frequencies and descriptive results on the variables of interest are shown in Table 2 and 3.

Table 3

Frequencies Participants Included in XTC Analysis

	N	%
<i>Gender</i>		
women	723	62.8%
<i>Educational level</i>		
MBO	93	8.1%
HBO bachelor	460	40.0%
WO bachelor	415	36.1%
WO master	183	15.9%
Intention to use XTC	965	83.8%

Note. N = 1151.

Correlations

Intention to use alcohol. Table 4 presents the correlations between the variables of interest among participants who had experience with using alcohol. Both positive and negative expectations about alcohol are significantly correlated with the intention to continue the use of alcohol. In other words, having more positive expectations about alcohol is related to a higher intention to continue the use of alcohol. Additionally, having more negative

expectations about alcohol is related to a lower intention to continue the use of alcohol. Furthermore, using more other drugs, considered over an individual's lifetime, is related to a higher intention to continue the use of alcohol.

Table 4

Spearman Correlations Between All Variables of Interest Among Alcohol Users

	1	2	3	4	5	6	7
1. Gender	-						
2. Age	.063***	-					
3. Educational level	-.004	.286***	-				
4. Intention to use	.065***	-.025	.062**	-			
5. Positive expectations	.055**	-.021	.029	.133***	-		
6. Negative expectations	-.110***	-.017	.058**	-.104***	.253***	-	
7. Other drugs use	.250***	.221***	.033	.116***	.252***	.050**	-

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

Intention to use XTC. Table 5 presents the correlations between the variables of interest among participants who had experience with using XTC. Both positive and negative expectations about XTC are significantly correlated with the intention to continue the use of XTC. In other words, having more positive expectations about XTC is related to a higher intention to continue the use of XTC. Additionally, having more negative expectations about XTC is related to a lower intention to continue the use of XTC. Furthermore, using more other drugs, considered over an individual's lifetime, is related to a higher intention to continue the use of XTC.

Table 5

Spearman Correlations Between All Variables of Interest Among XTC Users

	1	2	3	4	5	6	7
1. Gender	-						
2. Age	.024	-					
3. Educational level	-.050	.264***	-				
4. Intention to use	.098**	-.087**	.070*	-			
5. Positive expectations	-.057	-.068*	-.070*	.195***	-		
6. Negative expectations	-.160***	.031	-.043	-.213***	.211***	-	
7. Other drugs use	.237***	.155***	-.033	.123***	.107***	.002	-

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

Intention to continue the use of alcohol

Main effects. Logistic regression analyses showed that there is a significant effect of positive ($OR = 1.559$, $p < .001$) as well as negative expectations ($OR = .744$, $p < .001$) about alcohol on the intention to continue the use of alcohol. This indicates that early adults with positive expectations are more likely and with negative expectation are less likely to have an intention to continue the use of alcohol. The OR's show that the effect of positive expectations is greater than negative expectations on the intention to use alcohol.

Table 6

Logistic Regression of Positive and Negative Expectations About Alcohol on the Intention to Continue the Use of Alcohol

	OR	<i>p</i>	95% CI
Gender	2.355	.020*	[1.143, 4.853]
(ref = women)			
Age	.804	.001**	[0.703, 0.919]
Educational level		.001**	
(ref = WO master)			
MBO	.187	.001**	[0.072, 0.485]
HBO bachelor	.648	.302	[0.284, 1.476]
WO bachelor	.547	.158	[0.236, 1.265]
Positive expectations	1.559	.000***	[1.370, 1.774]
Negative expectations	.744	.000***	[0.684, 0.809]

Note. OR = odds ratio; CI = confidence interval.

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

Moderation effects. To test whether the relationship of positive and negative expectations with intention to use alcohol is dependent on the use of other drugs, the interaction variables were added separately to the previous model. This showed that there is no significant interaction between positive expectations (OR = .970, $p = .118$, CI = [0.933, 1.008]), or negative expectations (OR = .991, $p = .516$, CI = [0.965, 1.018]), and the use of other drugs. Thus, the relationship of positive and negative expectations on intention to use alcohol does not depend on whether or not the early adult has used other drugs.

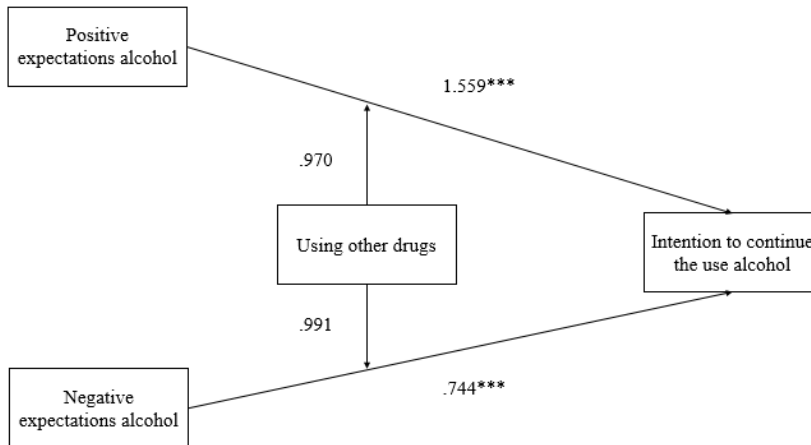


Figure 2. Main effects and interaction effects of expectations about alcohol on intention to use alcohol.

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

Intention to continue the use of XTC

Main effects. Logistic regression analyses showed that there is a significant effect of positive (OR = 1.447, $p < .001$) as well as negative expectations (OR = .674, $p < .001$) on the intention to continue the use of XTC. This indicates that early adults with positive expectations are more likely and with negative expectation are less likely to have an intention to continue the use of XTC. The OR's show that the effect of positive expectations is somewhat greater than negative expectations on the intention to use XTC.

Table 7

Logistic Regression of Positive and Negative Expectations About XTC on the Intention to Continue the Use of XTC

	OR	<i>p</i>	95% CI
Gender	1.695	.012*	[1.124, 2.557]
(ref = women)			
Age	.858	.009**	[0.765, 0.963]
Educational level		.000***	
(ref = WO master)			
MBO	.285	.001**	[0.132, 0.614]
HBO bachelor	.918	.749	[0.542, 1.553]
WO bachelor	1.194	.541	[0.676 2.112]
Positive expectations	1.447	.000***	[1.318, 1.588]
Negative expectations	.674	.000***	[0.614, 0.740]

Note. OR = odds ratio; CI = confidence interval.

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

Moderation effects. To test whether the relationship of positive and negative expectations on intention to use XTC is dependent on the use of other drugs, the interaction variables were added separately to the previous model. This showed that there is no significant interaction between positive expectations (OR = .993, $p = .633$, CI = [0.965, 1.022]), or negative expectations (OR = 1.040, $p = .024$, CI = [1.005 1.077]), and the use of other drugs. Thus, the effect of positive and negative expectations on intention to use alcohol does not depend on whether or not the early adult has used other drugs.

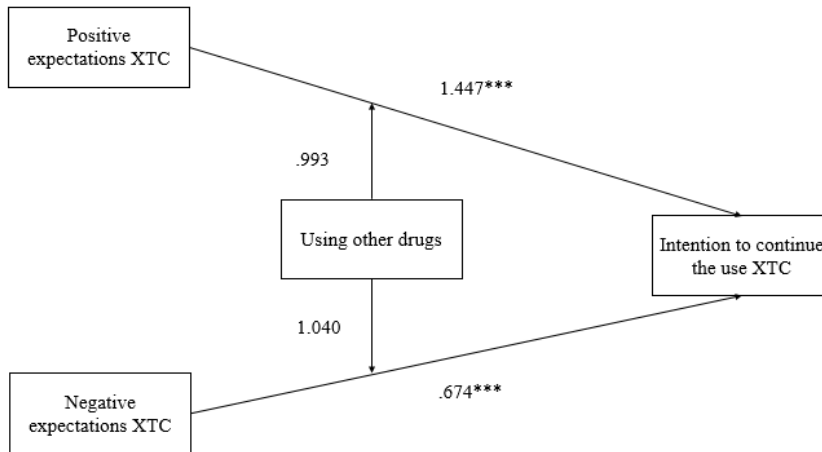


Figure 3. Main effects and interaction effects of expectations about XTC on intention to use XTC.

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

Discussion

The aim of this study was to investigate how positive and negative expectations play a role in the intention to continue the use of alcohol and XTC and if this was possibly moderated by the use of other drugs. The results show that positive and negative expectations have a significant relation with the intention to continue the use of both alcohol and XTC. In line with our hypothesis, having more positive and less negative expectations relates to a greater intention to continue the use of alcohol and XTC. This relation was independent of the use of other drugs among early adults.

The current study found a significant positive relationship between positive expectations and intention to continue the use of both alcohol and XTC. This means that the more positive expectations someone had about using both substances, the greater intention they had to continue the use. In other words, positive expectations about alcohol and XTC will increase the intention to use again. For negative expectations, this relationship was found significantly negative. This means that more negative expectations lead to a lower intention to continue the use of alcohol and XTC. Interestingly, the influence of positive expectations was greater compared to negative expectations for both substances, suggesting that positive expectations outweigh the negative expectations in relation to the intention to use alcohol or XTC again. This means that when someone has both positive and negative expectations, the positive ones have a stronger influence than negative expectations on the intention and therefore someone, when they have the same amount of positive and negative expectations, will have an intention to continue the use of alcohol or XTC. This may be explained by adolescents being focused on the prospect of beneficial outcomes rather than the accessory

costs (Galvan, Hare, Voss, Voss, Glover, & Casey, 2007). Besides, risk taking is biological driven during adolescence (Steinberg, 2007). Another explanation lies in adolescents' sensitivity to immediate consequences of their decisions (Mitchell, Schoel, & Stevens, 2008). The positive expectations, in other words expected beneficial outcomes, included in this study are mostly short-term, like having fun with friends and decreasing stress and the negative expectations, the costs, are more long-term, like emotional or psychical damage. Because of their short-term thinking, the positive, short-term, expectations play a more important role than the negative, long-term, expectations.

For alcohol, these findings are in line with previous research. For example, Brown (1985) and Madden and Clapp (2019) found this positive relation for the relationship between positive expectations and intention. For negative expectations, Leigh and Stacy (2004) and Paswan, Gai and Jeon (2015) for example found this negative relation for the relationship between negative expectations and intention to continue the use of alcohol. Much less was known about the relationship between expectations of using XTC and the intention to continue the use of XTC. However, in this study identical to the findings on the intention for alcohol use, positive expectations about XTC relate to a greater intention to use XTC again, while negative expectations relate to a lower intention.. In addition, positive expectations about XTC are also more strongly related to the intention to use again compared to negative expectations

Against our expectations, the influence of expectations on the intention to use was independent of the use of other drugs. It was our belief that this would have increased both relations between expectations and intention because the use of other drugs leads to more normalization of drug use and to using more other drugs as well, sometimes even to combining them at the same time (Østergaard, Østergaard, & Fletcher, 2016). However, we did not measure if the use of other drugs took place in combination with alcohol and/or XTC. It is known that measurement of poly drug use is, for example, important for observing trends in prevalences (Karjalainen, Kuussaari, Kataja, Tigerstedt, & Hakkarainen, 2017). The participants could have used the other drug(s) at any other time in their lives, instead of at the same time. Thus, maybe there is a difference influence of combining drugs at the same time and lifetime use on the relationships between expectations and intention to continue both alcohol and XTC. For further research, it could be interesting to look at the difference of lifetime other drug use and other drug use at the same time. In this case, you can investigate if there are different effects of lifetime and same time use of other drugs on the relationship between expectations and the intention to continue substances.

Strengths and Limitations

First of all, the results of this study confirm the outcomes of earlier research and because of this study, it can be concluded that these findings are representative for Dutch students as well. The current study is based on a large sample size with participants from the Netherlands, yet the sample does not seem to be representative of the population in respect to for example gender. Besides, concrete monitoring of alcohol and drug use among all students, so age combined with specific educational levels, in the Netherlands is not available. Comparable samples indicate that the percentages of the use of alcohol are close to emerging adults who frequently visiting clubs, parties or festivals, but the percentages are not the same for XTC (Trimbos Institute, 2019). Furthermore, alcohol use and XTC use prevalence rates are higher in the current study compared to a study conducted among applied science students: 97.12% versus 88% for alcohol use and 35.25% versus 7.8% for XTC use respectively (Profielen Magazine, 2019). A more heterogeneous sample of students is needed to investigate the possible other relationship between expectations and intention and to monitor more prevalence numbers of alcohol and substance use among students.

In addition, the measurement of intention is now included as a dichotomous variable, whereas a continuous scale about the level of intention would better reflect the intentions of early adults. Furthermore, the expectations included for both positive, and negative variants, different kind of expectations. Mental, physical and social expectations were included and therefore the combination of expectations is very broad. These expectations were chosen after interviewing emerging adults from 18 to 25 years old about their substances use. As such, these expectations are real expectations from users and in combination with the many options, it can be concluded that these expectations are representative for the sample. Only the reliabilities of both expectations for alcohol and XTC were not very high, because the chosen expectations were used in this way for the first time in this research. Further research is needed to test and make decisions about deleting and adding expectations for increasing this reliability.

Lastly, this study used a cross-sectional design. Therefore, no conclusions can be drawn about the direction of the effects. Longitudinal research would be needed to draw conclusions about the effect of expectations on the intention to use substances.

Conclusions and Implications

The present study investigated the influence of positive and negative expectations on the intention to continue using alcohol or XTC and if this is possibly moderated by the use of other drugs. Both positive and negative expectations were related to intention to continue use

of the substance, where positive expectations seem to outweigh the negative ones. For future research, we should prioritize exploring other elements of substance use, such as how often, where and with whom substances are used. This in combination with the question about the role of expectations in these matters. Learning more about these aspects of substance use would be very valuable, because, when combined with expectations, this knowledge would give us a complete picture of students and their substance use. In turn, this could then play a role in intervention and prevention programs, making them more effective by adapting them to students' attitudes about drugs.

Finally, the finding that positive as well as negative expectations play a role in the intention to continue the use of alcohol and XTC is important knowledge for intervention and prevention programs. It implies that it is important for intervention programs to include the role of expectations, and to address the importance of positive expectations that youth can have about the use of the substances in particular. One idea would be to look at existing programs and how positive expectations are taken into account in these programs, such as whether they are mentioned, discussed with the group, etc. If there are only a few programs that take positive expectations into account, it would be interesting to include positive expectations in the development of new programs in the Netherlands. Besides that, it is interesting to investigate if there is any research about positive expectations being an actual effective component in these programs. In the end, there must be more focus on positive expectations in research and programs, but we should not forget about the role of the negative expectations either. In that way, that focus will hopefully lead to a decrease of the use of alcohol and XTC, and maybe other substances as well, among emerging studying adults in the Netherlands.

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Appendix A

Justification interdisciplinarity

The present study looks at the expectations regarding alcohol and XTC use (A & X) of emerging adults and their role in people's intention to continue using these substances. It is interesting to consider how the results influence different levels of development of a human being. Bronfenbrenner and Morris (1998) introduced these levels in his ecological model of human development. The model provides a framework for exploring how these levels interact with each other. First, present study emerges on an **individual level**, namely that it is about personal expectations and the person has the intention or not, which is related to personal characteristics and preferences of the person in question. The **microsystem** emerges because substances can also be used by, for example, direct family and friends. These two levels interact with each other and therefore influence expectations and intention. Although present study does not include the factors family and friends in the final research, awareness of the influence of these factors is necessary. After all, the relationship between the individual and their environment is reciprocal, as both influence one another. The final results can be taken into account when looking further into this reciprocal relationship and investigating whether the relationships of expectations are influenced by, for example, family and friends. The **mesosystem** revolves around how contacts of an individual have direct and indirect influence on each other and thus on the individual. This interaction influences, in this case, the expectations of A & X consumption and also the intention of use. A system that is of direct influence on but not influenced by the individual is the **exo-system**, which revolves around, for example, local politics and social services. This plays a direct role on both the expectations of A & X consumption and the intention of use, but the individual has no influence on this themselves. It is an one-sided relationship, but it does play a role in the expectations and intentions for use. Society is constantly changing, which influences cultures. Ideas about the use of A and/or X thus change, and access to these substances as well. This takes place in the **macrosystem**. Although this will mainly have an indirect influence on the expectations of an individual, it is important to be aware of this influence and for generalization of the results of this research. The present study takes place in the Netherlands and here, other rules and ideas than in other countries apply to the use of A & X, like age or the testing of XTC. Through the use of different systems and the interaction between these systems, interdisciplinarity is central to this research.

Appendix B
Contract research project (RIT)

Research Project Agreement

Student:	Michelle van der Horst
Graduation variant:	RIT/Master's in Youth Studies
Supervising lecturer:	Ina Koning
Tel:	030 253 3488
Faculty:	faculty social and behavioral sciences
Second assessor:	Prof. dr. Tom ter Bogt

Internship information

Institution:	Trimbos Institute
Address:	Da Costakade 45
Postcode and Town/City:	3521 VS Utrecht
External supervisor:	Martha de Jonge
Starting and ending dates:	05/02/2019-28/06/2019

Agreements

Submission date for work plan/research proposal: 22/02/2019

Period during which the lecturer will review the final product and any interim products:

05/02/2019-28/06/2019

Number of working days/working hours per week: 2.5 days per week (in combination with other internship activities, 5 days)

Topic: The relationship between positive and negative expectations with the intention to continue the use of alcohol and XTC.

Agreements concerning papers to be submitted in the interim:

Final master thesis

The client (host institution or faculty/programme) will provide the facilities needed in order to conduct the assignment properly.

If applicable:

Form and frequency of supervision within the host institution:

Every week a (short) meeting between student and the supervisor of Trimbos Institute (Martha de Jonge).

Number of conferences between the supervising lecturer and the supervisor within the host institution: 2

Prescriptions concerning the confidentiality of information:

In consultation with Martha de Jonge (Trimbos Institute)

Ownership of the research data, in the event of deviation from the rule (see 16):

Trimbos Institute

Right to publish based on the research data: Yes

Signed as approved,

Location/date: Utrecht, 13/02/2019

Signature of the student:

[]

Signature of the supervising lecturer:

[]

Signature of the external supervisor (if applicable)

[]

Signature of the Course Coordinator

[]