

# Drinking until Intoxication

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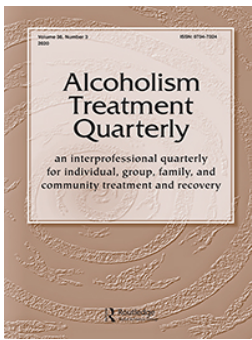
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## Drinking until Intoxication: A Qualitative Study among Underage Adolescents Admitted to the Emergency Room

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### ABSTRACT

This study explored factors that contribute to an alcohol intoxication resulting in Emergency Room (ER) admission among underage adolescents. We conducted qualitative interviews with 14 adolescents (14–18 years old) who experienced an alcohol intoxication requiring ER admission. Motivations for drinking were individual (e.g. curiosity) or social (e.g. having fun). While circumstances and motivations were comparable with other studies among (binge) drinking youth in general, most adolescents in this study did not drink with the intention to get drunk. They often unknowingly and unintentionally crossed their limits because they had not enough knowledge or experience to foresee the consequences.

### KEYWORDS

Alcohol intoxication; binge drinking; adolescents; risk factors; qualitative

## Introduction

Despite decreases in adolescent drinking behavior in several European countries (ESPAD Group, 2015), the number of young people admitted to the ER due to an alcohol intoxication appears to be increasing (Bitunjac & Saraga, 2009; Callens, Van Hal, & De Dooy, 2015; Groß, Mick, Reichert, & Zimmermann, 2016; Grüne et al., 2017; Kuželová et al., 2009; Van der Lely, Schreurs, Van Hoof, & Van Dalen, 2016). Short term effects of drinking excessively in adolescence include increased risk of interpersonal violence, risky sexual behavior, and attempted suicide (Lepušić & Radović-Radović, 2013; Miller, Naimi, Brewer, & Jones, 2007; Stolle, Sack, & Thomasius, 2009). In the long term, adolescent drinking is associated

with diminished school performance, alcohol-induced brain damage, depression, and alcohol dependence later in life (Bonomo et al., 2001; National Institute on Alcohol Abuse and Alcoholism, 2003). Drinking until intoxication resulting in unconsciousness can be seen as an extreme result of binge drinking. Binge drinking is defined as drinking four (for women) to five (for men) alcoholic drinks in a row (Wechsler, Dowdall, Davenport, & Castillo, 1995). Although (binge) drinking in adolescents in general has been widely studied, much less is known about severe alcohol intoxication leading to unconsciousness for which an Emergency Room (ER) admission is needed (Weinberg & Wyatt, 2006).

In the Netherlands, the number of adolescents ending up at an ER due to an alcohol intoxication increased from 800 in 2006 to 1,400 adolescents in 2016 (Nijman & Valkenberg, 2016; Valkenberg & Nijman, 2017). In Germany, the number of adolescent hospital admissions due to alcohol intoxication increased from approximately 9,500 to 26,600 between 2000 and 2012 (Grüne et al., 2017), the same trend has been seen in other European countries; Belgium (Callens et al., 2015), Croatia (Bitunjac & Saraga, 2009), and Slovakia (Kuželová et al., 2009).

Reports about determinants of binge drinking generally refer to personality characteristics such as impulsivity (Dawe & Loxton, 2004), positive alcohol expectations (Jester et al., 2015), or circumstantial influences such as peer and parental drinking habits (Patrick & Schulenberg, 2014). However, it is unknown whether these determinants are also relevant for severe alcohol intoxication leading to unconsciousness and ER admission. Research on the determinants of binge drinking requiring hospital admission has so far only focused on quantitative differences, including blood alcohol levels, age, gender, and level of education (Bouthoorn, van Hoof, & van der Lely, 2011; Groß et al., 2016; Grüne et al., 2017; Van Zanten, Van der Ploeg, Van Hoof, & Van der Lely, 2013; Weinberg & Wyatt, 2006). In 2017, almost one in four people attending the ER in the Netherlands because of an alcohol intoxication was younger than 18 years old. Most of them were male (55%) and aged 16 or 17 (Valkenberg & Nijman, 2018). Despite the importance of these numbers, they do not provide an understanding of the experiences of adolescents themselves regarding their intoxication. More insight into severe alcohol intoxication among underage adolescents is needed to aid the development of prevention strategies and treatment (Groß et al., 2016; Van Zanten et al., 2013).

Different from other studies focusing on binge drinking among adolescents in general, this current qualitative study focuses specifically on cases where binge drinking led to an alcohol intoxication. By only including underage adolescents who were admitted to the hospital as a result of their alcohol intoxication, this study provides first indications of circumstances,

motivations, causes, and possible risk factors for binge drinking conducive to intoxication.

## Materials and methods

The ethical review committee of the University of Amsterdam granted institutional review board exemption (number W17\_234 # 17.272).

Semi-structured interviews, taking approximately 45 minutes, were conducted with 14 adolescents from the Netherlands that had been admitted to a hospital due to an alcohol intoxication in the past 18 months. In total, approximately 80 adolescents were asked to participate in this research. The sample was recruited by four employees of the following hospitals in four different municipalities spread around the Netherlands: Erasmus MC in Rotterdam (638.179 inhabitants), Academic Medical Center in Amsterdam (856.536 inhabitants), Deventer Hospital in Deventer (99.735 inhabitants) and Tergooi Hospital in Blaricum (10.721 inhabitants). These sites were chosen to get national coverage and to include both large and small municipalities. During the time of the interview, adolescents were between 14 and 18 years old. The sample included 9 boys and 5 girls. All names of adolescents are changed to preserve anonymity. Eligibility criteria for participants were: between the age of 13 and 17 at the time of the intoxication and admitted due to an alcohol intoxication in the past 18 months in one of the cooperating hospitals. This study focused specifically on adolescents aged 13–17, which is below the legal drinking age of 18 in the Netherlands. By telephone, participants were asked to take part in the interview by doctors or social workers of the hospital they had been admitted to. The research team then received a secured list with names and telephone numbers of potential participants. The team sent them and their parent(s)/guardian(s) an information letter stating a researcher would contact them by phone to ask any further questions and, when they decided to participate in the study, make an appointment for an interview. Participants signed an informed consent form before taking part in the interview. Parents of participants under the age of 16 also signed an informed consent form. Participants received 15 Euro as reimbursement.

Interviews with participants took place at their homes, at a rented neutral space, or at the research institute. They were conducted by the first author, who is a female junior researcher trained in qualitative interviewing during her study in Cultural Anthropology and has since (2014) specialized in interviewing vulnerable groups. During all interviews no one else was present, to make sure respondents could speak freely. All interviews were audio recorded (with permission from participants) and transcribed verbatim. The interviews covered different aspects, starting with the day of the alcohol intoxication as a specific topic (e.g. “can you describe what happened that day?” and “how did you feel

that day?”), and followed by more general topics, including parents and friends (e.g. “did your parents allow you to drink?” and “how do your friends think about drinking alcohol”) and their experiences and knowledge regarding alcohol in general (e.g. “what is a normal age to drink?” and “did you drink before?”). Also, in the beginning of the interviews, adolescents were asked about their demographic characteristics (e.g. age, level of education, living situation).

A thematic inductive coding process was applied which is a way of summarizing how participants talk and think about a subject without trying to fit the data into a preexisting theory or framework and without trying to develop theory (Green & Thorogood, 2014). The main topics of the topic list served as initial main themes during the analysis, especially those relating to drinking behavior on the day of the intoxication: circumstances, motivations and causes according to adolescents themselves. The data were analyzed by using NVivo 11, a qualitative software program. This was based on two main themes: circumstances and risk factors. In subsequent coding phases, open coding revealed several subthemes. Open coding is a line-by-line analysis which opens up or “factures” the data in as many potential codes as possible (Green & Thorogood, 2014). After that, axial coding led to two new main themes. Axial coding uses the open codes and looks for relationships between them. This resulted into four main themes: circumstances (e.g. drinking location), motivations for drinking (e.g. curiosity) and causes of the alcohol intoxication (e.g. drinking more than usual) on the day of the intoxication and possible (indirect) risk factors (e.g. lack of parental rules). After coding all transcripts, matrices were produced in which the responses of the participants were summarized according to the themes and subthemes (Ritchie & Spencer, 1994). This was used to detect patterns within and between participants. The original wordings of participants and the contexts of their remarks were regularly checked by consulting the full transcripts. Coding was done by the first author; the coding tree and the analyses were discussed thoroughly with the second and third author and changes were made in the coding, based on consensus reached during these discussions.

## Results

Results are presented in four sections based on the four main themes. First, we discuss the circumstances under which the alcohol intoxication occurred. Second, we explore motivations for drinking on the day of the alcohol intoxication and, third, causes of alcohol intoxication according to adolescents themselves. Finally, we examine possible risk factors contributing to an alcohol intoxication among adolescents. Characteristics of the adolescents who took part in the study can be found in [Table 1](#). Most had

**Table 1.** Characteristics of participants.

<b>Age on day of intoxication</b>	
13	1
14	2
15	5
16	2
17	4
<b>Level of education</b>	
Preparatory secondary vocational education	5
Senior general secondary education	1
University preparatory education	5
Senior secondary vocational education	3
<b>Living situation</b>	
With both parents	6
Divorced parents, living with both	2
Divorced parents, living with one and no contact with other	5
Assisted living	1
<b>Drinking experience before intoxication</b>	
None	2
Incidental (1–4 times in total)	6
Monthly drinking	2
Weekly drinking	4
<b>Had been drunk before</b>	
Yes	6
No	7
Not sure	1

incidental drinking experience (1–4 times in total) before the intoxication. About half had been drunk before.

### ***Circumstances during the alcohol intoxication***

The circumstances before and during an alcohol intoxication were notably diverse. Adolescents were often drinking prior to or while clubbing (7), at home (5) or outside (2). All adolescents were drinking hard liquor, especially vodka (8). Hard liquor was frequently mixed with soda, but also drunk pure. Alcoholic drinks were usually available at a friend's home (8), at their own home (2) or bought in a club or liquor store (6), in some cases by using a borrowed identity card (2).

#### ***At home***

At home, there was a clear difference in activities according to the size of the group adolescents were in. In smaller groups (approximately 2–5 people), adolescents were drinking large amounts of alcohol while “relaxing” (e.g. watching a movie and gaming) or “doing nothing” (2). In bigger groups (approximately 6–20 people), adolescents were playing drinking games or celebrating a birthday at a friend's home (3).

## **Clubbing**

Other adolescents mentioned they were drinking prior to clubbing, which was planned in advance (7). However, while the majority was at someone's home or a party, Belle (F, 17) explained how she started to drink alone in her room before she went out with friends:

"I just had it in my room [wine], because I had a party [a while ago], so it was still there".

In addition, adolescents often entered clubs with a borrowed identity card or asked an older friend to buy them alcohol, so they were able to continue drinking in the club (4). Some adolescents were already unconscious before they even arrived at a party (2). For example Jan (M, 15), who was planning to go to a club with a big group of friends, but lost them on the way over because he was "too drunk". Eventually, he passed out on the street and was found by a passerby who called the police.

## **Outside**

Some young people reported they were drinking outside with friends, while they were just "hanging out" or "having fun" (2). While Orlando (M, 17) celebrated the holidays with some friends by drinking a whole bottle of cognac on his own during the day, he ended up alone passed out in a tram and did not remember what had happened.

## **Motivations to drink alcohol on the day of the intoxication**

### **Individual motivations**

The most commonly cited individual motivation of adolescents to drink alcohol was curiosity (3). A few adolescents planned to try hard liquor to find out what would happen or even to experience drunkenness for the first time (2). In these cases, binge drinking was not an accident, but planned. For example:

"I was just curious what it would be like to just be a little bit drunk, really" (Frank, M, 15).

However, drinking out of curiosity was not always strictly defined and could be influenced by circumstances. For instance Jake, who explained how he wanted to try out something new for himself, but also stated his friends did influence him by encouraging him to keep on drinking:

"I have no idea [why he started drinking vodka]. But the funny thing is when I took low-alcoholic drinks, for instance 12 and 20 percent, they all said, be careful. And this time, they said, go ahead, and then I passed out" (Jake, M, 14).

Drinking to forget about certain emotions or feelings that day was commonly linked to recent unpleasant events, for example feeling ill or having an argument. While drinking alcohol was described as a way to let go of certain



emotions like anger or sadness that day, it was used as a tool to express certain emotions as well. For example:

“Well ... yes ... I had been in a fight with my sister just before I went out [to go clubbing with friends] and then I had already had ... I had already started drinking. Because I was thinking, well, it was just, just a bit like a reaction of okay, we had a fight, and now I’m going to have a drink. I think I just felt very rebellious. Just, say, I’m going to misbehave myself for a bit” (Belle, F, 17).

Her initial motivation to drink with friends was influenced by emotions, which possibly resulted in drinking more alcohol than planned.

### ***Social motivations***

Social motivations were often described as drinking to have more fun with friends (5) or because everyone was drinking (3). Especially adolescents who were drinking prior to going out explained how drinking alcohol made everyone feel more relaxed which resulted in more fun and a better vibe. For example:

“Ehm ... Just for fun. To ... well ... it loosens everyone up a bit. And sometimes also because I like it, but ... yeah. For the most part for fun, for the parties” (Leon, M, 16).

Drinking because everyone was doing it was most often mentioned by adolescents with no or little experience (2). The common view for these adolescents was that drinking started due to a particular mood among the whole group, like boredom or a party mood, and they conformed to this situation. However, they denied any kind of direct social pressure and stated it was their own choice to drink. For example: “I shouldn’t have drunk so much, but everyone was drinking, you know, so then you let yourself go a bit, you just go along with it. [...] But there was no pressure that you had to go and drink” (Karel, M, 15).

## ***Causes of the alcohol intoxication according to adolescents***

### ***No experience and knowledge***

Adolescents who did not drink (much) before often mentioned a lack of experience and knowledge about alcohol limits (5). The overall view was that they could not have estimated their own limit and therefore could not have avoided drinking too much. The moment of unconsciousness was described as something that just happened and went really fast. For example:

“Well, it was just nice, really. And I really didn’t realize that it was getting to me so quickly. Yeah, that it would be so intense and this would happen” (Maartje, F, 14).

### ***Drinking more than usual***

Adolescents with more drinking experience often indicated they had consumed more alcohol than usual (3). Reasons for this varied, but most of them

referred to external factors: drinking hard liquor in big glasses, drinking too fast during a drinking game, or mixing too much alcohol with soda. Especially drinking games led to binge drinking hard liquor, for example:

“We were playing Ride the bus, that’s a drinking game. Normally you don’t play it with hard liquor, but we did. The game didn’t go very well for me, so I had drunk a lot” (Stijn, M, 15).

### ***Possible risk factors***

#### ***Hard liquor***

Besides drinking too much, adolescents were also drinking hard liquor on the day of the alcohol intoxication. Especially the taste of mixed drinks made this option more attractive than beer or wine. Moreover, some adolescents (2) explained that the inability to obtain or to legally drink any alcohol, motivated them to secretly get it from somewhere. Doing all this effort for low-alcohol beverages, like beer or wine, was not interesting enough; but for hard liquor it was.

#### ***Normalization of underage drinking***

Despite the legal drinking age of 18 years, the common view among adolescents was that 16 is a normal age to start drinking, for some of them even 14 or 15 (3). On the question whether alcohol intoxication can be avoided among other young people, the immediate response of most adolescents was “no” (8). Drinking was seen as something normal to do and frequently described as a part of being young and having fun. For example:

“There is no real reason [to drink alcohol]. I’m young. You are young and you want to party, I think it’s part of your life. Not really a reason, like, yes, I want to get drunk. But more like, you only live once, a bit of partying, a bit of fun” (Ruby, F, 15).

In addition, the age limit of 18 years was not taken seriously by the majority of adolescents (12). In their opinion, starting to use alcohol at a later age would only postpone the problem of not knowing your limit. Moreover, they thought that this age limit made drinking even more exciting, because it is not allowed.

#### ***Positive expectations about alcohol use***

Most adolescents considered alcohol prior to the intoxication as something fun or expected to experience the same positive feelings as in earlier experiences (9). Their overall expectations, regardless of their drinking experience, were positive and for some of them getting tipsy was even a goal. For example:

“When I did it before [drunk alcohol], it was very nice and fun, so I wanted to do it again” (Stijn, M, 15).

### ***No standard consumption limit***

Prior to their alcohol intoxication, adolescents considered being drunk not in the amount of alcohol someone consumed, but in certain behavior. Not knowing what you are doing, not acting like yourself or doing “stupid stuff” were described as their indicators someone drank too much. While not experiencing these actions themselves on the day of the intoxication, most adolescents kept on drinking (12). The overall view was that “too much” differs from person to person instead of there being a standard limit. For example:

“No [no maximum number of drinks as limit], because everyone reacts differently. Some people are still fine after 10 glasses while other people are all like woohoooo after just 2” (Ruby, F, 15).

### ***Lack of parental rules***

Most adolescents (9) indicated they did not have any serious conversation with parents, peers or others and did not receive any useful information about alcohol in the period before the intoxication. Some of them reported no clear rules. For example:

“Yes, my mother always said that you shouldn’t drink too much, to keep it fun. But what is fun for my mother, perhaps 3 glasses of rosé wine, young people don’t do that” (Jeffrey, M, 17).

Even when adolescents did remember their parents telling them not to drink before the age of 18 they seemed not to have considered this a clear rule and did not discuss alcohol use with their parents in a more general sense.

### ***Ineffective education***

Educational prevention programs that some adolescents had received at school before their intoxication, were in all cases described as useless or “too late” (7). Adolescents indicated it did not influence their opinion about alcohol and suggested more instructive programs to prevent adolescents from drinking too much. For example:

“Perhaps the awareness campaigns should emphasize more how to use alcohol. It’s fine to point out all the dangers, but I think it’s better to ... give you tips on what kind of glasses you should use. Yes, they say it, but there should be more emphasis on it. And eh ... that you shouldn’t mix stuff” (Jan, M, 16).

## **Discussion**

The aim of the current study was to explore circumstances, motivations, causes, and possible risk factors for alcohol intoxication requiring hospital admission among adolescents. While binge drinking can be planned, adolescents did not

plan to experience an alcohol intoxication. According to participants themselves, causes of an alcohol intoxication were often a lack of knowledge about alcohol limits, no experience, or drinking more than usual. Drinking to get drunk as part of a regular drinking pattern was rarely mentioned as a motivation for adolescents in this study, in contradiction with (binge) drinking adolescents who did not end up in a hospital (Coleman & Cater, 2005; Kuntsche, Knibbe, Gmel, & Engels, 2005; Szmigin et al., 2008).

Most adolescents were drinking at (someone's) home. They were often home alone with a big group of peers without parental control and a large quantity of alcohol. Other adolescents were drinking outside or in a club. These circumstances are quite similar to those among other (binge)drinking adolescents, who did not end up in a hospital, in both the Netherlands (Van Dorsselaer et al., 2016) and other countries (Ander, Abrahamsson, & Gerdner, 2015; Demant & Østergaard, 2007; Storrø, Rossow, & Pape, 2010). The main drinking motivations for adolescents in our study were social motivations like having more fun with a large group of friends or conforming to peers, but also more individual motivations like trying out something new or coping with negative emotions. These motivations are quite comparable with motivations for drinking or binge drinking among youth in other studies (Coleman & Cater, 2005; Honess, Seymour, & Webster, 2000; Kuntsche et al., 2005; Szmigin et al., 2008).

In this study, adolescents who did drink to get drunk never experienced drunkenness before and started drinking out of curiosity. Most adolescents were often unknowingly crossing their own limit for several reasons (e.g. a drinking game), and got unintentionally drunk through binge drinking, which most likely led to the alcohol intoxication for which they needed to be admitted to the ER.

Several risk factors that may have contributed to an alcohol intoxication were found in this study. First, the assumption of having your own limit instead of a standardized limit of drinks seemed to contribute to excessive drinking resulting in an intoxication among adolescents without them being aware of it. Thereby, binge drinking was unknowingly normalized or even romanticized, where some adolescents experienced being tipsy before in an enjoyable way. However, an alcohol intoxication caused by binge drinking was not something they imagined would happen to them. This might call for a focus on normsetting among adolescents (Lemmers, Mulder, Onrust, Verdurmen, & Van Hasselt, 2016) and for re-framing "binge drinking", since this term may not reflect the reality of young people's experiences involving alcohol use (Szmigin et al., 2008).

Another possible risk factor was that none of the adolescents thought the age limit of 18 helped to avoid underage drinking. According to adolescents, it was very easy to obtain alcohol from somewhere else, when they were not

able to buy alcohol in a liquor store or a club. Adolescents were all drinking hard liquor, consciously chosen above low-alcohol beverages, which, especially in combination with their binge drinking, contributed to a higher risk of alcohol intoxication. While several studies (Van Hoof & Gosselt, 2013; Willner, Hart, Binmore, Cavendish, & Dunphy, 2000) and campaigns (Trimbos Institute, 2017) focused on the prevention of underage adolescents buying alcohol in stores, this study, as well as other studies, show how most adolescents purchased alcohol through (older) friends and consumed it at someone's home (Van der Lely et al., 2016; Van Zanten et al., 2013). Therefore, it seems important to warn parents against leaving their underage children alone with access to alcohol, especially during weekends, and to inform legal-drinking peers of the effects of providing hard liquor to underage friends.

Also, adolescents indicated that their parents did not give clear rules about alcohol. Some of them explained how their parents did not verbally communicate alcohol-related rules or did not repeat them in the long term. Other studies show the importance of strict parental rules as well as involving parents in prevention programs to diminish or control alcohol use among underage adolescents (Koning et al., 2009; Van Der Vorst, Engels, Meeus, & Deković, 2006). Since parents have a strong influence on their child's alcohol use, it seems necessary to involve them in minimizing the chance of an alcohol intoxication among underage adolescents.

Furthermore, adolescents in this research suggested how earlier and more instructive education programs at school could be more effective instead of only factual information about the risks of alcohol use. This was also found in other research, explaining the effectiveness of harm reduction programs among young people by acknowledging the importance of the adolescent's role in decision-making about their own health and providing early skills to reduce alcohol-related harm (Coleman & Cater, 2005; Leslie, 2008; McBride, Farrington, Midford, Meuleners, & Phillips, 2003). This approach, aiming for safer or more sensible drinking among minors, should not be directed to all adolescents (universal prevention), but only to adolescents with high risk characteristics (targeted prevention) (Lammers, 2019).

### **Limitations**

We interviewed 14 adolescents, which gives a first indication of circumstances, motivations, causes, and possible risk factors for alcohol intoxication requiring hospital admission, but is not enough to claim saturation or generalizability of the results. As can be expected, it proved very difficult to find adolescents who wanted to participate in our study. Also, the recruiting hospitals may have been reluctant to approach adolescents living in an assisted living facility, so only one adolescent with this living situation was

included in our study. This limits the generalizability of our study. Finally, this study required a retrospective approach, which might have led to recall bias among adolescents. This could have influenced certain answers, since adolescents may have reinterpreted or left out certain aspects. However, questions were often asked multiple times in different ways during the interview to check if answers would be in line.

## **Conclusions**

Adolescents who experienced an alcohol intoxication requiring ER admission seem to be a heterogeneous group, including both adolescents with no or little experience in drinking and those who are drinking on a regular basis. Circumstances and motivations do not seem to differ much from those of other drinking adolescents in general. Interestingly, most adolescents in this study did not drink with the intention to get drunk as part of a regular drinking pattern, in contradiction with binge drinking youth in general. Self-reported causes of alcohol intoxication that led to hospital admission were drinking more than usual or having no experience or knowledge about alcohol limits. Possible risk factors contributing to an alcohol intoxication among adolescents were drinking hard liquor, the normalization of underage drinking, positive expectations about alcohol use, no standard limit, a lack of parental rules and perceived ineffective education. Overall, the study adds to the deeper understanding of the reasons behind alcohol intoxication leading to ER admission among adolescents. This knowledge offers starting points for prevention measures that aim at increasing the awareness of the risks of drinking among adolescents and their parents.

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