Conceptions and Attitudes towards Psilocybin Mushrooms

Subject Module Project by

Anne-Alexandre Roy

Laura Plackova

Sarah Ippolito

Zacharie Turgeon

Examiners

Henrik Juel

Co-examiners

Allan Grutt Hansen

Communication studies at RUC

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ABSTRACT

This research is carried out with the aim of analyzing the conceptions and the attitudes towards psilocybin mushrooms, also known as magic mushrooms.

In the 50s, particularly in the United States there was a great interest in the medicinal benefits of the psychedelic. In 1971, President Nixon signed the Controlled Substance Act in which most of psychedelics were banned.

In order to know what are the biggest information gaps, we decided to conduct an online survey to interrogate individuals aged between 18 and 25 years old from all over the world.

The analysis of the data collected allowed us to find exactly how our target felt towards psilocybin mushrooms and what were their main conceptions. We found out that our target group know more about the direct effects than what we expected, but are afraid of psilocybin mushrooms. The main fears are: brain damage, bad drip and wrong dosage/environment. Moreover, psilocybin mushrooms are mainly perceived as a recreational drug.

INTRODUCTION

Finding the topic

The main goal of our first meeting was to find a topic that all of us would be interested in. However, we soon found out it would not be easy. There were two main reasons for that. Firstly, we did not want the topic to be too general and ordinary. That is why we immediately excluded global warming and other trendy topics. We know those topics are undoubtedly important, but we wanted to find something that is not so commonly discussed. Secondly, all of us have completely different fields of interest, so it was hard to find a topic that both wasn't mainstream and that all of us liked.

First brainstorm

After our first brainstorming, we came up with different topics like nudity in advertising, the process of building an online identity or the growing trend of using ADHD pills. Yet we could not wrap our mind about any of them. The most fascinating topic for us was the usage of ADHD pills as an enhancement drug and the psychological effects of it. While we were discussing about drugs and their impacts on society, we discovered a lot of interesting topics, such as the war on drugs propulsed by Nixon's propaganda in the 70's.

The idea

We started questioning ourselves about what is our knowledge about drugs and where does it come from. For most of us, we realized that the ideas we had on illicit drugs were automatically negative. The most interesting part, was that we were holding these thoughts without having done any prior research on the narcotics whatsoever.

From all of the illegal drugs that we talked about, one of them caught our attention: the magic mushroom, or more specifically, psilocybin, the active ingredient contained in these mushrooms. The story of this drug, or any psychedelic drug that were banned in the United States, were fascinating from a scientific and socio-cultural point of view.

HISTORICAL CONTEXT & MISCONCEPTION

Since we are neither doctors, nor scientists, nor historians, what we have decided to present is an analysis of the data collected from various and reliable sources. We think that when people ear about drugs, they mostly have prejudices which make them act based on what they know or hear rather then what they read. This said, our intent is to gather as much information as possible on a topic that has been taboo in the past.

What is Psilocybin?

Psilocybin is a drug who belongs to the family of psychedelics, such as mescaline, Lysergic acid diethylamide (LSD) and DMT. Psychedelics, as opposed to any psychoactive drugs like stimulants and opioids, trigger psychedelic experiences through serotonin receptors. Also, "Compared to other psychoactive compounds, these powerful and mysterious molecules were regarded as safe—it's virtually impossible to overdose on a psychedelic—and non-addictive" (Pollan, 2018).

LSD was first synthesised in 1938 by Albert Hoffman, a chemist working at Sandoz, a Swiss chemical company. During that year, he gave away a large quantity of Delysid to scientists around the world in the hope of finding a marketable application.

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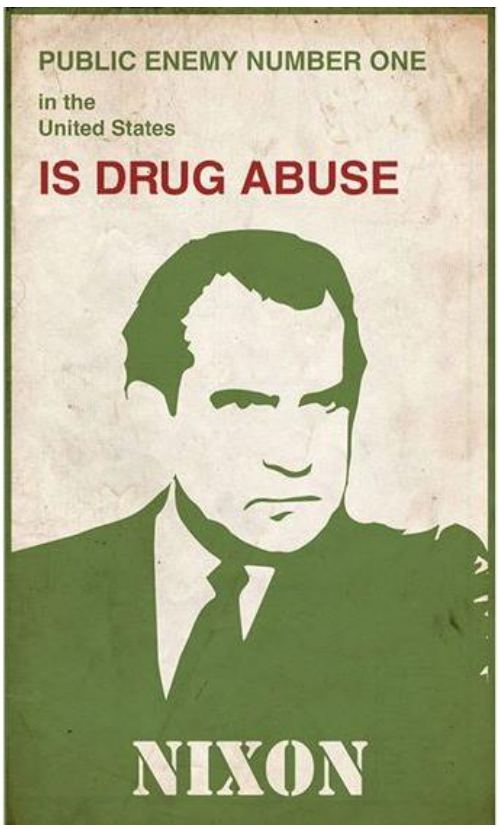
1 https://en.wikipedia.org/wiki/Psilocybe_semilanceata#/media/File:Coloured_Figures_of_English_Fungi_or_Mushrooms_-_t._248.jpg

The years of researches

During the 50's and 60's, the american government spent millions of dollars on hundreds of LSD researches. The preliminary results of theses researches were promising. Even though, research methodologies at that time were not the most precise, the science community saw a potential cure to mental illnesses like alcoholism, obsessive compulsive disorder, depression and much more (Pollan, 2015). Although, by around 1965, a nationwide moral panic was triggered due to the drug being shared and consumed carelessly in the streets.

The War on Drugs

In 1971, Richard Nixon, the US president at the time, signed the *Controlled Substance Act* that made illegal most of psychedelics. He also cut down all the government funding for psychedelics research. In the following year, 34 members states agreed to ban psychedelics by signing the United Nation convention on psychotropic substances.



Nixon's house aide, John Ehrlichman admit the truth 48 years later, in 2016: "We knew we couldn't make it illegal to be either against the war or blacks, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders. Raid their homes, break up their meetings,[...]. Did we know we were lying about the drugs? Of course we did" (Beacon Hill Times staff, 2019).[2]

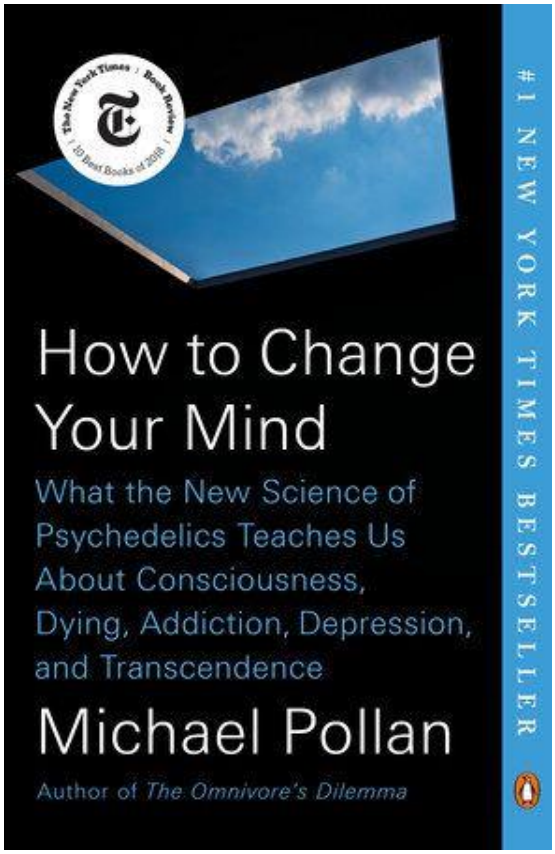
The misconceptions started because Nixon claimed that psychotropic substances would cause chromosome damage and birth defects even if no evidence supported that. He also created

[2] Nixon slogan, Drug Abuse. https://bit.ly/2QS7KpV

advertisement's campaign to convince the americans that psychedelics would damage their brain, but the truth is that "classics hallucinogens have very low physiological toxicities, with no evidence of resulting organ damage or neuropsychological deficits even at a very high doses" (Johnson, 2008). Consequently, the researchers who were suppose to evaluate the benefits of psilocybin saw their project from academic or government institutions being shut down.

New researches

It took almost 40 years for the U.S. government to give an opportunity to a group of psychiatrists at New York University (N.Y.U) to conduct a new research on psychedelics. In 2006, the Federal Drug Administration gave their approval for a N.Y.U research on the use of psilocybin. The goal was to decrease depression and anxiety in cancer patients (Griffiths and al. 2016). One big advantage of doing research on psilocybin is that its effects "resemble those of LSD, but, as one researcher explained, it carries none of the political and cultural baggage of those three letters" (Pollan, 2015). Furthermore, the effects of psilocybin lasted less longer and were not as strong as LSD. It was then consequently easier and safer to study (Pollan, 2015).



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From this date, many other researches have been led on the drug. Research groups from all around the world like the Entheogenic Research Integration and Education and the Heffter Research Institute have been conducting many researches on the beneficial use of psilocybin.

3 https://www.penguinrandomhouse.com/books/529343/how-to-change-your-mind-by-michael-pollan/

Michael Pollan, author of the book *How to Change Your Mind*, is a renowned writer about psychedelics who came up with particularly relevant and interesting knowledge.

THE COMMUNICATION QUESTION

People's perception

We think that, after all these years of research, the people's perception of psilocybin mushrooms are still warped by Nixon's propaganda and the communication campaigns of the 1970's. This is why we decided to concentrate our efforts on this question: what are the main misconceptions and attitudes concerning psilocybin mushrooms?

It made a lot of sense to assume that society had wrong conceptions about the drug because there hasn't been a lot of information campaign since then.

Two problems: the communication product and people's attitude

At this point, we faced two main problems. The first one was that we didn't have any communication product to analyse. Since we were only focusing on a target group's perception, it was difficult for us to identify a source and a specific message to analyse.

After talking to our supervisor, we found a way to solve this problem: we decided to add a communication campaign at the end of our research. First, we would start by finding where is the lack of knowledge about psilocybin mushrooms in our target group's minds. Then, we would plan a campaign who tells the real informations about the medical use of psilocybin mushrooms. Our ultimate goal is to reduce the misinformation gap and to clarify the misconceptions. Our communication product would thus be the campaign that we will propose at the end of our project.

Although, this brought up to the second problem. In order to design an efficient information campaign, we would not only need to master people's knowledge about psilocybin mushroom, we would also need to know their attitudes (how they feel about the drug). By focusing exclusively on people's misconceptions, we limited ourselves to only what people knew about the drug. Also, scientifically speaking, assuming that people were already holding misconceptions didn't make a lot of sense.

Therefore, by modifying our communication question, we were able to be more aligned with our goal:

What are the 18-25 years-old main conceptions and attitudes towards psilocybin mushrooms?

Target group

Our first reflex was to direct our attention to the segment of population that has been exposed to both the pre-1971 and post-1971 era. We all agreed that it would be interesting to document the change of perception in the population, before and after the authorities started spreading negative messages about psychedelics. Although, we soon realized that all of the collected data wouldn't be useful for a future information campaign. The reason was simple: anyone that could have been touched by these messages would need to be at least 18 years old at the time. That means that the age of our target group would start at 66 years-old.

Though, we figured that a younger age group would find more advantages in using psilocybin mushrooms because they may be the ones who are going to be the most interested in the medicinal benefits of psilocybin.

In fact, we discovered that in 2003, the researchers Julia Kim-Cohen, PhD, Avshalom Caspi PhD and Terrie E. Moffitt. PhD did a study on 1000 people. Their results revealed that for the participants who had a mental health condition diagnosed by the age of 26, around 230 of them had been first diagnosed with a mental health condition between the age of 11 and 15 (50%) and another 110 (24%) were first diagnosed with a condition by age 18 (Kim-Cohen and al., 2003). This means that by 18 years old, at least 74% of the people know they are diagnosed with a mental health issue.

Final target group

Knowing those informations, we will target people from 18-25 years old. In order to have a well-defined target group, we decided to ask people in our environment: it was easier for us

to ask international students, since they are our friends here at RUC. For a matter of accessibility, this target group was more simple.

THE INFORMATION CAMPAIGN

The strategy

We made sure at this point that our campaign was not going to inform our target group about the recreational use of psilocybin. After the 1971 Convention on Psychotropic Substances, the drug was highly regulated or prohibited in many countries in the world. As opposed to the recreational use, the medicinal use of the psychedelic, is recently becoming more accepted by the authorities. It was more relevant for us to focus on this approach. We also knew that recreational use of psilocybin implied more risks. The medical use, in contrast, is less risky. In fact, using the drug in a controlled environment implies almost no risks: "Setting is key: ongoing researches are defending the substance can improve people's mood and quality of life if it used with the proper setting" (Lopez, 2016).

We knew that designing a health campaign about a mostly unknown drug on such a large audience was going to be a big challenge. We decided to research on strategies used by marketers to conduct health campaigns. Although, as opposed to many health campaign, our product wasn't aiming to change any bad behaviour like smoking or drinking. We would only have to find an efficient way to provide the right information to our target and make sure they assimilate it.

Atkin and Rice present two approaches that can be combined or use separately to change beliefs: loss-framed or gain-framed incentive strategy (Atkin and Rice, 2013). In our case, we didn't have any argument presenting the down sides of not using medicinal psilocybin mushrooms. We knew at this point that our campaign would be using a gain-framed incentive strategy.

The purpose

Atkin and Rice also separate the informational health communication campaigns in two types of messages: the awareness and the instruction.

Instruction messages are fairly complex messages aiming to produce knowledge by asking people to take action. *Awareness messages*, though, are more simple. They only seek to inform the target group "what to do, specifies who should do it, or provides cues about when and where it should be done" (Atkin and Rice, 2013).

The aim of our campaign wouldn't be to ask people to take action and neither to convince people to use psilocybin. Our goal would be to raise awareness (so we knew we were aiming for awareness messages) and to make people consider it as a medical option.

Advantages and disadvantages of the topic

We assumed that people did not know much about psilocybin mushrooms and their different uses, which we took as an advantage, since it was easy to give new information. Our campaign could also make our target group more open about the subject and prepare the ground before it is legalized. On the other hand, the barrier of our topic is that it could be related to negative emotions and irrational thinking. In that case, it could be harder to convince people about the pros of the substance (Dainton and Zelley, 2005).

Reaching the target group

Our most important concern at this point was to make sure that we knew as much as possible on our target group before designing our strategy. "Information given to clients/patients should be planned to suit the needs of the people" (Nkanunye and Obiechina, 2017). We wanted to know their conceptions, their attitudes and also how we are going to reach them.

Logos, Pathos and Ethos

For those reasons, we decided to base our questionnaire design on Aristotle modes of persuasion: Logos, Pathos and Ethos. This, we believed, would allow us to collect all the data we needed.

- First of all, for the *logos,* we were going to evaluate what our target group knows about psilocybin mushrooms in terms of facts.
- Second part is going to be the *ethos*, the "attitude toward a source of communication held at a given time by the receiver" (McCrosky, 1968). This part of the questionnaire would be used to analyze what kind of sources are relevant to people when they see a health campaign. This information will help us define who is going to be our sender.
- The third part, focusing on *pathos*, would be used to figure what are the attitudes of our target group towards psilocybin mushrooms and how do they feel about it.

METHODOLOGY

Five steps by Bonneville, Grosejean and Lagacé

On our way to conduct a research, we decided to base our process on these few steps defined by Bonneville, Grosjean and Lagacé (2007):

1. Find the initial question with a problematic, a theoretical frame and an hypothesis of research;
2. Find a population with a specific sample who represents it;
3. Develop a data collection tool to do the survey like a questionnaire;
4. Determine how to distribute the questionnaire (online, post, telephone);
5. Write the description, the analysis and the interpretation of the results.

Developing an hypothesis

At this stage, our initial question, problematic and theoretical frame had already been set. We had then to establish an hypothesis for our question. We decided to base the hypothesis on

the information gathered concerning the propaganda in the 70's. For the last 50 years, there has been just a few information produced on the subject. It is for this reason that we believed that the main conceptions and attitudes that our target group are holding were simply the ones that were delivered by the Federal Drug Agency at that time.
The main conceptions and attitudes about psilocybin mushrooms are:

1. Psilocybin mushrooms are addictive.
2. Psilocybin mushrooms are destroying the brain

SAMPLING PHASE

Simple random sampling

Next was the sampling phase. "Sampling is the procedure through which a finite number of cases (sample) are extracted from a set of units (population) that reproduce some characteristics of the population on a scale, chosen with criteria that allow the extension of the results obtained by studying the sample to the entire reference population" (Patton, 1996).

In our research we used a simple random sampling, where every single unit had the same probability of being extracted. The accuracy of a sampling is a function of three elements:

- *Sample width:* the greater the width, the greater the precision;
- *The variability* of the phenomenon under study: the greater the variability, the lower the precision;
- *The efficiency* of the sampling design adopted: the greater this efficiency, the greater the precision (Patton, 1996).

Finding a specific sample who represented the population was in fact one of our biggest challenge. It was impossible for us to be statistically significant for such a big population. Our limited time and resources forced us to do the research on people we know. Normally, surveys need to have at least 1000 respondents so that the safety coefficient can be at 95,45 % (Centre de recherche et d'information socio-politiques en Belgique, 1979). Even though this may affect

greatly the quality of the data, we were confident that a large amount of information on theses subjects would lead us to identify the main conceptions and attitudes towards psilocybin.

Qualitative or quantitative study

Since the beginning, we knew we wanted to do a survey. We wanted to have a large quantity of information, on a large group of subjects, in a short amount of time and with a low budget and those are exactly the advantages of surveys. Since they are really helpful to collect what people think, feel, believe in, do and plan (Bonneville and al., 2007), it was the best option to dig into people's knowledge, perceptions and attitudes concerning psilocybin. The survey would also allow us to gather quantitative data (closed questions) and most importantly, qualitative data (open questions).

Descriptive or analytical survey

Then we needed to choose if we wanted a descriptive or an analytical survey.
The first one is used to describe characteristics about a target group, like socio-demographic data or their opinions about a subject. The second type of survey is used to analyse if there are concomitant links between the opinions, the values, the attitudes, the beliefs or the behaviors and the answers of the repondants. In this way we could analyse for example if a specific type of value X has a significant impact on a respondent Y. But, in our case, we won't create causality links because we won't have time to do an experiment (Bonneville and al., 2007).

Our research design is going to be descriptive because we want to describe a phenomena. We are curious about our target group conceptions and attitudes about psilocybin mushroom in order to create the right campaign. This type of design is more appropriate because we are not trying to find correlation or causality in between the variables (Fortin, 2006).

Berger survey characteristics

According to Berger's research in 2000, all of our questions in our survey should have the following characteristics:

- **Clarity:** the participant should not have to reread a question more then one time or try to comprehend its sense on his own. The participant should never guess the meaning of a question;
- **Concision:** each question should include only one sentence, or exceptionally two sentences. Long and complex phrases are to complicated for the participant who has a limited time to answer the survey;
- **Negativity:** formulations of questions where negatives appear must be outlawed;
- **Languages simplicity:** we must not use a specialized language and reduce the misunderstandings of any professional jargon;
- **Minimum amount of information per question:** we must not add more then one element of information into every question because the participant could agree with a part of the question but not the other one;
- **Neutrality:** the question should not be constructed in a way where they reflect the researcher's values and opinions;
- **Tricky topics:** we need to respect the participants concerning tricky topics like age or revenus. Questions who are really direct risk to generate no results at all.

WRITING PROCESS OF THE QUESTIONNAIRE

How to make a good questionnaire according to Wimmer and Dominick

The different steps to build the right questionnaire are to make sure that the introduction, the instructions and the question order are clear. For the introduction, it should be only a couple of lines to situate the context of the research. We need to explain our ethical criterias like the anonymity or the confidentiality. Also, the hypothesis should not be revealed at that point to make sure the participants will not skew the results (Bonneville and al., 2007).

Giving instructions to the reader

The introduction is then followed by the instructions. When we do online surveys, our instructions need to be really clear, because we are not going to be next to the participants when they answer it. We could write an example of every type of question we ask to make sure people understand how to answer, for example if they need to write an X or to circle the answer. Also, if we are using a Likert Scale we need to explain to the participants how it is going to work (Bonneville, and al., 2007).

It's important to tell the participants how many questions they are going to answer and how long will it take to answer. Also, if we have a target group we need to specify that people over or under a certain age should not take the test because they are not in the target group.

The question's order

Then, for the questions order, we need to ask the questions from the general to the particular, we progressly need to establish a contact with the participants so they are feeling more confident as they are going threw the survey. Personal questions like the participant's age or revenues should be appearing at the end. But simple questions that are easy to answer should be at the beginning. Similar question on the same topic should also be in groups in the survey. Also, the questionnaire should not take more then one hour to answer, because if it is too long people will get discouraged and give up (Bonneville and al., 2007).

We also need to avoid the yes and no type of questions, because the attraction for positive responses is well known in social psychology and people might answer what they think is "the good answer" (Weekly mail of the CRIPS, 1979).

RESEARCH DESIGN

"The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data" (Kirshenblatt-Gimblett, 2006).

HYPOTHESIS: Our hypothesis is based on the information gathered concerning the propaganda in the 70's. In the last 50 years, there has been just a few information produced on the subject. We believe that the main misconceptions that our target group is holding are simply the ones that were delivered by the Federal Drug Agency at that time. The main conceptions about psilocybin mushrooms are: 1. Psilocybin mushrooms are addictive and 2. Psilocybin mushrooms are destroying the brain.

TYPE OF RESEARCH: Qualitative and quantitative

RESEARCH QUESTION: What are the main conceptions and the attitudes concerning psilocybin mushrooms from the perspective of 18-25 years old respondents from all around the world?

TARGET POPULATION: men and women who are aged between 18-25 years old.

TYPE OF SAMPLING: simple random sampling. People that we know.

INDICATORS:

- ➔ *to investigate the conception about psilocybin mushrooms*
  how dangerous people think psilocybin mushrooms are; how addictive people think mushrooms are; what people think the direct effect of mushrooms are; , what people think the long term effects of mushrooms; level of agreement about the use of mushrooms for medical purposes; what people think the benefits of using mushrooms are; what people think the dangers of using mushrooms are.

- ➔ *to investigate the attitude about psilocybin mushrooms*

what comes to people's mind when they think about psilocybin mushrooms; level of fear that people have about the use of mushrooms

➔ *to investigate what are the relevant sources for medical information*
what is the most reliable source for an health campaign; where people would search for help in case they are struggling with mental/health issues.

➔ *to investigate about the personal use of psilocybin*
number of times people have tried psilocybin mushrooms; main reasons for using mushrooms.

QUESTIONNAIRE

After we finished our research about methodology, we started to build the questionnaire. Firstly, we wrote an introduction, to inform the participants about our survey's intention. We also told them about our two ethical criterias which are confidentiality and anonymity. We then made sure not to tell too much informations on the survey like the real hypothesis which would have affected our respondents opinion.

In the beginning, we asked the most important question of our survey: *Have you ever heard about psilocybin mushrooms (magic mushrooms)?* considering that people could not say their conceptions and attitudes about something they do not know. Because of our previous research, we did not want to use yes or no questions, but it was essential in this case. For the participants that answered "no", it was the end of our questionnaire. Moreover, the fact that people do not know about the existence of psilocybin mushrooms is an interesting information for us as well.

While we were building our questionnaire, we discussed whether we should use open or closed questions, because we knew that it could be exhausting for people to answer too many open questions. On the other hand, we wanted to dig into their knowledge and feelings, so it was necessary for us to use at least a few of them. To make it easy for the participants in the beginning, we used closed questions with a scale of numbers from 1 to 5 and then we continued with open questions.

In our survey, we wanted to cover all three Aristotle's modes of persuasion:

- ➔ For the *logos*, we had to find out what people knew about psilocybin mushrooms. We asked our respondents what kind of effects psilocybin mushrooms can have on their mind and body or how dangerous and addictive it can be;
- ➔ For the *pathos*, we asked about the feelings of our participants, for example if they think that psilocybin mushrooms are scary;

- ➔ For the last mode, *ethos*, we focused on the credibility of the sender, so we asked the respondents what would be the most reliable source for a communication health campaign in their country.

ANALYSIS OF THE FEEDBACKS

After building the first draft of the questionnaire, we sent it too a couple of people to get their impressions.

**In the report of the answers, we'll only use masculine for all the people even though some of them are girls, just not to reveal their identities.*

Respondent #1 told us it was a great idea to alternate closed and open questions to differentiate the set of answers. He also said it would be better if the question "If you were to struggle with mental/health problems, where would you look for help" had multiple choice answers, because he said it was too wide. He also suggested to put the gender and the age at the beginning.

Respondent #2 helped us fixing a technical part in the survey, he helped adjusting the scales. Since he doesn't know a lot about mushrooms, he said the question "How much do you agree to this statement: psilocybin mushrooms (magic mushrooms) should be used for medicinal purposes" is really hard to answer.

Respondent #3 said he was really annoyed by all the open questions, he would rather have multiple choices questions. He hated open questions because he didn't know much about the topic and it was hard for him to write his answers. That made him feel uncomfortable because he didn't want to write "wrong" answers. He said the whole survey was pretty clear, he didn't find anything he could not understand. The only question which was weird for him is the one about the communication health campaign, he was confused about the link of accordance with the other questions. It took him about 5 minutes to complete the survey.

Respondent #4 said the question about the mind and body should cover only the mind or the body but not both. He said it was confusing that we had two different ideas in one question. He also said because he didn't know anything about psilocybin mushrooms, he didn't know what to write in the open questions. He also said that when we ask what do you think are the dangers of using psilocybin mushrooms, the question is to broad, he said: "I don't know if you want me to talk about the dangers on the mind, on the people around me, on my body, etc". He also said the two questions "what are the benefits of psilocybin mushrooms" and "why do you think people do psilocybin mushrooms" are kind of the same question.

Respondent #5 suggested that our survey showed that we are approving the use of psilocybin mushrooms, he said the way our questions are formed is implying we are trying to "dedramatize" its use. He also said his answers were pretty much the same and that we should include more variety. He also said there was a lot of open questions and that people won't know the answers, he said we would have a lot of "I don't know". He added that even though he did psilocybin mushrooms and he knew the effects, he could not answer properly to our questions. He thought even if he tried, most of the questions were really hard to answer.

IMPROVEMENTS ACCORDING TO THE FEEDBACKS

The open questions

Knowing all of the answers of the first draft, we knew we needed to make a decision about the number of open questions. The main comment coming from our test group was that our open questions were either annoying, hard to answer, or they didn't know what to write at all. Our first reflex was to include multiple choices of answers to help them out and make it easier to answer. But after digging more into the issue and brainstorming about possible solutions, we made the decision to keep the open questions as they were.

The goal of this research was to really dig into the people's perceptions and attitudes. We agreed that it is much better to have an "I don't know" answer then having someone picking one of the multiple choices without truly thinking about it. For example, if we had given some choices like hallucinations, changing of perceptions or dizziness when asking our target group about the effects of psilocybin mushrooms, someone who didn't know what were the effects of psilocybin mushrooms might have selected one of the suggestions that made more sense. We stated that *I don't know* answers were more valuable than bias answers.

In fact, we were expecting that a lot of people wouldn't know much about psilocybin mushrooms. Knowing to which extent people didn't know about it would show how much they need to be informed.

Age and gender

We decided to keep the age and the gender at the end of our survey. This way, people would not feel categorized and judged and they would not have the feeling of being selected and placed in boxes.

So we agreed to start with questions that would put the participants at ease and then we would ask their personal opinions. We believed that we need to develop a kind of trust with the participants at first, so they feel confident to share their real opinions afterwards. We validated this interrogation with our supervisor and he agreed.

Mind and body

We modified the questions "What do you think are the direct effects of psilocybin mushrooms on your mind and body?" in to two separate questions, one only for the mind and one only for the body. In this way, the message would be clearer and we would only have one idea per question.

Supervisor feedbacks

We showed the survey to our supervisor, he told us it was quite clear and easy to understand. He suggested that we should add who the sender is in the introduction, by saying something like "Thank you for taking part in our research and help us with our student project work in Communication Studies at Roskilde University, Winter 2019." We then modified it in our survey.

He also said we could add two open question, one at the beginning about what do people think of/feel/associate when they read the word psilocybin mushrooms (magic mushrooms). For instance, we could say "what are the first few words that are coming into your mind when you hear magic mushrooms". We added this question to our questionnaire. And one at the end to know if perhaps people has other comment about the issue. We thought that we would get more insights on psilocybin mushrooms that way and we would learn more about our participants.

Our supervisor suggested that for the last question "What would be the most reliable source for a communication health campaign in your country?" we could specify it by adding "for you" so that it would look more like: "What would be the most reliable source for you for a communication health campaign?" We then decided to change it. We thought that the last question about the source would be clearer if we added "for you" because one of our respondent was questioning its relevance.

We then had some more inquiries, we were wondering if the question about dangers wasn't clear enough, but since only one respondent said he didn't understand, we let it that way.

Same for the respondent who said our questionnaire wasn't neutral, since he was the only one who said that, we decided not to use that comment.

We also encouraged people to answer *I don't know* if they really don't know the answer. We wanted the true knowledge of our participants so we explained it to them in the questionnaire.

DATA COLLECTION

After applying many modifications to our survey, we decided to go forward and start sending it electronically to people we knew were in the target group. Since many of our friends are only reachable by internet, an online survey was a much more efficient way to collect data.

We set our goal to a minimum of 50 respondents. We thought that this number would allow us to analyse a sufficient amount of different answers while staying efficient. After 24 hours, we had already collected 43 completed surveys. And after 48h, we had 65.

By reading the answers to our questions, we quickly noticed a pattern. We could identify some answers that were frequently given by the respondents. In order to be as accurate as possible with our results, we knew it was important to reach the research saturation.
In the scientific literature, *reaching saturation in a qualitative research* is described this way: "Saturation means that no additional data are being found whereby the sociologist can develop properties of the category. As he sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated" (Saunders and al., 2018).

Dealing with the answers from the quantitative questions was going to be relatively easy. Though, we knew that the open questions would need more time to be interpreted. The next step was therefore to take each of the answers from our respondents and put them into larger categories. This would then allow us to identify the most common category of answers. This was a more complicated task than what we expected. The challenges we faced were:

1) Make sure we were not limiting the categories to a point where the essence of the answers were not respected;
2) Create a limited number of categories that would allow us to analyse efficiently the data.

This process ended up being really hard and was highly based on our opinion because we were the one creating the categories and we couldn't always classified what people thought and how they felt. We were thus inevitably limiting the details of the answers to the category title.

Even though we made our best to keep this task as much objective as possible, it was impossible to deny the fact that we were influencing the results of this survey. In order not to be influencing the answers, we worked as a team and made choices together. Answers that were difficult to classify were talked over and discussed so that the four of us had given their opinion in the decision. We considered that this would at least bring us a little closer to being objective.

Another challenge occurred to us while classifying the answers. Some people gave long and rich answers that could be placed into more than one category. To address this concern, we decided to split these questions in pieces so we could put each part in their own category. We agreed it would give the classification method far more precision. By splitting answers in multiple parts, we ended up with a total number of answers that was higher than the number of participants. It therefore forced us to interpret the data in a different way: every percentage given in the answers would represent a portion of the answers and not a percentage of respondents. Even though this shift changed for the better the way we could analyse the data, it greatly affected the convenience of our final results.

We made the decision to start the survey by asking if people heard about psilocybin mushrooms. This allowed us to remove them right away from our results if they answered no. From the 65 people who took the test, 6 of them were rejected and not allowed to answer the next questions. We also found out that a couple of respondents who took the entire survey

decided not to answer to some of the open questions. This unfortunately forced us to remove them from the results.

Another challenge we faced, was when we got our results. We realized that the scale weren't made in a proper way. For example, with the question *How dangerous do you think psilocybin mushrooms are on a scale of 1-5*? The answer 1 meant harmless and the answer 5 meant harmful. But since, the answer 2, 3 and 4 were not well defined, we could not conclude anything about them. Our respondents didn't necessarily know what a 3 was, was it neutral, a little harmful or a little harmless, we can't really tell. For instance, some people could have thought that it could be harmful if someone took a strong dose. We did this mistake because the Google form we used didn't allow us to characterize the answers 2, 3 and 4 on the 1-5 scale. It is then a difficulty to interpret those results.

Another thing is concerning our question *What would be the most reliable source for you for a communication health campaign?* We realized we made a mistake. In the answers, we put "government" and "medical association (ministry of health)" but most of the time the ministry of health is related to the government, so those two answers are basically the same ones. We realized that most of our respondents didn't answer properly or were confused.

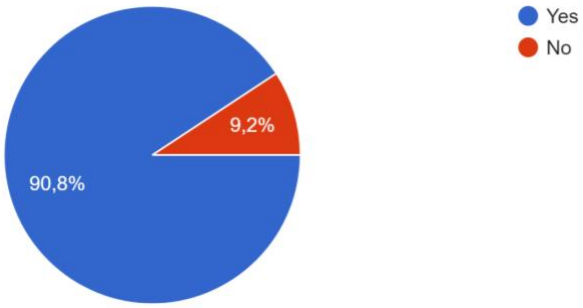
We made this mistake because we added this question after the first feedbacks round that we did with our close friends. After receiving the feedback that we had too many open questions, we tried to categorize this question by adding choices (medical association, your own doctor, government), but we ended up with biased answers. For this reason, we couldn't use this question in our analysis.

It is the same with the question "If you would struggle with health/mental issues, where would you search for help?" because we created two distinct category for doctor and medical center. Thought, doctors could be working at a medical center, so those two answers were probably really confusing for the respondents. We knew, this would affect the quality of our results.

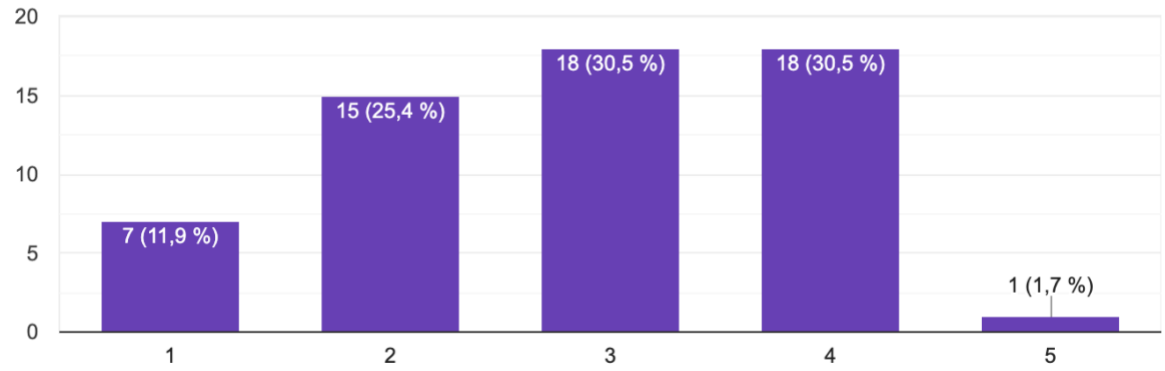
QUANTITATIVE RESULTS

A. Have you ever heard about psilocybin mushrooms (magic mushrooms)?

First of all, we decided to investigate how many people actually know about magic mushrooms. We found out that most of the participants have already heard of it **(90,8%)**, while only **9,2%** have not.



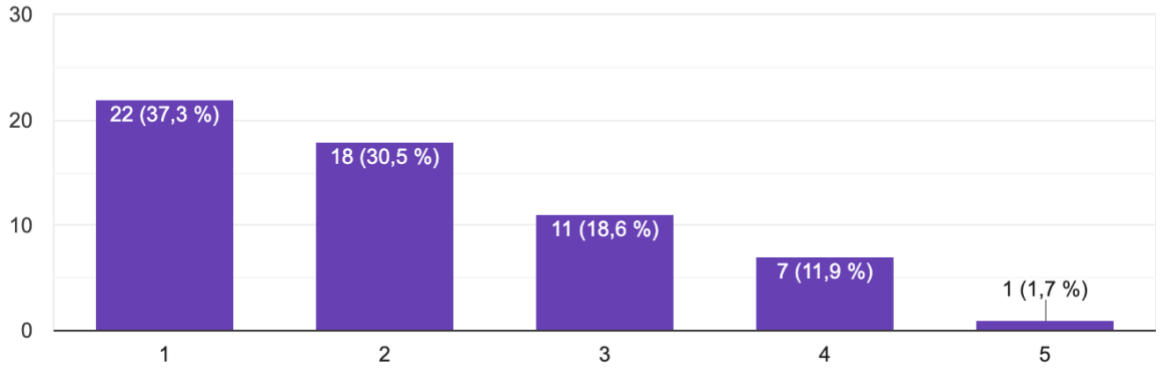
B. How dangerous do you think psilocybin mushrooms are on a scale of 1-5?



1=harmless **5=harmful**

Among the people who knew about them, which is 90,8% of our participants, only **11,9%** (7 answers out of 59) thought they are harmless, **25,4%** (15 out of 59) thought they are just a little bit dangerous, **30,5%** (18 out of 59) thought they are quite dangerous, **30,5%** (18 out of 59) thought they are dangerous and finally, **1,6%** (1 out of 59) thought they are very dangerous.

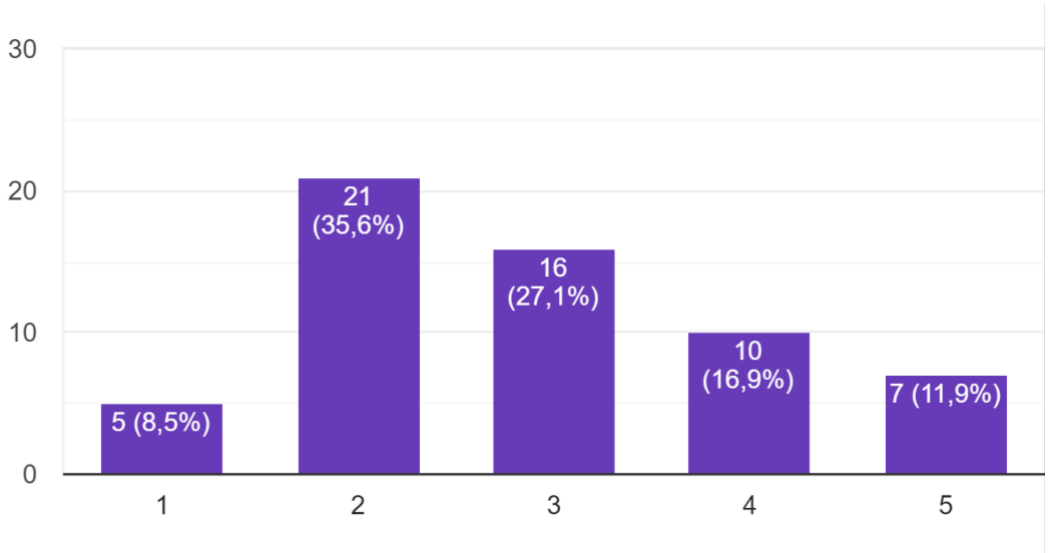
C. How addictive do you think psilocybin mushrooms are on a scale of 1-5?



1=not addictive **5=highly addictive**

The majority of the respondents, **37,3%** (22 answers out of 59) thought that psilocybin mushrooms are not addictive. **30,5%** thought they are a little addictive and **18,6%** (11 answers out of 59) believed they are quite addictive. **14,3%** (9 answers out of 59) thought magic mushrooms are very addictive and just one person out of 59 **(1,6%)** considered them highly addictive.

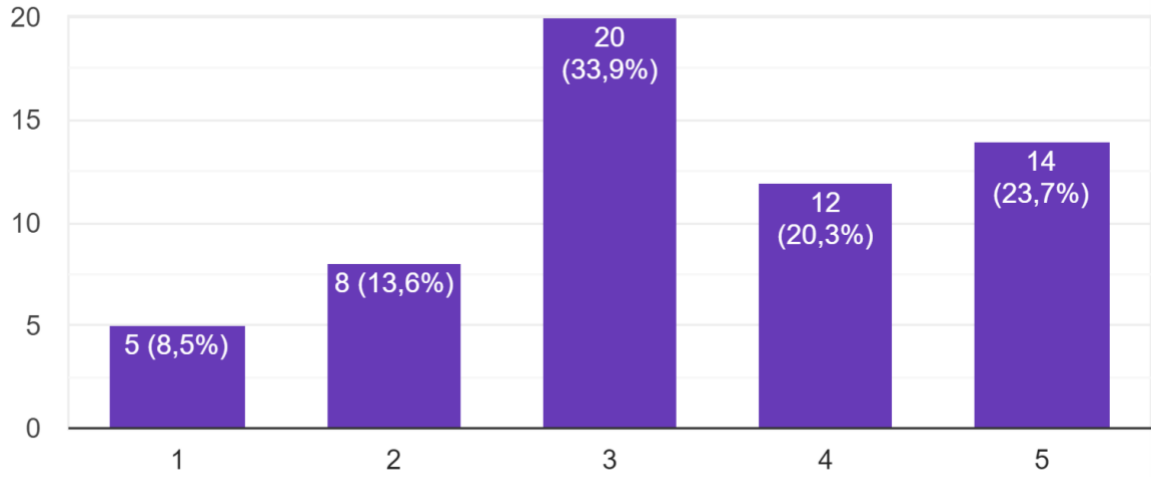
D. How damageable do you think psilocybin mushrooms are for the brain on a scale of 1-5?



1=not damageable **5=highly damageable**

The majority of the respondents are on the left side of the graphic, with a **8,5%** (5 answers out of 59) that thought mushrooms are not damageable at all for the brain. **35,6%** (21 of 59) placed themselves on the second column which is "quite damageable". We found that **27,1%** (16 of 59) of the answers were pointing the category "quite damageable" followed by **16,9%** (10 of 59) of the answers for "very damageable" and only 11,9% of the answers for highly damageable.

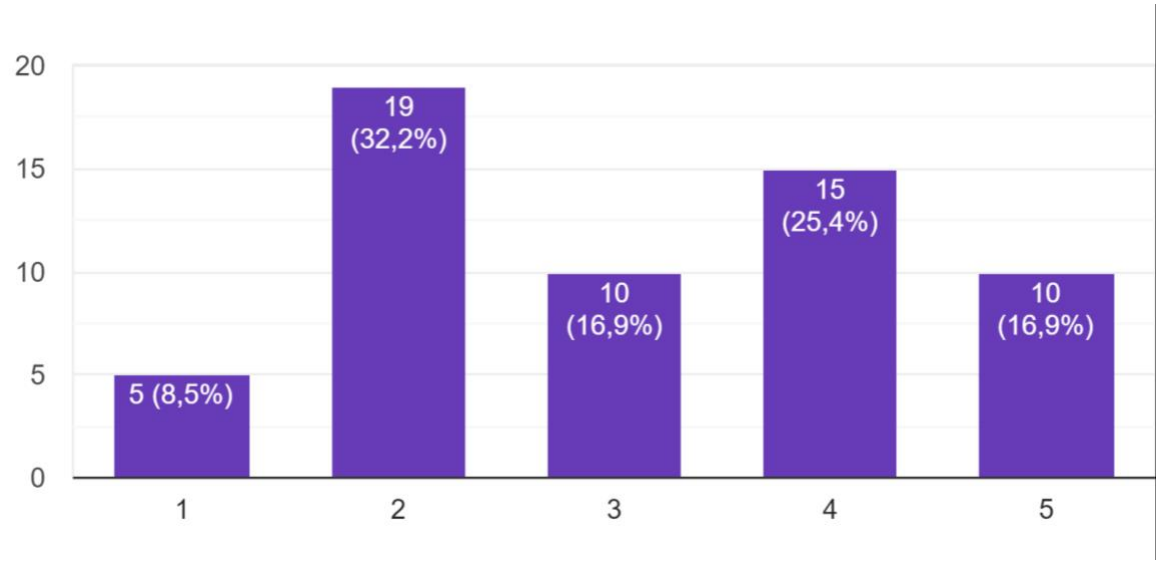
E. How much do you agree to this statement: psilocybin mushrooms (magic mushrooms) should be used for medicinal purposes.



1=strongly disagree **5=strongly agree**

8,5% (5 answers out of 59) of the respondents strongly disagreed with the use of mushrooms for medicinal purposes; **13,6%** (8 of 59) disagreed with this sentence. The majority of people, **33,9%** (20 of 59), placed themselves in the middle, showing they are neutral. A large amount of respondents were between "agree" with **20,3%** of the answers (12 of 59) and "strongly agree" with **23,7%** (14 of 59).

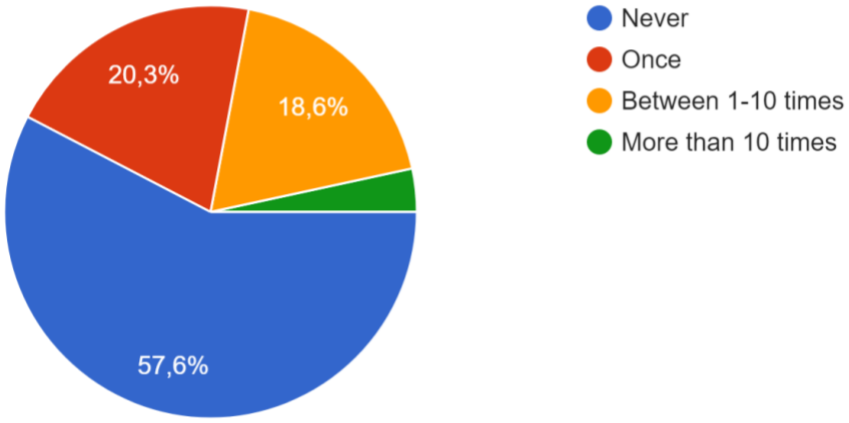
F. How much do you agree to this statement: psilocybin mushrooms (magic mushrooms) are scary.



1=strongly disagree **5=strongly agree**

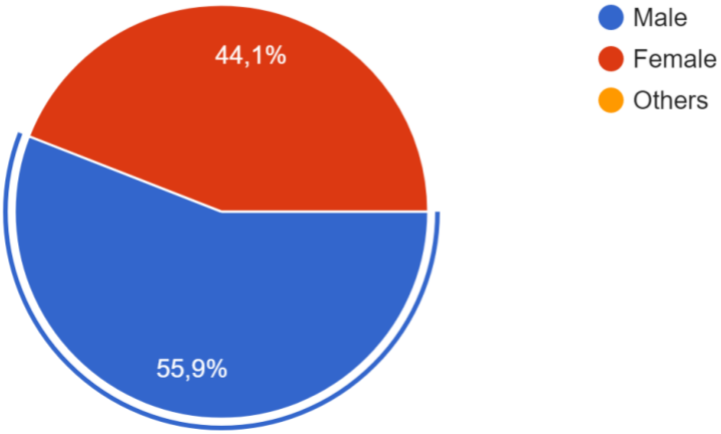
The graphic is almost perfectly divided in two part, with 24 answers on columns 1 and 2, 25 answers on columns 3 and 4, and just 10 answers in the middle with **16,9%** (10 of 59). The majority with **32,2%** (19 answers out of 59) disagreed with the fact that mushrooms are scary, while a **25,4%** (15 of 59) thought they are. Only **8,5%** (5 of 59) strongly disagreed, while **16,9%** (10 of 59) strongly agreed.

G. Have you ever used psilocybin mushrooms?



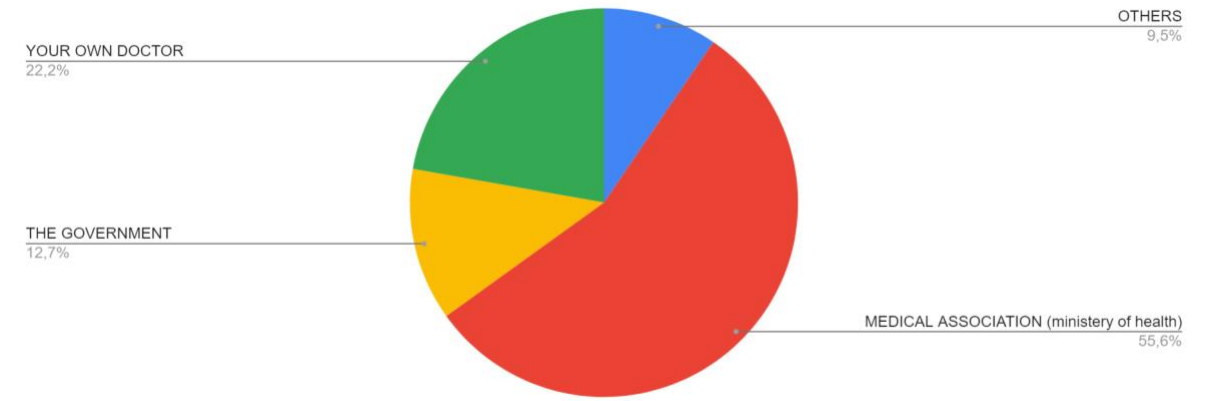
The largest portion of respondents, **57,6%** (34 answers out of 59), have never used psilocybin mushrooms, while only **3,4%** (2 of 59) have used them more than 10 times. **20,3%** of the answers (12 of 59) showed people have used them once and **18,6%** (11 of 59) between 1-10 times.

H. What is your gender?



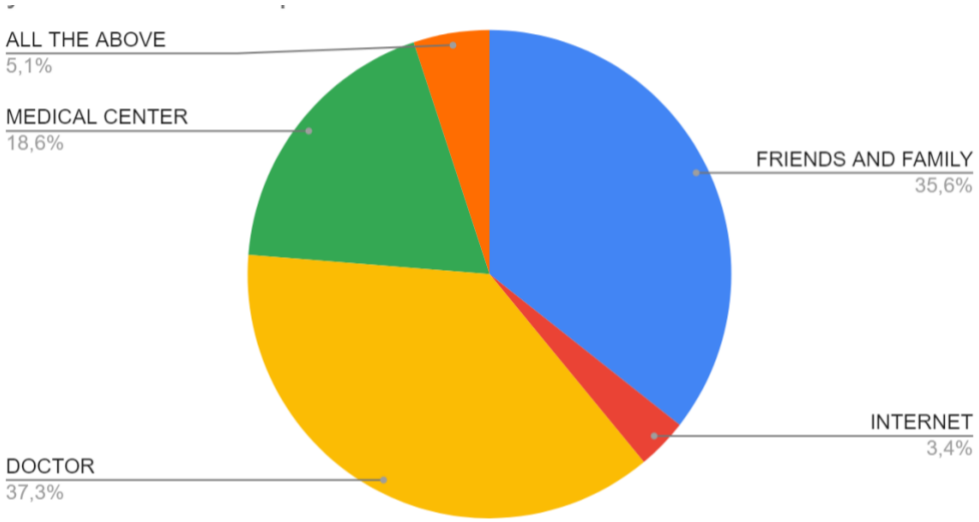
From this graph, we can see that our group of respondents is quite balanced, because **55,9%** (33 of 59) of them are male and **44,1%** (26 of 59) are female.

I. What would be the most reliable source for you for a communication health campaign?



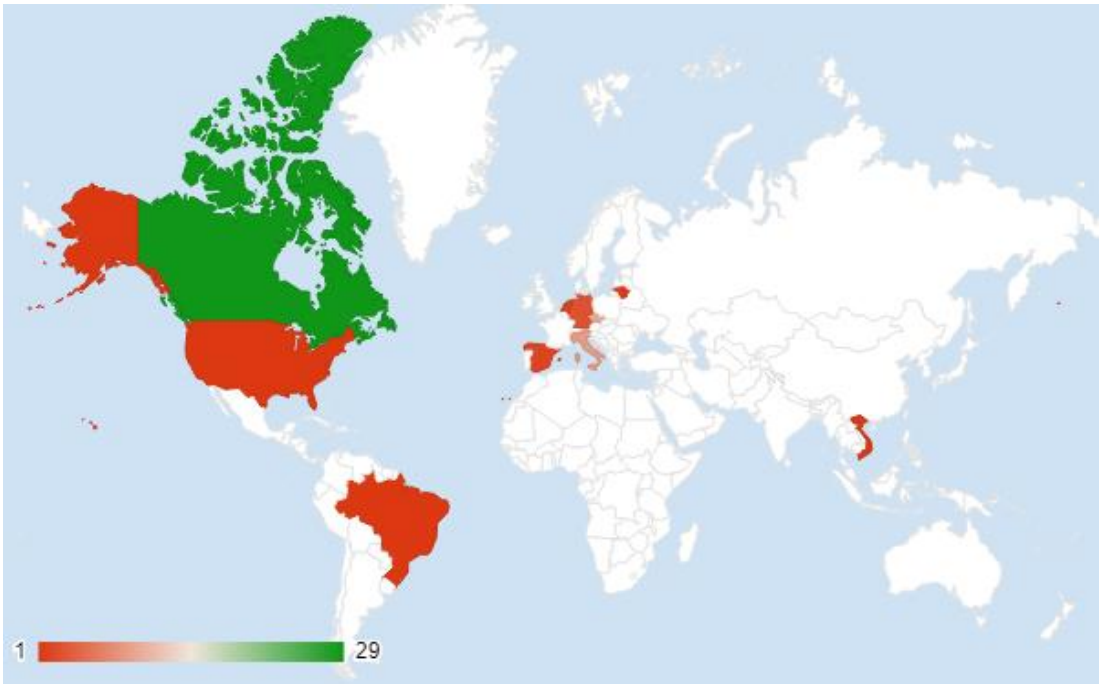
We decided to not use this graphic because of the reasons we explained earlier.

J. If you would struggle with health/mental issues, where would you search for help?



The most reliable source for people was a doctor with **37,3%,** immediately followed by friends and family **35,6%.** Then, it was the medical centers with **18,6%.** "All the above" that meant all the possible choices, reached **5,1%.** At last, we found Internet, with only **3,4%.**

K. Country of origin



We received the majority of answers from:

Canada **(48.3%)**

Czech republic **(16.7%)**

Italy **(15%)**

Germany **(5%)**

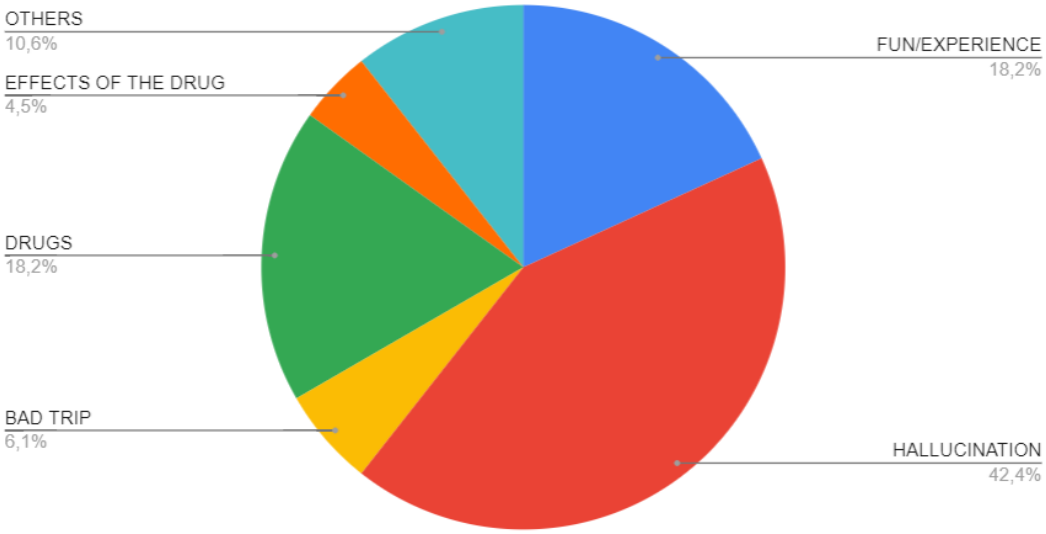
Spain **(3.3%)**

Netherlands **(3.3%)**

But also from Vietnam, Lithuania, Brazil, UK, with a person from each of those countries.

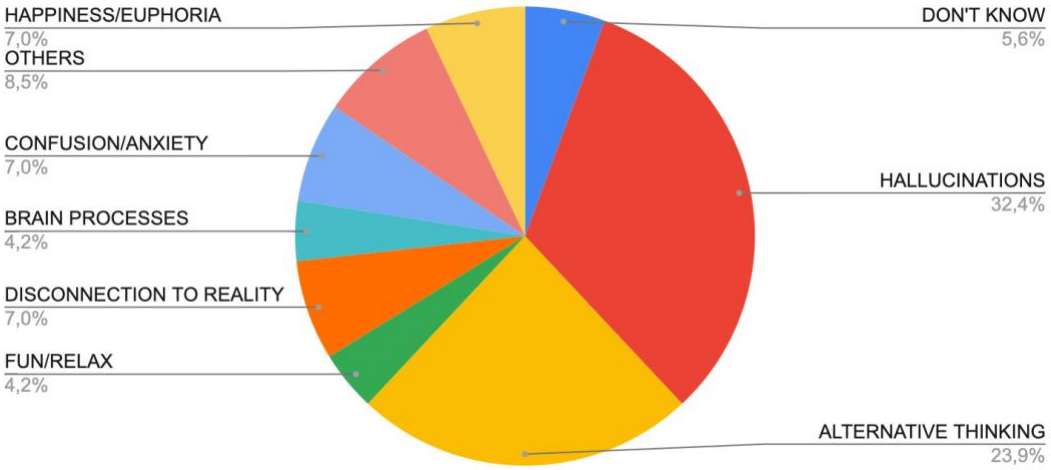
QUALITATIVE RESULTS

L. What comes to your mind when you read the words psilocybin mushrooms?



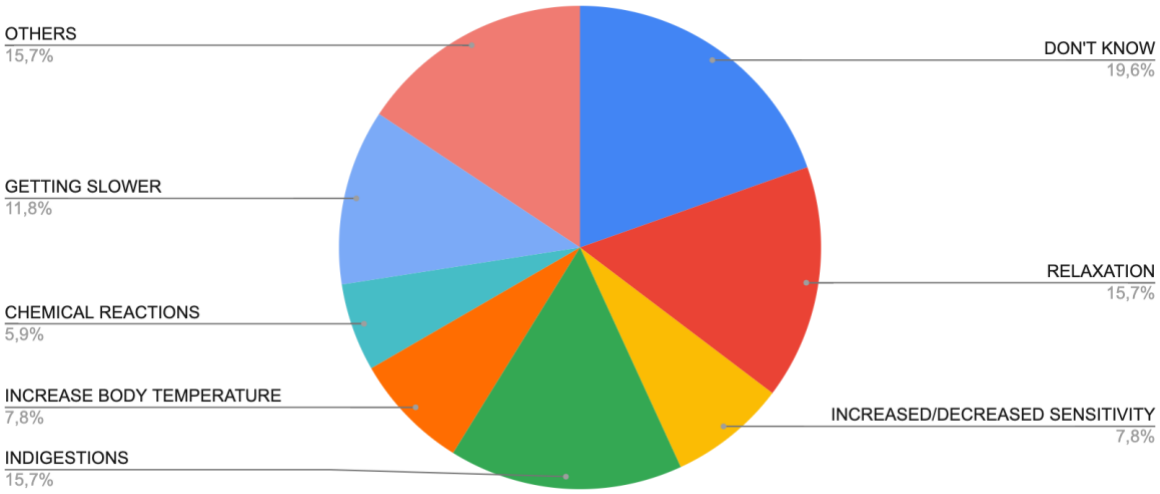
For the first question, *what comes to your mind when you read the words psilocybin mushrooms (magic mushrooms),* we got an amount of 12 answers out of 66 which were related to the word "fun" (**18,20%**), 28 answers were related to the word "hallucination" (**42,42%**), 4 to "bad trip" (**6,15 %**) and 15 to "drug" (**18,20%**). 3 answers talked about the effects of the drug (**4,50%**) and 7 answers could not be put into neither of those categories (**10,60%**). Only 2 people didn't answer to the question.

M. What do you think are the direct effects of psilocybin mushrooms on your mind?



We got 71 answers for the second open question. The most common answer was related to hallucinations (**32,4%**). **23,9%** of our answers were connected to some alternative way of thinking, for example *"you are creating links in your brain that you don't normally do"*. **7%** of the answers were related to disconnection to reality, confusion/anxiety and to happiness/euphoria. A few answers were linked to brain processes or funny/relaxed feelings. 4 respondents did not answer this question at all and **5,6%** of the answers were "I don't know".

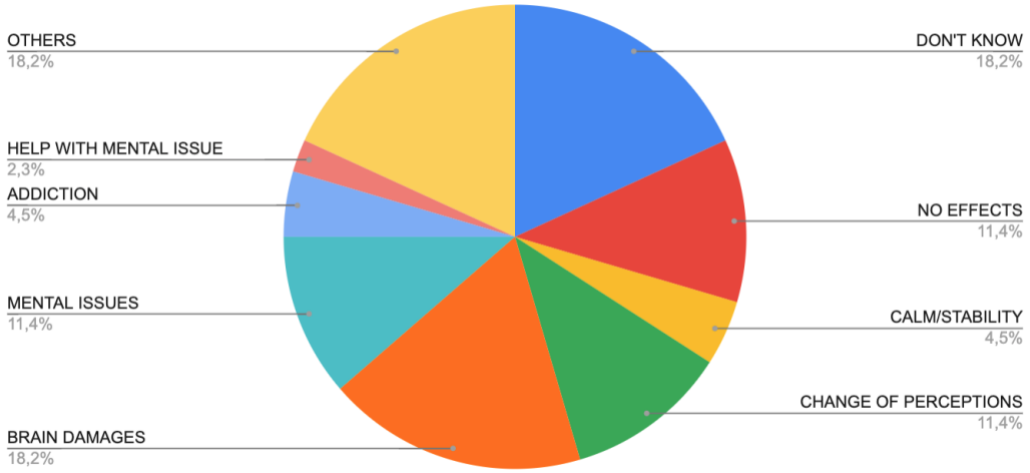
N. What do you think are the direct effects of psilocybin mushrooms on your body?



Almost ⅕ of answers to this question were "I don't know" and it was the most common answer. **15,7%** of answers were connected to relaxation or indigestions and **11,8%** of answers were about "getting slower". Others answer were related to increasing/decreasing

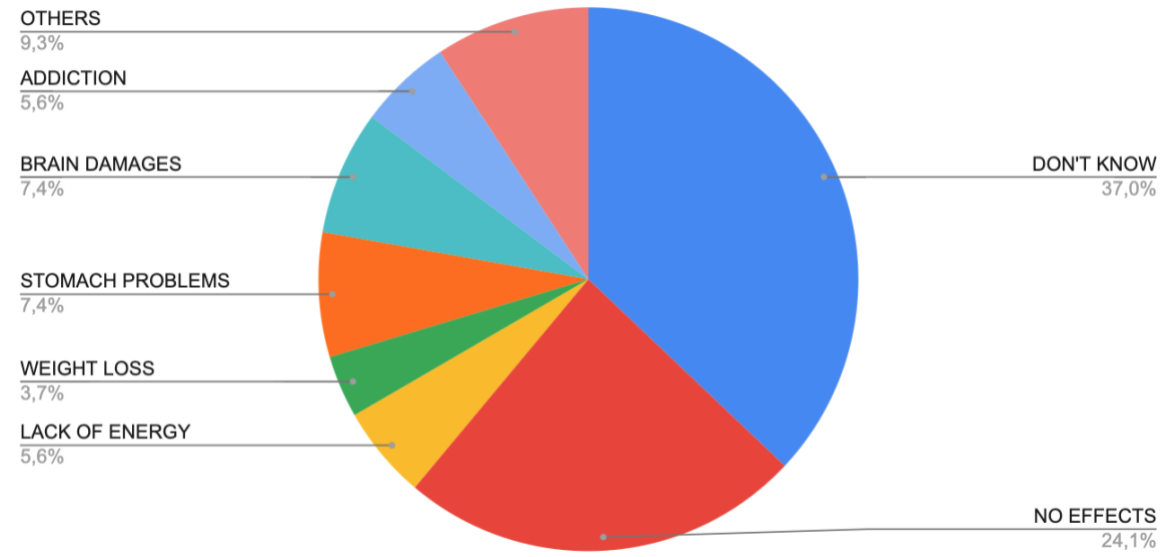
sensitivity or increasing body temperature. A lot of answers could not be categorized, so we had to classify them as "others". 9 people didn't answer this question at all.

O. What do you think are the long term effects of psilocybin mushrooms on your mind?



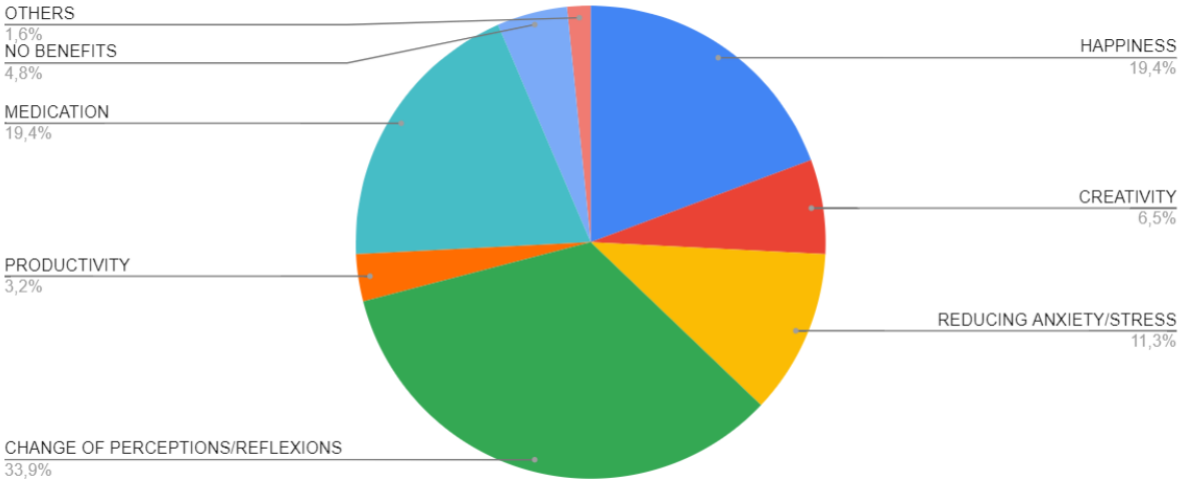
More than the quarter of the results are either respondents who didn't know what to write **(15,4%)** or "others" in which are regrouped all the answers that were too vague to be put into a category. The most common answer is brain damage with **18,2%**. The categories "mental issues", "change of perception" and "no effects", were separately **11,4%.** 4 people didn't answer to this question.

P. What do you think are the long term effects of psilocybin mushrooms on your body?



37,0% of the answers we received were "I don't know" or a blank answer. For this question, we received relatively a lot of answers confirming that psilocybin mushrooms had no long term effects on the body **(20,3%).** The other answers are far less popular with stomach problems at **6,3%**, weight loss at **3,1%** and lack of energy at **4,7%**. 4 person didn't answer the question.

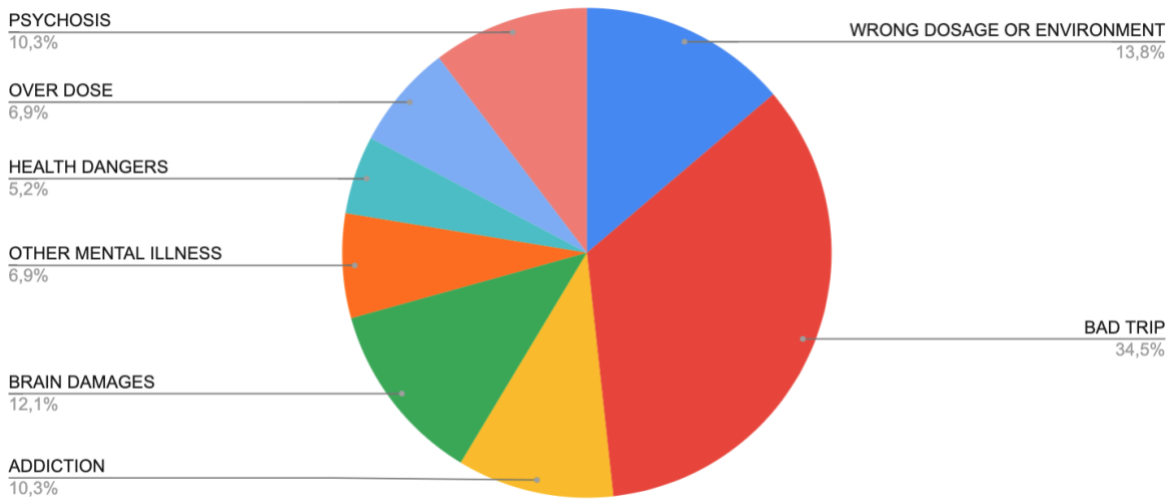
Q. What do you think are the benefits of using psilocybin mushrooms?



For this question, 21 answers out of 67 were related to a change of perceptions or some internal reflexions **(31,34%),** 12 answers were related to happiness **(17,91%)** and 12 answers to medication **(17,91%)**. Only 5 out of 67 answers **(7,46%)** said I don't know, 7 answers **(10,44%)** talked about reducing anxiety or stress, 4 said it was increasing creativity **(5,97%)**

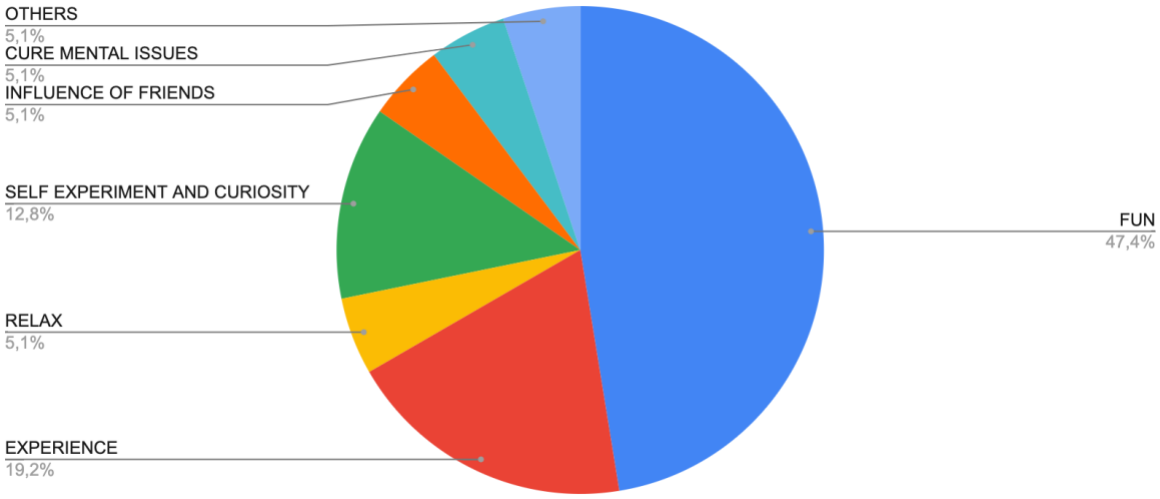
and 2 said it was increasing productivity **(2,98%).** 3 people do not see any benefits associated with psilocybin mushrooms **(4,48%)** and 1 answer could not be put into any category. Also, one respondent didn't answer the question.

R. What do you think are the dangers of using psilocybin mushrooms?



The category "bad trip" is by far the most popular here with more than ⅓ of the pie **(34,5%).** "Wrong dosage or environment" is also quite popular **(13,2%)**. These two categories together take up to almost half of the graph **(47,7%).** The category addiction takes **10,3%**. Psychosis takes **10,3%** and brain damage, **12,3%.** Other mental illnesses: **6,9%.** Health dangers: **5,2%**. Overdose: **6,9%.** 2 people didn't answer that question.

S. Why do you think people use psilocybin mushrooms?



The three most common answers are: 37 answers out of 78 said to have fun **(47,44%)**, 15 out of 78 to have an experience **(19,23%)** and 10 for self experiment or curiosity **(12,82%).** The total of these three answers is **79,49 %** which is more then ¾ of the answers. 4 answers were related to relaxing **(5,13%)**, 4 answers to cure mental illness **(5,13%)** and 4 answers mentioned the influence of friends.

DATA ANALYSIS

Despite all of the challenges we faced during the data collection, we managed to gather a lot of interesting and useful information about our target group's conceptions and attitudes towards psilocybin mushrooms. At this point, we needed to put all of the graphs in perspective, in order to paint an accurate picture of the situation.

We had a quite well divided target audience constituted of 44,1% women and 55,9% men. The majority of our respondents were located in Canada. 42,4% of all of them tried psilocybin mushrooms at least once in the past. This percentage was much higher than what we expected. We knew at this point that our target group would be more likely to know about mushrooms.

Question B gave us a pretty good first insight on how our target is feeling towards the drug. Only one respondent rated the drug as highly harmful. Although, by looking at the rest of the graph, we can see that the drug is still perceived as dangerous (70% of the respondents rated it as 3 or 4 on a scale of 1 to 5). The following question (**Question C)** let us believe that addiction is not one of the reason why the drug is perceived dangerous. Only a small percentage rated the drug as 4 or 5 (5 being highly addictive) at this question. This goes against our hypothesis stating that addiction was the main conception about magic mushrooms. We will talk about that later.

One of our most interesting discovery concerned the drug's dangers on the brain. Looking at **question D**, 17 people (28,8%) said that psilocybin mushrooms are either damageable or highly damageable for the brain. The results of **question O** are also going in the same direction: 18,2% of the answers stated that psilocybin mushrooms were causing brain damages on the long term. "Brain damage" is in fact the most popular category, exaequo with the "I don't know" category. These results made us believe that one important conception in our target group's mind is: psilocybin mushrooms cause brain damage.

Also, looking at the answers from **questions L, M and N**, we could see that our target group had a lot of relevant things to say about the drug. The word that came into the mind of more

than ⅓ of our respondents when they thought about psilocybin mushrooms is "hallucination". Psilocybin mushrooms do cause hallucinations, so we could consider that people were not off track (Hoffman, 2016). Also, 18,2 % of the answers were related to the word drug, again people were right: psilocybin mushrooms is considered a "drug", "a substance often illegal that causes addiction, habituation or a marked change in consciousness" (Merriam-Webster Dictionary, 2019). When asked about the direct effects of the drugs on the mind, answers were mentioning themes such as "alternative thinking", "disconnection to reality" or "confusion/anxiety". Those answers proved that most of our respondents already knew the effects that the substance has on the brain. In fact, only 5,6% of the answers were "I don't know".

On the other hand, in **graph O**, we could see that our target group was confused when it came to the long term effects on the body. The category "I don't know" takes up 18,2% of the graph. The category "others" which regrouped any answer that are not related to the question also takes up the same portion. When asked about the long term effects on the body (**question P)**, the confusion is even clearer. The "I don't know" answers went up to 37%. There is definitely a lack of knowledge concerning the long term effects of magic mushroom use.

Graph F was quite interesting to us. Even though people seemed to know about the drug, 41,4% of our respondents strongly agreed or agreed to the sentence "psilocybin mushrooms are scary". In other words, even though people know what are magic mushrooms and their effects on the body, they still feel some fear towards them.

Some important results were the ones shown in **graph R** concerning the dangers. Bad trips are seen, by far, as the main dangers of the psychedelic (34,5%). "A bad trip, as most know, is used to describe an unpleasant, horrible or torturous experience that follows the ingestion of a psychedelic substance; when really what this is, is a preconceived notion of what the journey becomes when one fights and struggles against unpleasant aspects of the psychedelic experience" (Kelly, 2017). Apart from this conception, the category "wrong dosage and environment" came second at 13,8%. These concerns, which we will talk more in the discussion, are real concerns for the recreational use of psychedelics.

More specifically about the medical use of psilocybin, results at **question E** showed that most of the respondents agreed or strongly agreed to the statement: psilocybin mushrooms (magic mushrooms) should be used for medicinal purposes. But at **question S**, we were surprised to note that only 9,8% of the answers mentioned the medicinal use. The target seems open to the use of the psychedelic for medical purposes but doesn't consider it as a solution.

At the end of our questionnaire we asked our respondents if they had any comments to add. Not all the people answered to it, and even less of them gave a relevant answer, but we still had a couple interesting points. Two people recommended not to do them in a bad mood/circumstances. Four of them said that they needed more information about them and two others suggested that psilocybin mushrooms should be legalized.

DISCUSSION

Data analysis allowed us to further understand the information our data were holding. Some of the conclusions we were able to make from the answers were quite surprising.
Though, we knew at this point that our job was far from over. It was time to put these conceptions and attitudes in perspective with what is scientifically proven and what's not.

Knowing that the goal of this whole research was to help designing a communication campaign, it was important for us to identify the exact needs of our target in terms of information. The discussion was the part where we sat together and made sure that we were focusing on the right issues while criticizing our methodology.

At the beginning of this project, we stated an hypothesis that was divided in two conceptions: Our target thinks that (1) psilocybin mushrooms are addictive and (2) psilocybin mushrooms are destroying the brain. With all the data we were able to collect during this research, we were able to deny the first one and validate the second one. Although, these discoveries were not the only ones that struck us.

One of the main thing that our research allowed us to discover is that our respondents knew a lot more about psilocybin mushrooms than what we expected. By looking at the answers we gathered, we were surprised by the variety of concepts and ideas that were brought by them. For example, the majority of the respondents didn't think psilocybin was addictive and, in fact, they are right: deep studies about mushrooms proved that psilocybin is not considered to be addictive nor does it cause compulsive use (The Drug Policy Alliance, 2017). For this reason, we made the decision that this piece of information wouldn't need to be mentioned in the communication campaign.

Although, our biggest discovery concerned the way people feel about magic mushrooms. While assuming that our target knew about the effects of the drug on the brain, we also discovered that they were afraid of it. In fact, this fear is driven by four main risks: bad trips, wrong dosage or environment and brain damage. These turned out to be our most important concerns.

Brain damage was really interesting because we knew that "classics hallucinogens have very low physiological toxicities, with no evidence of resulting organ damage or neuropsychological deficits even at a very high doses" (Johnson, 2008). Even though we couldn't confirm exactly where this conception came from, we would need to inform our target group about it in our campaign.

Bad trips, wrong dosage and environment, were also issues that needed to be faced. We realized that most of the risks mentioned were related to a recreational and unsupervised use of psilocybin. In other words, when people thought about these risks, they weren't off track. We know bad trips could happen and we do not underestimate the consequences. But those factors can be controlled in a medical experience.

For example, the study conducted by Dr. Lieberman and Dr. Salev who used psilocybin to treat patients who suffered of mental illness related to their diagnostic of cancer explains that "about 80 percent of cancer patients showed clinically significant reductions in psychological disorders after the single dose" (Hoffman, 2016). The researchers in this case explain the importance of the context to obtain positive results. The researchers made sure that the doses

were controlled, that everyone was comfortable and in the right mental state (Hoffman, 2016). This said, "in carefully controlled settings, psilocybin can be administered safely from a cardiovascular and neurologic perspective" (American Society for Clinical Pharmacology and Therapeutics, 2017).

"Otherwise, if the patient is fearful or not in the right mental stage, the substance can amplify his negative emotions and lead to a bad trip" (Mitrokostas, 2019). Therefore, we were confident that these issues could be solved by making sure our target group was well guided.

One other goal of this research was to identify our target group's information sources. This would have helped us with designing an accurate campaign. Unfortunately, **question I and J** concerning the source and the channel were wrongfully written. We made a few mistakes in the choices available for the respondents. The results of these two questions were therefore unusable, we will talk about it later.

This mistake is far from the only one we made during the whole process. We are aware of the fact that our research was not completely scientific. We did our best with the limited time, experience and resources we had. On the other hand, we think that we have learned from it. At this point, we reflected on our mistakes and we wanted to underline them. Our purpose is to avoid making the same ones if we would conduct another research.

A thing that could definitely be improved is narrowing down our target group. For example, we could have targeted only one country in order to be efficient in the campaign. We would also use a more scientific approach and we would not pick our respondents amongst the people we know. It limited the scientific value of our data.

We used an online survey, which is a convenient way to collect quantitative data. Though, we wanted to gather some qualitative data by integrating open questions. It turned out that people were annoyed by all these questions and did not gave us precise and detailed answers.

For a further research, we agreed that we would do both interviews and an online survey. Interviews would allow us to dig deeper into the knowledge and emotions of the respondents.

We also learned that we should always anticipate and plan the data analysis process before we create the survey, since some of our data in the survey weren't clear and easy to collect. This was, for example, a problem with the scales we used, because we couldn't simply define the data. Next time, we would make sure that there is nothing unspecified in our questionnaire. Another problem was that we did not test the final version of our questionnaire. We tested our survey one time and adjusted it according to the feedbacks we received. Then, we added new questions, we changed some open questions to multiple choices questions and sent it. However, since some of the adjusted questions were not made properly, we could not use the data from those answers. If we would do another survey like this in the future, we would make sure that we tested every version. This way, we would not make any mistakes and people would not be confused by any of our questions.

Also, we could identify inconsistencies in a few of the answers. Especially the questions regarding the long and short term effects of psilocybin. By looking a little further into the kind of answers we collected, we realized that two concepts in the question brought people to understand it in different ways: the time frame and the word “effect”.

We think the lack of precision in the questions had two consequences: identical answers at two different questions and an unusual large number of “I don’t know” answers. Next time, we would clarify the time frame for participants to understand the type of answer to provide.

SUGGESTIONS FOR THE COMMUNICATION CAMPAIGN

Now that we have underlined what message we want to give and who is our target group, we want to propose a summary.

Audience

18-25 years old

Message

- Since the majority of the respondents know about psilocybin mushrooms and what words it can be associated with, we would start off from that point to create the campaign. They also know that psilocybin mushrooms are not addictive, so we would not tell our target group information they already know.

- There are still misconceptions about the real effects of the substance. Our target group was not aware that psilocybin mushrooms are not causing any brain damages: the message would need to inform them of the real consequences. The campaign would also need to focus on the medicinal use of the substance, since the majority of out target's knowledge concern only the recreational use the psychedelic.

- 18-25 are afraid of bad-trips, dosage and environment. Since the campaign would be concerning the medicinal use, where patients are supervised, they need to be reassured about lower risks of bad tips. This is definitely a subject that needs to be explained to the target.

The sender

We wanted to find a proper sender in order to reach out accurately our target. Since we made a mistake in the questions about the source, we are just going to come up with our own opinion.

We can assume, with **question I and J**, that most people (68,3% of the answers) believe that a medical association like the ministry of health or a governmental association could be the right sender for a communication health campaign. **Graphic J** let us believe that curing mental issue is a personal subject. When asked where they would search for help, 35,6 % of respondents mentioned their family and friends and 37,3 % their own doctor. It's a sign that the campaign should also integrate a face-to-face communication strategy between our target and medical professionals.

CONCLUSION

Our research Question was: **What are the 18-25 years-old main conceptions and attitudes towards psilocybin mushrooms?**

With limited time and resources, we decided to face this question by creating an online survey and sent it to our target group. Data collected and the analysis that we conducted has led us to understand deeply the attitudes and the conceptions of 18 to 25 years old regarding psilocybin mushrooms. In the process, we found concrete proofs that many conceptions held by our target did not reflect the reality.

The main conclusions that we drawn from our data were:

- Our target group knows more about the direct effects than we expected;
- Our target group is afraid of psilocybin mushrooms;
- Psilocybin mushrooms is mainly perceived as a recreational drug;
- The main fears are: brain damage, bad drip and wrong dosage/environment.

These discoveries were afterward used to give specific suggestions for a communication campaign. A deep historical research led us to believe that the psychedelic and its benefits has been kept from the people since the 1960's. The communication campaign that we suggested would therefore be one of the first steps to break down the barriers of preconceptions and paving the way for future research on the subject.

We are well aware of how difficult it could be to change deep-rooted conceptions and attitudes such as these ones. Our team is also well aware of the research weaknesses. Though, we still believe that our work will motivate others to dig deeper in this issue.

THE ARTICLE

What is the story behind magic mushrooms?

A powerful cure to mental illnesses that we left in the 60's

4

On January 14th 1966, Timothy Leary took the microphone at a hippie gathering in Golden State Park, CA and shouted on of the most famous lines of this era: *"Tune on, tune in, drop out"*. He was of course talking about LSD, a strong psychoactive drug belonging to the family of psychedelics. In 60's and mid 70's, during the american counterculture movement, psychedelics were quite popular (Pollan, 2018). For older generations that were alive during this era, they saw their country change forever. But for us, newer generations, we came to this world and listen what our wise old folks had to say about them: psychedelics are bad for you, they cause brain damage. But do they?

The conceptions and attitudes towards psilocybin mushrooms - better known as magic mushrooms or shrooms - have changed dramatically in the last few decades.
It all started in the 50's when the american government spent millions of dollars on hundreds of researches on psychedelics. Results were really promising. Scientists saw psychedelic

4 https://the-gist.org/wp-content/uploads/2018/10/Shutterstock-720x340.jpg

mushrooms as a solution to cure mental illnesses like alcoholism, obsessive compulsive disorder, depression and much more. However, around 1965, a nationwide moral panic was triggered due to the drug being shared and consumed carelessly in the streets (Pollan, 2015). [5]

As a reaction to that, Nixon signed the Controlled Substance Act, in which most of psychedelics were declared illegal. All the funding for researches on those substances were cut down. He also claimed that these psychotropic substances would cause chromosome damage and birth defects, without any evidence whatsoever (Johnson, 2008). Even more shocking, Nixon's house aide, John Ehrlichman admitted the truth 48 years later, in 2016:

> *"We knew we couldn't make it illegal to be either against the war or blacks, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders. Raid their homes, break up their meetings,[...]. Did we know we were lying about the drugs? Of course we did" (Beacon Hill Times staff, 2019).*

It took almost 40 years for the U.S. government to give the opportunity to a group of psychiatrists at New York University (NYU) to conduct a research on the psychedelic. In 2006, NYU did a research on the use of psilocybin to decrease anxiety in cancer patients. There have been many researches on the beneficial use of psilocybin since then. However, we are quite

5 Turn on, Tune In, Drop Out - Timothy Leary
https://cdn1.bigcommerce.com/server4100/deb25/products/733/images/7152/Timothy_Leary_SM__55708.1532552010.1280.1280.jpg?c=2

far away from a world where psilocybin mushrooms are openly prescribed for medicinal purposes. Misconceptions from Nixon's propaganda campaign are still present in people's minds.

This was the starting point of the research our team conducted in the last month. We wanted to know what are the conceptions and attitudes held by our age group (18-25) towards psilocybin mushrooms. The goal was also to prepare the ground for a future information campaign about the medicinal use of the substance.

We therefore sent an online survey to people and the results of our research were really surprising to us:

- Our target group knows more about the direct effects than what we expected.
- Our target group is afraid of psilocybin mushrooms.
- Psilocybin mushrooms is mainly perceived as a recreational drug.
- The main fears are: brain damage, bad drip and wrong dosage/environment.

Researches on the psychedelic are still at their beginning and changing people's perception on it is going to be a whole other challenge. However, a movement has started.

Psilocybin mushrooms are gaining popularity in the medical world and their medicinal properties are used more and more to help with addictions and mental issues. [6]It's time for our generation to open the dialogue on medicinal use of psilocybin mushrooms and think rationally about it.

6 https://ptsdmindfulnesspsilocybin.blogspot.com/2015/04/set-and-setting-view-from-joseph.html

EXPLANATION OF THE ARTICLE

We decided to publish our story on an online publishing platform called *Medium*. *Medium* is an independent social journalism platform inviting professionals and thinkers to write about any subject they think is interesting. The platform offers their readers, quality short articles published online every day by the writers. In 2016, the website had about 60 millions visitors every month.

We decided to publish our one-time article on this platform because we believe that our subject fits perfectly with the type of article you can find there. *Medium* is focusing on ideas that are original (usually marginal), engaging for the audience, combined with viewpoints and storytelling[7].

As a team, we really wanted to present our subject in a fresh and engaging way. Our subject, psilocybin mushrooms, can be considered as marginal for most people and would need an environment suited perfectly for it. Also, *Medium* is a freshly designed place that draws the attention of the youngest generations. Since we are aiming at 18-25 year-olds from all over the world, we figured that it's one of the best place to publish. *Medium* is renowned for its big photos and clean interface.

Also, one of the main reason why we believe that this platform is the best for us is the fact that it is independant. Psilocybin mushrooms has been a central element in a war between the authorities and the counterculture during the 1960's in the United States. We wanted our story to be red as an eye-opening text about corruption and misuse of power.

Many reasons let us believe that our story will be interesting for our target. Mainly because our subject touches multiple fields: politics, history, social movements, science and communication. It's a subject that has being carrying a lot in the last decades but somehow has been hidden from society.

7 https://medium.com/about

People like controversial stories and we have one for them. Results clearly showed that there exists a common fear towards psilocybin, somehow based on misinformation. People in our target group were born in an era where the psychedelic is presented as a really bad thing. Although, we are recently starting to know more and more about the fascinating benefits of the drug.

We are aiming at the reader's rational side. We are asking them to be a little more open minded. For some, psilocybin mushrooms may look frightening. We hope that they will be able to put aside what the authority had thought them and be intrigued about what we have to say. Since our research is quite far from scientifical, we are not expecting them to change their attitudes completely. We want to pique their curiosity enough so they want to learn more about the medicinal potential of the psychedelic.

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