

Bachelor Thesis Final Version

**Higher education students' decision-making about
drug use: How does this relate to their level of health
literacy?**



Colophon

Title:	“Higher education students’ decision-making about drug use: How does this relate to their level of health literacy?”
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Abstract

Drug use has been extremely normalized among young people nowadays, and an increasing number of people have used drugs in the past 12 months. This process has been especially relevant in a student city like Groningen since drug use in Groningen has been found to be the highest in the Netherlands. Nevertheless, it is relatively unclear whether higher education students can make well-informed decisions when it comes to drug use and if health effects are taken into consideration in the decision-making process.

Therefore, this research will examine whether higher education students in Groningen know about the risks and negative effects of drug use, and are able to make well-informed decisions about drug use, taking all the influencing factors on their decision-making into account. Furthermore, the influence of health literacy on the decision-making process of drug use among higher education students in Groningen will be examined.

A qualitative research approach was adopted, conducting semi-structured in-depth interviews with 8 higher education students about their decision-making process of drug use. The following themes were identified; motives, opinions, influencing factors, knowledge about risks, prevention, and health literacy. The results were coded and analysed which resulted in the following outcomes.

Higher education students in Groningen possess adequate knowledge about the risks of drug use but chose to ignore the possessed knowledge because social factors were more influential in their decision-making process.

Keywords: Drug use, Decision-making, Health literacy, Risks.

1.0 Introduction

1.1 Background

A definition of health literacy given by the Center for Disease Control and Prevention (2022) explains that health literacy is the ability of individuals to find, understand and use information and services to inform health-related decisions and actions. Health literacy is divided into three different levels;

- Functional health literacy which are the basic skills of reading, writing and numeracy necessary to function effectively in a health context.
- Interactive health literacy refers to more advanced cognitive literacy skills that with social skills, can be used to actively participate in everyday situations, extract information and derive meaning from different forms of communication, and apply this to changing circumstances.
- Critical health literacy refers to advanced literacy, cognitive, and social skills to analyse information and make informed decisions. (Nutbeam, 2000)

Nevertheless, research on European health literacy conducted by the WHO (2013) shows that the level of health literacy of approximately 50% of European citizens is inadequate or problematic, which results in riskier behaviour, poorer health, less self-management, and more hospitalisation and costs. While on the other hand, the strengthening of health literacy as an asset among the population has been shown to result in the building of individual and community resilience, help address health inequities and improve health and well-being (WHO, 2013). Therefore, the strengthening of health literacy among the population should be prioritized and promoted to experience the related positive effects.

Furthermore, according to the same report by the WHO (2013), the level of health literacy is influenced by multiple factors such as; socio-economic status, level of education, and age. Therefore, keeping the influence of the level of education in relation to the level of health literacy in mind, questions arise about whether students studying at a higher education actually have a higher level of health literacy when it comes to specific health decisions being made. Thus, the influence of the level of education compared to the level of health literacy can be questioned.

Besides the stated dilemma above, a report by water research institute KWR (2022) which made use of chemical analyses of sewage water in order to collect data about the health and lifestyle of its inhabitants, concluded that the city of Groningen has the highest amount of drug use per capita among all other investigated Dutch cities. These worrying statistics in combination with data from Trimbos (2022) that show a steady increase in the use of several types of drugs among the Dutch population create questions about whether the relation between having a higher education and a higher level of health literacy actually exists when making choices about the use of drugs.

Research done by N. Nebhinani et al., (2013) concluded that the majority of German college students had adequate knowledge about the harmful effects of drugs but had limited information regarding treatment options. While according to P. Yadav & R. Parajuli (2021), who investigated the knowledge of students regarding the effects of drug abuse, 57.5% of the respondents had poor knowledge regarding drug abuse, 41.5% had satisfactory knowledge and 0.9% possessed good knowledge about the topic.

Furthermore, besides the influence of knowledge about the effects of drug use on the decision-making process, research done by Alhyas, L. et al., (2015) states other factors influencing the decision-making of substance use of adults. For example, the most influential factor in substance abuse is peer pressure because people find approval from their peers and consider it a symbol of group unity but mostly peers function as the access channel for obtaining drugs. Besides that, boredom, unutilized free time and lack of community-based activities are named as important factors influencing drug use.

Resulting from the theories and numbers stated above the relevance and importance of health decision-making when it comes to drug use among students becomes clear, and it can be questioned to what extent the level of health literacy positively contributes to well-informed decision-making.

1.2 Structure

Following this introduction, the research problem will be presented including the main- and sub-research questions. Afterwards, the theoretical framework is presented featuring relevant theories and concepts. Lastly, a conceptual model is presented including the expected outcomes of the qualitative research. Further chapters will include the methodology and the data collection process followed by the results and discussion part which will place the findings of this paper into the current academic position. Moreover, the challenges and limitations of this research will be discussed in combination with future research ideas and policy implications.

1.3 Research Problem

According to the National Institute on Drug Abuse (2020), a long list of negative consequences of drug abuse can be listed, such as; health issues like lung or heart diseases, stroke, cancer, or mental health conditions. While according to P. Yadav & R. Parajuli (2021), the consequences of drug use are not commonly known among students, and N. Nebhinani et al., (2013) concluded that knowledge about prevention and treatment is weak. While this knowledge might influence the decision-making process of individuals and their drug use. This results in the question whether higher-education students are able to make well-informed choices about the use of drugs and its related negative effects. Therefore, this paper will examine whether students living in the city of Groningen have a certain level of health literacy that helps them to make well-informed choices about the use of drugs beneficial to their physical and mental health through the following main research question:

To what extent does the level of health literacy of higher education students in Groningen influence the decision-making process of drug use?

To further investigate the main research question the following research sub-questions are proposed:

- 1) What are the motives and opinions of higher education students in Groningen about the use of drugs?*
- 2) Do higher education students living in the city of Groningen possess knowledge about the risks and effects of drug use?*
- 3) What are the main factors influencing the drug use of higher education students in Groningen?*

1.4 Expectations

Although expected that on average higher education students have a critical of interactive level of health literacy, it's not expected that this transfers positively to the decisions made by higher education students when using drugs. Additionally, it is expected that higher education students are familiar with the consequences of drug use. Furthermore, this research expects that higher education students chose to ignore the consequences of drug use when deciding whether or not to do drugs since N. Nebhinani et al., (2013) proved that students possessed knowledge about the risks and effects of drugs but the increase in drug use in the Netherlands founded by Trimbos (2022) contradicts these findings.

Finally, the specific choices on drug use being made are expected to be influenced by several other factors, mainly external factors as explained by Alhyas, L. et al., (2015). Although internal factors are expected to play a role as well.

2.0 Theoretical Framework

Health literacy

According to Nutbeam (2000) three different levels of health literacy exist being; functional, interactive and critical which are divided in terms of what certain individuals are enabled to do, as has been previously explained. Besides that, the WHO (2019) defines the influence of several factors on the levels of health literacy such as; socio-economic status, level of education, and age. Suggesting that a higher level of education has a positive influence on the level of health literacy. Furthermore, other research on the topic of health literacy names the influence of factors such as; age, gender, course of studies, parental education and socio-economic background (Kuhn et al., 2021). Moreover, according to Brabers et al., (2017), a positive association between the level of health literacy and the involvement of health decision-making can be observed.

Knowledge about drugs

It is still relatively unclear whether students are familiar with the negative effects of drug use on their physical and mental health, while a study by P. Yadav & R. Parajuli (2021), concluded that more than 50% of the students possessed poor knowledge about the consequences of drug use. A study by N. Nebhinani et al., (2013) concluded that college students possessed adequate knowledge about the harmful effects of drug use, but at the same time possessed inadequate knowledge about treatment options.

The influence of possessed knowledge of higher education students about the risks and negative effects of drug use is relatively unclear, which will be investigated by this research.

Motives

A lot of research has been done on the motives of students for the use of drugs such as; boredom, fun, or even peer pressure as explained by Schout, I. (2021). Motives can originate from internal or external factors. Research by V. Votaw, & K. Wiskiewitz, (2021) classify drug use into four motive subtypes: coping, enhancement, social and conformity. Besides, the four mentioned motive subtypes and other motivations of people to use certain drugs, research done by Alhyas, L. et al., (2015) states other factors influencing the decision-making of drug use of adults. For example, the most influential factor in substance abuse is peer pressure

because people find approval from their peers and consider it a symbol of group unity but mostly peers function as the access channel for obtaining drugs. Furthermore, boredom, unutilized free time and lack of community-based activities are named as important factors influencing drug use. (Alhyas, L. et al., 2015)

Prevention

According to Alhyas, L. et al., (2015), in order to tackle the main influences in the decision-making of drug use several implementations could positively contribute to the issue. For example, prevention programs, raising awareness, and anti-drug campaigns. Anti-drug campaigns are already implemented by several municipalities to de-normalise drug use. (Boonstra, 2021). Furthermore, research done by Brown et al., (2009) has proven that drug prevention programs result in beneficial effects and cause a mild reduction in new drug use. Nevertheless, it had little influence on those already using drugs. Moreover, according to Nozu et al., (2006) drug prevention programs focused on the social influence of high school students have shown remarkably effective, thus this might apply to higher education students in Groningen as well.

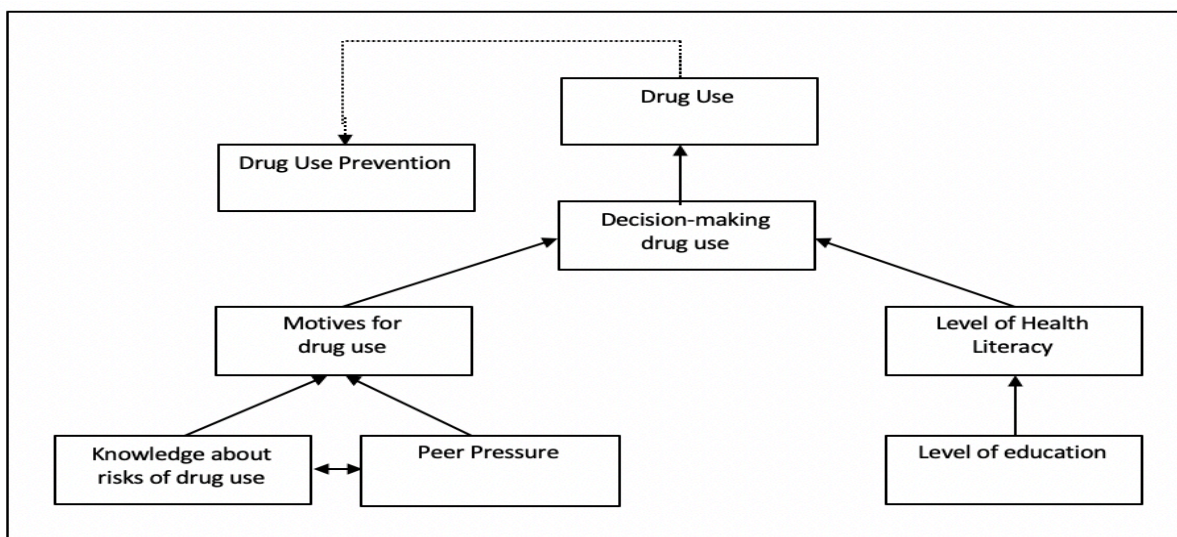


Figure 1: Conceptual model

The conceptual model shows the influencing concepts on the decision-making process of higher education students in the city of Groningen. The model contains the concepts of drug knowledge, peer pressure, motives, level of education, level of health literacy, decision-making, drug use and drug prevention. Together, all these concepts influence the drug use of higher education students in Groningen. On the left side, the influence of possessed

knowledge about drugs and peer pressure are connected to motives for drug use as explained by I. Schout (2021), V. Votaw, & K. Wiskiewitz, (2021) & Alhyas, L. et al., (2015). While on the right side, the level of education is connected to the level of health literacy since WHO (2019) & Kuhn et al., (2021) have shown a relationship between those concepts. Then, both sides are connected to the decision-making process of drug use and the actual drug use of higher-education students. Lastly, the concept of drug use prevention is shown to see the effectiveness and results of certain measures taken as explained by Boonstra, (2021), Brown et al., (2009) & Nozu et al., (2006).

3.0 Methodology

This research has made use of a qualitative research approach consisting of qualitative data collection. This research is primarily concerned with the process rather than outcomes and is mainly interested in meaning and experiences of people which according to Del Siegle (2022) fits within the qualitative research paradigm. Statements about the group of participants as a whole will be made in order to show trends within the population and link those trends to the existing literature on the topic.

Within the qualitative research, in-depth interviews with higher education students living in Groningen have been conducted with 8 participants to reach saturation.

The chosen way of in-depth interviews has efficiently contributed to the investigation of decision-making, motivations, and descriptions of higher education students living in Groningen. Furthermore, this mode of research has maximized the extraction of information from the participants, since the interview guide allows for a free flow of conversation. Moreover, the semi-structured interview gives the researcher the ability to design a guide which limits the possibility of going off-topic and collecting useless information. While it allows for more details given by the participants at the same time. (George, 2022). The interview guide [Appendix 1] is designed to follow the main concepts and theories introduced in the theoretical framework, which are the concepts of knowledge-, education-, motives-, influences-, opinions- and risks- of/on drug use are touched upon.

Participants have been recruited through convenience sampling. This means that the researcher made use of his personal network, social networks, or face-to-face communication to recruit participants. Participants have mainly been recruited by proposed participants by participants that have been interviewed before, which can be referred to as snowball- or chain-referral sampling. All the interviews have been conducted in the university library taking approximately 30 minutes each and recorded using the voice recording app enabled with transcription software.

After the interviews have been conducted all the interview recordings are transcribed and coded using Atlas.Ti, resulting in a categorization of the collected data into different themes. Finally, the coded transcripts have been examined to answer the proposed research questions. An inductive coding approach has been used since the codes have been derived from the previously discussed literature and show the main results found in the data. In the first round,

open coding was used to gather insight into the results. In the second round, the open codes were merged into categories which resulted in the identification of the main themes in the final round of coding.

The created coding tree can be found in the appendix [3] which shows the results of the analysis.

3.1 Ethics

Six ethical considerations have been taken into account during the research, being: Informed consent, voluntary participation, doing no harm, confidentiality, anonymity and only assessing relevant components. (Bhandari, 2021). Furthermore, the researcher kept in mind for what reason primary data has been collected and if it is applicable to the research the researcher is conducting. Moreover, since the researcher is an insider in relation to the topic, he kept a professional stance towards participants not influencing any of the answers given. Besides that, a consent form [Appendix 2] has been created to ensure the privacy of every participant.

3.2 Reflection

The quality of the collected data has been found to be sufficient, nevertheless, several challenges occurred during the data collection process. For example, when conducting the interviews, it sometimes was challenging to extract information from the participants since the topic is relatively sensitive. Therefore, the researcher had to make sure not to be judgemental in any questions asked and make sure the participants felt comfortable answering all questions.

Besides that, because of a free flow of conversation, the researcher had to sway through the interview guide in order to not touch upon the same topic twice. Furthermore, only one female participant has been recruited while it was preferred to have a more equal distribution of participants their gender.

4.0 Results

The following chapter is going to present the results and the discussion. The chapter is divided into the main themes found in the data collection process. The following themes have been found; Drug use, Motives, Opinions, Influential factors, Occasion, Knowledge about risks, Drug prevention, and Health literacy.

Quotes from the participants will be used in order to describe the themes illustrated in the results. Presented in table [1] underneath an overview of the participants can be found referring to numbers instead of names to ensure the participant's anonymity.

Participant	Age	Gender	Study
P1	22	Male	International business
P2	20	Male	Built environment
P3	24	Male	Built environment
P4	22	Male	International business
P5	22	Male	Law
P6	24	Male	Business
P7	21	Female	International business
P8	23	Male	International business

Table 1: Participant description

4.1 Drug use

This process of increased drug use can be observed in the participant's experiences as well. Multiple interviewees stated that since the pandemic started their use of drugs increased giving reasons such as; boredom, seeking excitement, and filling a hole. For example, P8 stated that:

“it increased a lot and I have seen a bigger increase with other people as well. Mainly because of boredom and wanting to have some excitement, people were depressed because of the pandemic so they want to have some fun and fill the hole.”

Nevertheless, this trend is only observable among participants who used drugs on a regular basis. Participants who occasionally used a type of drug did not follow this trend and their drug use was less influenced by the pandemic. Especially for participants who only used drugs at festivals no increase or decrease has been observed because there were no festivals organised which has been found to be a common motive to use drugs.

Besides the trends in drug use, a wide variety of types of drugs used has been observed. While several participants have never used any type of drug, other participants like P8 explained that he has used the following types of drugs: alcohol, nicotine, XTC, MDMA, weed, truffles, LSD, DMT, and ketamine. This is completely different compared to P5 who has never used any type of drug if you do not consider alcohol as a type of drug.

4.2 Motives for drug use

Motives for the use of party drugs differ widely from the motives for the use of psychedelics, motives for the use of party drugs were as follows: to get into a euphoric mood, increased energy levels, better feeling of the music, curiosity, forget about something and not wanting to be the odd one out. While most of the motives resulted from a positive reason created by the person itself, for example, P3:

“I use these drugs to experience their effects which positively influence my festival experience. For example, I feel happier, more energetic, and can party for longer.”

Some participants named a motive resulting from a rather negative influence such as P6:

“It’s considered normal to use drugs and considered abnormal not to use drugs since almost everyone is under the influence of some kind of drugs at these parties.”

This tells us that motives for the use of party drugs widely vary among its users and while the vast majority name the positive effects of the drug as the motive for their use others explain the huge influence of their social sphere of influence on their drug use. Even drug use as a response to negative emotions has been mentioned by P8:

“or even if you want to forget something but that’s a bad thing but it happens sometimes.”

Besides the motives for using party drugs, the reasons behind using psychedelics were significantly different. The main motives for using psychedelic drugs were as follows: curiosity, fun, and education. Besides using psychedelics for a fun experience P8 explained that:

“Psychedelics would be more used to learn something about yourself they can help with that. So I guess that’s more of a transformative experience, even if it’s a bad trip you learn from that as well.”

4.3 Influencing factors on drug use

Besides the given motives for the use of drugs, the majority of the participants were introduced to different types of drugs by their social circle. Several participants were influenced by their social circle to try weed in their childhood. Multiple interviewees state that because a friend introduced them to weed they were influenced to try it and without their influence, it would have taken longer for them to try it. For example, P8;

“Someone brought a joint let’s smoke it and then you try it without friends, it would have taken longer for me to try it”

This was not just the case with weed but with other types of drugs as well. This perfectly explains the main influence of young adults in their decision-making to try a certain drug for

the first time. Their decision-making process is mainly influenced by their social circle, this is especially prevalent at a younger age as perfectly explained by P1:

“I used drugs in specific settings Besides that, I was influenced by my friends since it is hard not to use any drugs if everyone else does. Nevertheless, a few years ago this really influenced my behaviour but that’s not the case anymore.”

Influencing factors on the decision-making process on drug use among the participants know wide variations, the most influential factor of drug use is the influence of the participants social circle. Especially the notion that peers function as an access channel for obtaining drugs. For example, multiple participants stated the influence of their friends in their decision to use drugs. P6 stated that:

“I would say they’re of a small influence since sometimes they might insist on using while I did not think about it and then I’m influenced by them by using it.”

Participant 8 confirms the notion by stating that:

“for example smoking a cigarette for themselves it influences me as well to do it. That’s the same with other types of drugs it just makes the decision easier. They are not pushing me to do something it just makes it easier if they want to do something I will join them.”

It perfectly follows the theory that they are not pressured into doing something but the decision is made easier because of the accessibility and creation of group unity.

Other participants describe this theory as well, although some used to agree with this the process of maturing made them realize there is no need to conform to the group and individual decisions can be made without consequences as well. As stated by P1:

“No one is being influenced in their decision-making about drug use. Nevertheless, this was not the case a few years ago when everyone used drugs when someone started using it but right now no one has to prove himself anymore and everyone can make their own decisions.”

Besides the influence of peers in the decision-making process, the risks of drug use are taken into consideration as well and multiple participants report not wanting to use a type of drug because of the possible risks and/or negative effects. Nevertheless, resulting from positive experiences with a drug a feeling of safety is created among several other participants once again proving the influence of someone's social circle in their decision-making. For example, P3 stating that:

“Since almost everyone I know has tried drugs and I have never heard of any bad trips whatsoever it almost feels like nothing can go wrong at all while in the back of my head I know there are some negative effects which could occur.”

This fake feeling of safety has been prevalent in several participants and in combination with poor knowledge about the possible risks and negative effects of drug use could result in poor decision-making since it has been observed that regular drug users are the only ones possessing good knowledge about the possible risks and negative effects of drug use. Opposed to the motives for the use of drugs, participants also mentioned motives for not wanting to use drugs. The most common motives for not wanting to use drugs were religion, not feeling the need to, having specific health conditions and the possible risks of drug use. All participants who have used drugs drew the line where the risks connected to a specific drug were considered too high, for example, GHB and heroin. The reasons behind this were the high addictive rates and the created images by the media which influenced the participants' view of the particular drugs. It can be seen that the more drugs a person has tried the further the line is drawn where it's considered too risky or harmful to try it.

4.4 Occasions and setting for drug use

Besides the observed difference in motives between party- and psychedelic drugs, there is a difference in location and occasion as well, according to the participants, party drugs were mainly used at: parties, festivals, raves or nights out while psychedelic drugs were mainly used at home or in nature.

4.5 Opinion on drug use

Furthermore, adding to the motives behind the use of specific drugs, opinions on drugs itself by the participants and their social circle were quite surprising.

As has been found by previous research, drug use has been normalized among young adults in the Netherlands, this has also been acknowledged by multiple participants. The participants agreed that there does not exist a negative stance towards drugs unless it is abused in any type of way. Nevertheless, the definition of drug abuse widely varies among the participants, but it came down to the fact whether it negatively affected other aspects of someone's life.

4.6 Knowledge about risks

When examining higher education students' knowledge about the risks of drug use multiple statements can be made. Higher education students' possessed knowledge about the risks of drugs is more nuanced than eventually thought. First of all, it can be said that most of the participants have basic knowledge about the risks and negative effects of drug use. The most common named risks were as follows: dehydration, heart- and kidney failure, depression, nausea, paranoia, and addiction which could result in neglect of everyday life. Nevertheless, there was a wide variety in possessed knowledge and it can be concluded that the participants who have used more types of drugs and more frequently had better knowledge about the risks and negative effects compared to the participants who never or occasionally used certain drugs. For example, P1 who tried second to most drugs of the participants stated that:

"I usually do my research on the specific drug and its effects and risks, in order to prepare myself as good as possible."

And P8 who used the most different types of drugs from all participants stating that:

"I do this research since it's something you put in your body, I find it interesting as well but if you want to use it I also want to know what it is and know about the risks since it's the best way to be prepared and informed."

While participants who used a drug a few times had little to no knowledge about the possible risks and negative effects. For example, P5 stated:

“I’m not that familiar with the specific risks of drug use, but I know about some of the general risks that are connected to drug use such as addiction. I also know it can be harmful to certain organs such as the liver and kidney.”

Since this participant has never used any drugs and among his social circle no-one did as well his knowledge about the risks and negative effects was very poor.

Therefore the participants and their social circles’ use of drugs, in particular the frequency of drug use, have a relationship with the participant’s knowledge about the possible risks and effects.

4.7 Drug prevention programs

After examining the risks and decision-making process of drug use, prevention is the next occurring theme. Although it has been proven that drug prevention programs positively contribute to the issue, it can be questioned whether the participants share the same opinion and feel like drug prevention programs could influence their decision-making in drug use. It can be observed that all the participants agree with the importance of drug education and/or prevention programs to contribute to the issue of drug use and drug abuse. Nevertheless, the participants are not quite aware of the most influential factor influencing the drug use of young adults which is social influence. Rather all participants feel like education on drug use would help with informing people about the risks and dangers of drug use which would then influence their behaviour to use a certain drug. As stated by P4:

“For me personally it wouldn’t really make a difference since I already did the research myself and its not going to change anything, but for other people, I feel like it would make a difference since I think a lot of people do not really know about the risks they just vaguely know about some of the dangers but that’s all.”

This perfectly sums up the shared opinion of all participants that education would prevent people from using drugs, but research has shown that this is not entirely true.

Nevertheless, P8 feels differently about the role of drug education, instead of trying to influence their decision not to do drugs he feels that people should be informed so they can use drugs in a safe way since he said:

“We should not try to ban it and say don’t do it but we should inform people about it. Because at the end of the day I think people are going to do it so it’s better to make sure they do it in a safe way.”

4.8 Health literacy

Following previous chapters, the relevancy of health literacy in relation to drug use has become clear and although it might be thought that factors like the level of education would positively influence higher education students’ decision-making, it can be concluded that this is more nuanced.

As can be observed by the decision-making process of P3 stating:

“There is not really a big decision process since among people my age it has become so normal to use drugs that it’s almost like you are having a drink. ... so I feel like you don’t really consider any negative effects it may have on you. I guess only the first time using a certain drug you would consider the effects and dangers.”

This emphasizes the poor-decision making skills of higher education students when it comes to drug use since they are aware of possible risks but chose to ignore them. Some participants do not even consider any risks but rather focus on the possibilities since P6 stated:

“But the thought process if I’m planning to use something, isn’t influenced by the health risks but rather if I have enough free days to recover from a good party.”

This once again proves well-informed decisions on the use of drugs are not stimulated by the risks and/or negative effects which might occur. This questions whether the participants have an interactive or critical level of health literacy.

5.0 Discussion

For this research, a qualitative research approach in the form of semi-structured interviews was chosen to gain profound knowledge about the decision-making process on drug use of higher education students in the city of Groningen. The research aim was to investigate how the process of drug use came about, examining the main influencing factors on drug use

among higher education students, and whether the level of health literacy contributes to well-informed decision-making on drug use. This was guided by the following research question:

To what extent does the level of health literacy of higher education students in Groningen influence the decision-making process of drug use?

The results show a trend of increased drug use, as well as a process of normalising the use of and conversation around drugs, which has also been found by Schouten (2021) & Trimbos Institute (2021). The motives behind the use of drugs were found to originate from internal reasons, nevertheless, the influence of an individual's social circle was not taken into account by the participants. While according to V. Votaw, & K. Wiskiewitz, (2021) & Alhyas, L. et al., (2015), someone's social circle is the main influence on the drug use of young adults, combined with factors like boredom which has been found in the results as well.

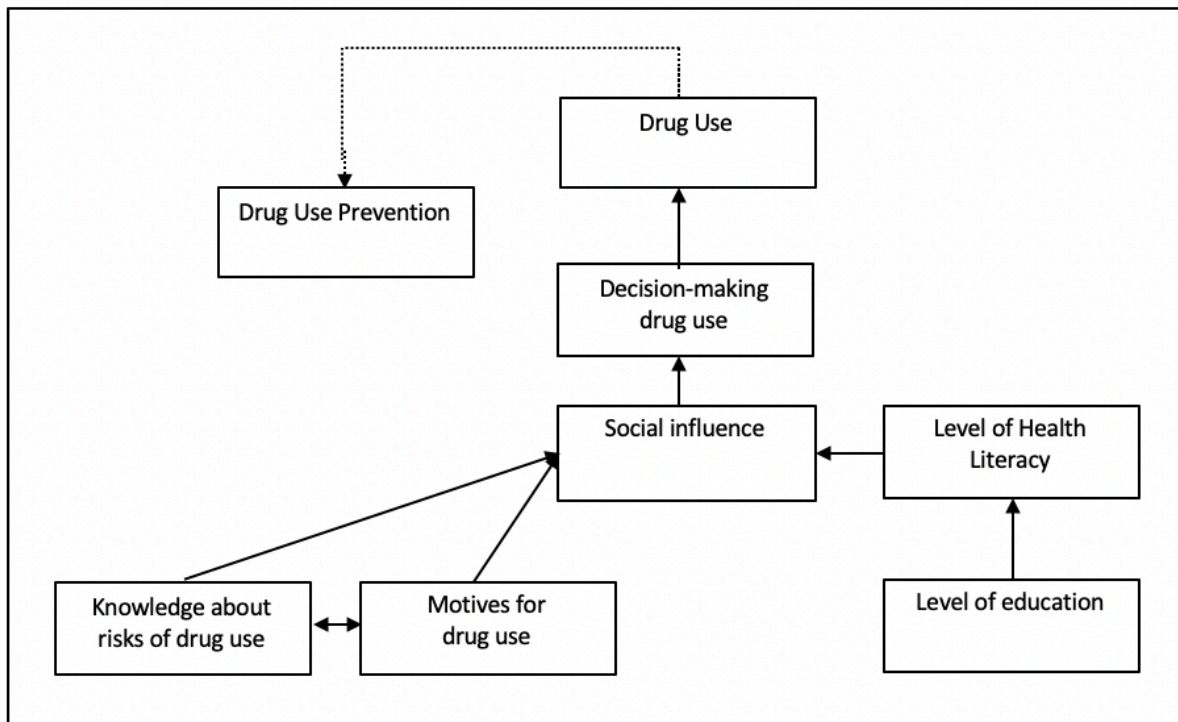
Apart from the motives and social influence of drug use, the knowledge about risks and negative effects has been examined and the findings by P. Yadav & R. Parajuli (2021) concluded that the knowledge about drug use is weak among college students. Nevertheless, these findings can be questioned when examining the results of the interviews. Instead, the findings presented by N. Nebhinani et al., (2013) can be acknowledged since adequate knowledge about drug use has been found. Nevertheless, there was a wide variety of possessed knowledge and the influence of possessed knowledge about the risks of drug use does not limit the drug use of higher education students.

Therefore, it can be questioned to what extent the level of health literacy influences the decision-making on drug use of higher education students. According to Nutbeam (2000), three levels of health literacy exist, and it can be argued that the participants either have a functional level of health literacy since they possess basic reading, writing and numeracy skills. Or have a critical level of health literacy since they are capable of analyzing information and using this beneficially. Nevertheless, although the participants are aware of certain risks it has been shown that this does not guarantee well-informed decision-making on drug use.

Since it has been proven that knowledge about the risks of drug use does not limit drug use, it makes you question whether drug prevention programs would actually contribute to the issue. It can be said that the participants feel the need for drug prevention programs but for the wrong reasons since they want to educate the youth about the topic while according to Brown et al., (2009), this only mildly reduces the use of drugs. Instead, drug prevention programs

should focus on social influences since Nozu et al., (2006) have shown remarkable effects using this method.

Following these results, the presented conceptual model had to be improved and the following adjusted conceptual model is presented.



5.1 Limitations

It can be concluded that the chosen research method has yielded the most valuable data in terms of validity. Nevertheless, reaching saturation and diversity among participants has been challenging for multiple reasons. For example, finding participants has been particularly hard as well as creating diversity among the participants in terms of gender and study program. Mainly because of the chosen way of snowball sampling which resulted in similar genders and study programs.

On the other hand, new findings have been found which contribute to knowledge gaps within the research area. This could positively contribute to the presented issue of increased drug use among students in the Netherlands, although general statements can not be made about other cities in the Netherlands.

5.2 Future research recommendations

Future research on the topic might include research on the differences in drug use between different genders, because of the low diversity among the participants. While they might be relevant to the conclusions drawn in this paper. Furthermore, research on the efficiency of drug prevention programs should be prioritized, focusing on the social influence of drug use instead of research on education about drugs itself.

6.0 Conclusion

This study attempts at answering the main research question: *To what extent does the level of health literacy of higher education students in Groningen influence the decision-making process of drug use?*

The answer to sub-research question 1:

What are the motives and opinions of higher education students in Groningen about the use of drugs?

Different motives and opinions were found, and a few statements can be made; classifications were made within types of drugs which were motivated by different reasons. Besides the internal motives for drug use, external factors are considered influential as well. Mainly the huge influence of the social sphere of influence on drug use. This corresponds with the theory by V. Votaw, & K. Wiskiewitz, (2021) explaining the relevance of social motives to use drugs. Furthermore, it has been found that drug use and the conversation about it has been normalised as has been found by I. Schout (2021).

Second, the answer to sub-research question 2: *Do higher education students living in the city of Groningen possess knowledge about the risks and negative effects of drug use?*

The theory by P. Yadav & R. Parajuli (2021) who concluded that the knowledge about drug abuse is weak among college students can be questioned. Instead N. Nebhinani et al., (2013) findings correspond with the results, higher education students in Groningen possess adequate knowledge about the risks of drug use. Nevertheless, there exists a wide variety of possessed knowledge among higher education students in the Netherlands.

When answering research-sub question 3:

What are the main factors influencing the drug use of higher education students in Groningen?

It can be concluded that someone's social circle is the main influence on drug use although the participants are not always aware of this. This follows the presented theories by Alhyas, L. et al., (2015) that the most influential factor of substance use is peer pressure, and this is confirmed by the participants as well.

Therefore, drug prevention programs must focus on the psychosocial factors behind drug use as proven by research by Botvin, G. (1986) who designed two models to contribute to the issue. Moreover, as explained by Brown et al., (2009) & Nozu et al., (2006), drug prevention programs focused on social influences are the most efficient in contributing to the issue.

Therefore, secondary school and/or higher education should take responsibility for educating their students about the main influences of drug use.

Lastly, As explained by the WHO (2013) the level of health literacy among European citizens is inadequate, A, Pedro. Et al., (2022) also concluded that the level of health literacy among higher education students is fairly poor. Although, it has been assumed that the level of higher education students results in an interactive or critical health literacy resulting from findings by Kuhn et al., (2021). & Bhatt, N. (2019), it can be concluded that the level of health literacy does not directly transfer to health decisions made on the topic of drug use. Although general statements cannot be made, the research indicates general findings.

Therefore, the conceptual model has been adjusted to show the relationship between the level of education and health literacy. Moreover, showing the significant influence of social influence on drug prevention and ultimately the decision-making process of drug use.

6.1 Policy Implications

Prevention programs should focus on the social influence of drug use among young adults in order to effectively contribute to the issue. Instead of prevention programs aiming at enhancing knowledge about the risks and negative effects of drug use. In spite of the fact that the sample population agreed on more education about drug use, the focus should not be on the drug itself but rather on the impact of social influence in the decision-making process of drug use in order to make young adults make well-informed decisions about the use of drugs.

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Appendix 1: Interview guide

- A- Good afternoon and thank you for taking the time to do this interview with me. The interview will take approximately 45 minutes and your answers will hopefully help me in my research project which tries to understand the decision-making in drug use of higher education students in the city of Groningen.
- A- First of all, I want you to start by signing the consent form I created saying you have read the consent form and consent to this interview. Furthermore, you must know that you, the participant, can end the interview at any time and all given answers are confidential and will only be shared anonymously. In order to transcribe the interview, I would like to record this interview, do I have permission to record this session?
-) Second, could you start with an introduction of yourself? Could you state your name, age, gender, study programme & place of residence?
-) The first topic I would like to touch upon is the consequences of drug use.
- A- Could you explain to what extent you are familiar with the possible short- and long-term risks of drug use?
- B- How did you gain knowledge about the risks of drug use?
- C- Have you ever experienced any side effects during or after the use of drugs? Please elaborate.
- D- Do the risks of drug use influence your decision-making about the use of drugs?
- E- Would education about drugs influence your behaviour when it comes to drug use? Please elaborate.
- F- To what extent do you distinguish different types of drugs and their risks?
-) The second topic I would like to touch upon is the decision-making about the use of drugs.
- G- First, could you describe whether you've ever taken/used drugs?
- H- -> If the participant has ever used any type of drugs
- I- What are your reasons/motives for the use of drugs?
- J- What types of drugs have you used, please elaborate on the setting and timing.
- K- How were you introduced to drugs in general? What has been your main influence to decide to try it?
- L- How often have you used drugs in the past 12 months? Has it increased or decreased, and why?
- M- On what type of occasions did you use these drugs?
- N- Could you explain the thought process before deciding to use any type of drug?
- O- Do you take risks of drugs into account when deciding to use drugs?
- > If the participant has never used any type of drugs
- if no, what are your reasons for deciding not to use drugs?

Olaf de Vries
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- Could you describe how the use of drugs is viewed by yourself and/or your social circle?
- Could you describe the influence of your social circle in the decision-making about the use of drugs?
- Have you experienced a different approach to drug use in different cities in the Netherlands?

-) Lastly the summary

- So to conclude (Sum up the main findings) is there anything else you would like to add?
- I would like to thank you for your time and cooperation, if you think of something else you want to add or explain you can reach me at o.p.de.vries@student.rug.nl

Appendix 2: Consent form

Consent form for the Bachelor thesis about the decision-making on drug use of higher education students in relation to the level of health literacy

Researcher: Olaf de Vries 3rd year Human Geography and Planning student, University of Groningen

Contact: O.p.de.vries@student.rug.nl

Purpose of this research

The interview is planned in order to gain a better understanding of the decision-making process on drug use of higher education students in the city of Groningen.

Procedures

You are invited to participate in a semi-structured interview. This interview will last about 30 minutes. It will be recorded.

The extent of Anonymity and Confidentiality

By taking part in this research, you agree to give your views and opinions. Audio recordings will be kept until the completion of the paper and can be reviewed by the interviewer and University of Groningen supervisor. At no time will the researcher release any information to anyone other than individuals or institutions working on the project without your written consent. Instead of using your name, you will be addressed as 'Tourist office interviewee' (or similar) in the research paper.

Freedom to Withdraw

Please note that you may withdraw at any moment.

Question or Concerns

You are welcome to ask questions at any time during your participation in this research. Should any questions or concerns come up once after the completion of the interview, feel free to contact the researcher directly via email.

Participant Consent

I have read the consent form, have had the nature of the study explained to me, I agree with the consent and agree to participate in the research.

Name and signature of the research participant. Date.

Name and signature of the researcher. Date.

Appendix 3: Coding tree

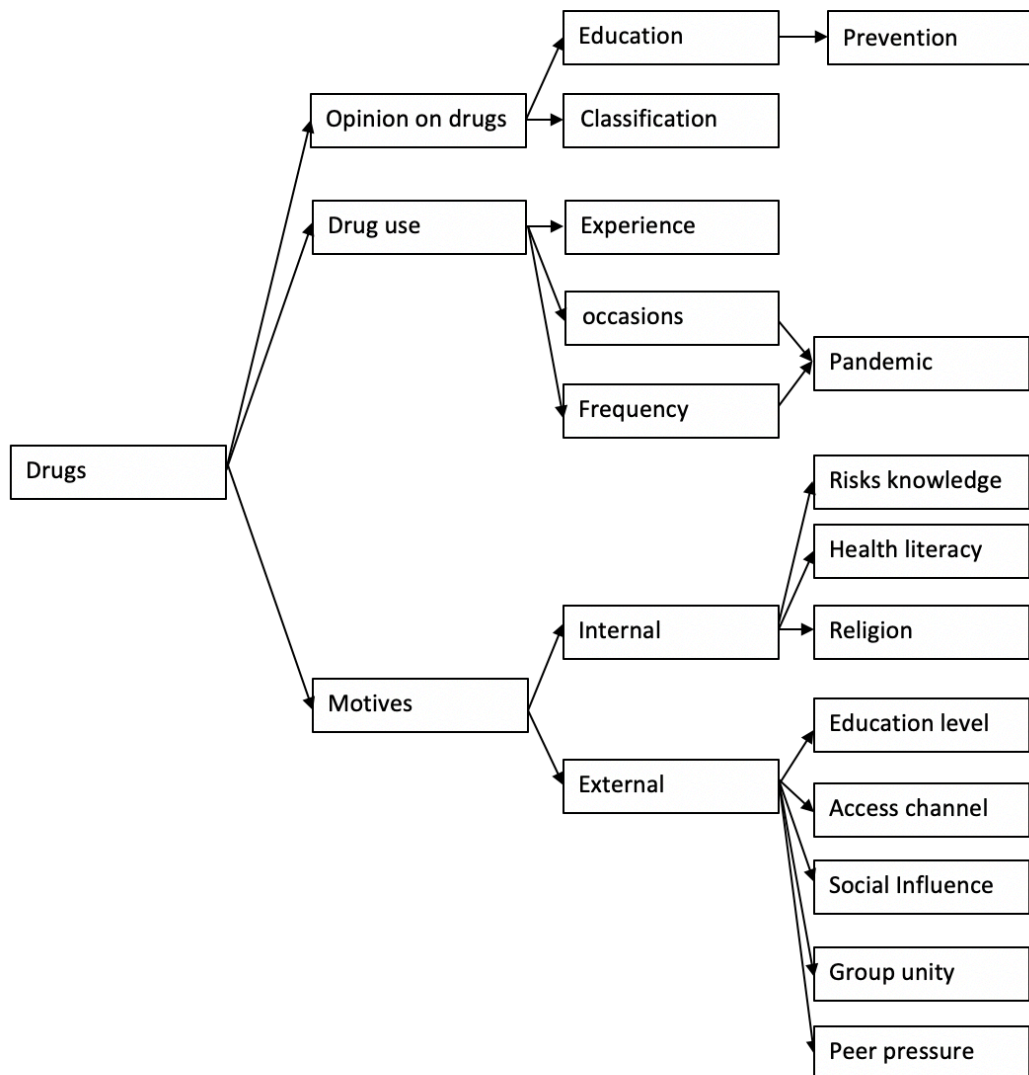


Figure 2. Coding Tree: Drugs and its opinions, motives and use.